

[Sheldon L. Hitchcock]
[HSE Coordinator]

January 11, 2019

Christina Hernandez Oil Conservation Division, District 1 1625 N. French Dr. Hobbs, NM 88240

Ryan Mann New Mexico State Land Office 2827 N. Dal Paso Suite 117 Hobbs, NM 88240

**Re:** Closure Letter

Crockett State #002H API #: 30-025-41080 RP#: 1RP-5075

Unit Letter H, Section 35, Township 25S, Range 32 E

Lea County, New Mexico

Ms. Hernandez/Mr. Mann,

COG Operating, LLC (COG) is pleased to submit for your consideration the following closure report for the Crockett State #002H. This release occurred on May 22, 2018. Following the release an assessment of impacted soils was conducted. A remediation work plan was submitted to and subsequently approved by the New Mexico Oil Conservation Division (NMOCD) and the New Mexico State Land Office (NMSLO). A copy of the approved work plan is attached in Appendix V.

#### **BACKGROUND**

The Crockett State #002H is located in Unit Letter H, Section 20, Township 21 South and Range 33 East in Lea County, New Mexico. More specifically the latitude and longitude for this release are 32.4652519 North and -103.5866699 West.

On May 22, 2018, a valve on the casing failed resulting in the release of approximately fifteen (15) barrels (bbls) of produced water. All of the fluid remained on location.

Remediation activities were conducted in accordance with the approved work plan and NMOCD/NMSLO stipulations. The analytical results from the NMOCD and NMSLO stipulated confirmation soil sampling activities are summarized in the table below. A site diagram of the excavated area is presented in Appendix I.

January 11, 2019

#### GROUNDWATER AND SITE RANKING

According New Mexico Office of the State Engineer groundwater in the project vicinity is approximately five-hundred and seventy-two (572) feet below ground surface (BGS) (Appendix II). No water well or surface water was observed within one-thousand (1,000) feet of the release site. Therefore the site ranking for this release is zero (0) based on the following:

Depth to groundwater >100-feet
Distance to surface water body >1000-feet
Wellhead Protection Area >1000-feet

#### **CONFIRMATION SOIL SAMPLING RESULTS**

0 1 10	Sample		Soil Status			TPH (m	g/kg)		Benzene	Total BTEX	Chloride
Sample ID	Depth (ft)	Sample Date	In-Situ	Removed	GRO	DRO	MRO	Total	(mg/kg)	(mg/kg)	(mg/kg)
NMOCD RRAL L	imits (mg/kg)				•	-	-	5,000	10	50	600
BTTM-1	2.5	9/6/2018	Χ		<15.0	<15.0	<15.0	0.0	<0.002	<0.002	85.7
SW-1	N/A	9/6/2018	Χ		<15.0	<15.0	<15.0	0.0	<0.002	<0.002	41
SW-2	N/A	9/6/2018	Χ		<15.0	<15.0	<15.0	0.0	<0.002	<0.002	<4.98
SW-3	N/A	9/6/2018	Χ		<15.0	<15.0	<15.0	0.0	<0.002	<0.002	159
SW-4	N/A	9/12/2018	Χ		<15.0	<15.0	<15.0	0.0	<0.002	<0.002	345
SW-5	N/A	9/13/2018	Χ		<15.0	<15.0	<15.0	0.0	<0.002	<0.002	170
SW-6	N/A	9/14/2018		Χ	<15.0	<15.0	<15.0	0.0	<0.002	<0.002	1200
SW-7	N/A	9/15/2018	Χ		<15.0	<15.0	<15.0	0.0	<0.002	<0.002	105
SW-8	N/A	9/16/2018	Χ		<15.0	<15.0	<15.0	0.0	<0.002	<0.002	<4.95
2'/4'	N/A	9/17/2018		Х	<15.0	<15.0	<15.0	0.0	<0.002	<0.002	1130
2'/4'	N/A	9/24/2018	Х		<15.0	<15.0	<15.0	0.0	<0.002	<0.002	48
SW-6	N/A	9/24/2018	Χ		<15.0	<15.0	<15.0	0.0	<0.002	<0.002	96

January 11, 2019

### **CONFIRMATION SOIL SAMPLE LOCATION**

Sample ID	Lat/Long
BTTM-1	32.465209 -103.586714
SW-1	32.465210 -103.586639
SW-2	32.465140 -103.586734
SW-3	32.465220 -103.586815
SW-4	32.465335 -103.586901
SW-5	32.465431 -103.586813
SW-6	32.465511 -103.586692
SW-7	32.465448 -103.586579
SW-8	32.465325 -103.586613
2'/4'	32.465285 -103.586758

#### REMEDIAL ACTIONS

- The impacted area in the vicinity of sample locations SP-1 and SP-2 was excavated to a depth of four (4) feet BGS.
- The impacted area in the vicinity of sample location SP-3 was excavated to a depth of two and one-half (2.5) feet BGS.
- Confirmation soil samples were taken from the sidewalls of the excavated area per NMOCD and NMSLO stipulations.
- All of the excavated material was hauled to an NMOCD approved solid waste disposal facility.
- Upon receipt of analytical results confirming that all impacted soil above NMOCD RRAL's was successfully removed from the sidewalls, a liner was installed at the bottom of the four (4) foot BGS excavation in order to encapsulate the remaining chloride impacts.
- The excavation was backfilled with caliche and contoured to match the surrounding location.

#### **CLOSURE REQUEST**

COG Operating, LLC respectfully requests that the New Mexico Oil Conservation Division and the New Mexico State Land Office grant closure approval for the Crockett State #002H incident that occurred on May 22, 2018.

Should you have any questions or concerns please do not hesitate to contact me.

Sincerely,

Sheldon L. Hitchcock HSE Coordinator

Sheldon Witam

slhitchcock@concho.com

#### Enclosed:

Appendix I: Site Diagram

Appendix II: Groundwater Data Appendix III: Initial C-141 (Copy)

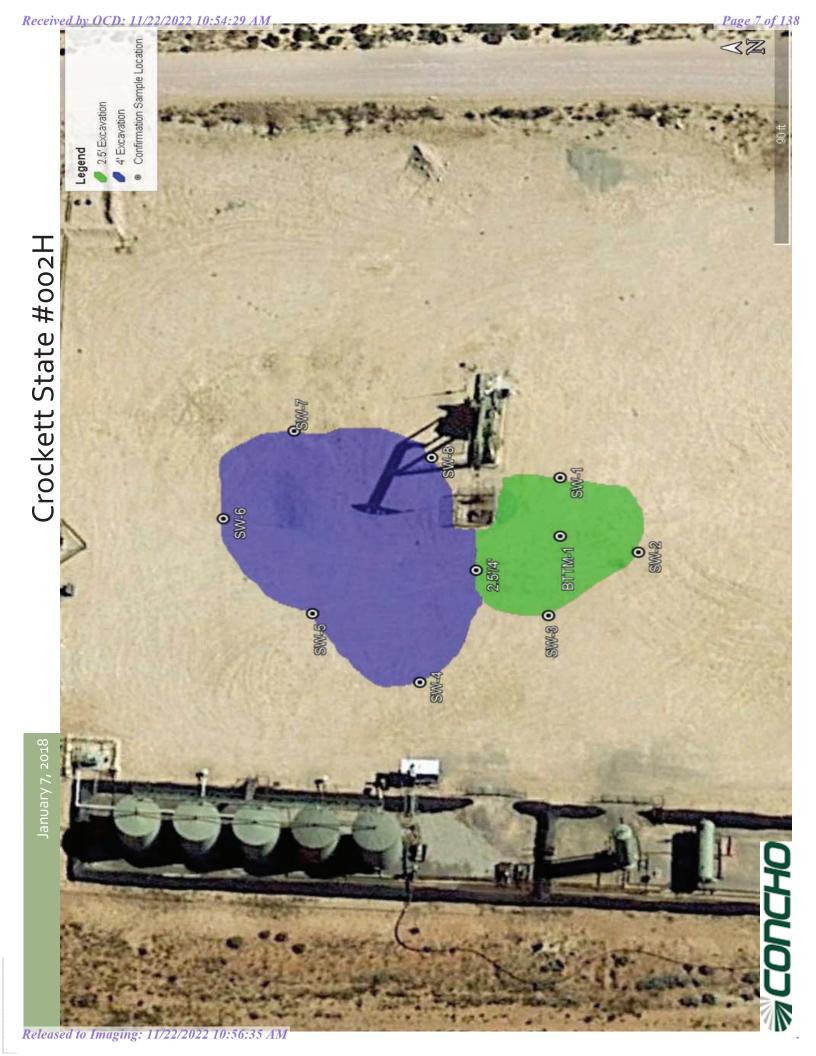
Appendix IV: Final C-141

Appendix V: Work Plan (Copy)

Appendix VI: Photographic Documentation

Appendix VII: Analytical Reports and Chain-of-Custody Forms

## APPENDIX I



## APPENDIX II



## New Mexico Office of the State Engineer Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned,

(quarters are 1=NW 2=NE 3=SW 4=SE) C=the file is closed)

(quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

POD Number	POD Sub- Code basin	County	Q (			Tws	Rng	Х	Y	Distance	-	Depth Water	Water Column
CP 00601 POD1	CP	LE		2 1	28	21S	33E	633502	3591791* 🌑	1451	223		
CP 01357 POD1	СР	LE	4	3 1	27	21S	33E	634782	3591347 🌑	2665	1286	578	708
CP 01355 POD1	CP	LE	2	1 3	27	21S	33E	634773	3591061 🌑	2844	1192	582	610
CP 01349 POD1	CP	LE	2	3 1	27	21S	33E	635304	3591576 🌑	2978	1188	572	616

Average Depth to Water: 577 feet

> Minimum Depth: 572 feet

Maximum Depth: 582 feet

**Record Count: 4** 

Basin/County Search:

County: Lea

UTMNAD83 Radius Search (in meters):

Easting (X): 632681 Northing (Y): 3592988 Radius: 3000

\*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

## APPENDIX III

Form C-141

Revised April 3, 2017

<u>District I</u> 1625 N. French Dr., Hobbs, NM 88240 District II 811 S. First St., 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

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

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

		~ 5511155	,			
Release Notification and Corrective Action						
			<b>OPERA</b>	ΓOR		l Report
Name of Company: COC			Contact:		rt McNeill	
Address: 600 West Illin		nd, TX 79701	Telephone N		83-7443	
Facility Name: Crockett	t State #002H		Facility Typ	e Wellhead		
Surface Owner: State		Mineral Own	er: State		API No.	30-025-41080
LOCATION OF RELEASE						
Unit Letter Section	Township Range		orth/South Line	Feet from the	East/West Line	County
Н 20	21S 33E	2,310	North	190	East	Lea
	La	titude 32.4652519	Longitude -10	3.5866699 NAD	83	
		NATUR	RE OF RELI	EASE		
Type of Release:			Volume of		Volume R	
Source of Release:	Produced Water			l. Produced Water lour of Occurrence		5 bbl. Produced Water Hour of Discovery:
Source of Release:	Valve Failure			22, 2018 3:00am		May 22, 2018 3:00am
Was Immediate Notice Giv		_	If YES, To		<u>'</u>	
	☐ Yes 🖂	No Not Requir	red			
By Whom?			Date and H			
Was a Watercourse Reache	d? □ Yes 🛛	No	If YES, Vo	lume Impacting th	e Watercourse.	
If a Watercourse was Impac	eted Describe Fully *					
ii a watercourse was impac	cied, Describe Fully.		RE	CEIVED		
			BV	Olivia Vu a	t 0.24 am	May 31, 2018
			Dy	Olivia Tu e	it 3.24 am,	May 31, 2010
Describe Cause of Problem	and Remedial Action	Taken.*				
The release was caused by			as been replaced.			
Describe Area Affected and	1 Cleanup Action Take	:II. ·				
						ea sampled to delineate any
						ficant remediation activities.
I hereby certify that the information all operators are						
public health or the environ						
						surface water, human health
or the environment. In add federal, state, or local laws		ance of a C-141 repo	rt does not reliev	e the operator of re	esponsibility for co	mpliance with any other
rederal, state, or local laws	and/or regulations.			OIL CONS	ERVATION 1	DIVISION
T	M. Assak			<u>orr corts</u>	Q A	<u> </u>
Signature:	Ellnn Opeant		_			
Printed Name:	DeAnn Grant		Approved by	Environmental Sp	ecialist:	
Title:	HSE Administrative A	ssistant	Approval Dat	5/31/2018	Expiration I	Date:
E-mail Address:	agrant@concho.com		Conditions of	Approval:		Attached N
Date: May 23, 2018	Pho	one: 432-253-4513	see atta	ched directive	е	

\* Attach Additional Sheets If Necessary

1RP-5075

nOY1815134158

pOY1815135921

## APPENDIX IV

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., 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 Department

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Form C-141 Revised August 24, 2018 Submit to appropriate OCD District office

Incident ID	
District RP	
Facility ID	
Application ID	

## **Release Notification**

### **Responsible Party**

Responsible Party COG Operating, LLC		OGRID	229137	
Contact Name	Jennifer Knowlton	Contact Tele	phone (432) 683-7443	
Contact email jknowlton@concho.com		Incident # (as	ssigned by OCD)	
Contact mailing address 600 West Illinois Avenue, Midland, Texas 79701				
	Location of R	elease Sou	irce	
Latitude 32.4652	2519	Longitude	-103.5866699	
	(NAD 83 in decimal de	_	places)	

Site Name	Crockett State #002H	Site Type	Tank Battery
Date Release Discovered	5/22/2018	API# (if applicable)	30-025-41080

Unit Letter	Section	Township	Range	County
Н	20	21S	33E	Lea

Surface Owner:   State Fe	leral Tribal Private (Name:	)

#### Nature and Volume of Release

	rature and volume or	Reicase					
Material	Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)						
Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)					
Produced Water	Volume Released (bbls) 15	Volume Recovered (bbls) 0.5					
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No					
Condensate	Volume Released (bbls)	Volume Recovered (bbls)					
Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)					
Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)					
Cause of Release							
Valve failure on cas	ing.						

Received by OCD: 11/22/2022 10:54:29 AM State of New Mexico
Page 4 Oil Conservation Division

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Incident ID

District RP

Facility ID

Application ID

I hereby certify that the information given above is true and complete to the regulations all operators are required to report and/or file certain release no public health or the environment. The acceptance of a C-141 report by the failed to adequately investigate and remediate contamination that pose a thr addition, OCD acceptance of a C-141 report does not relieve the operator of and/or regulations.	tifications and perform corrective actions for releases which may endanger OCD does not relieve the operator of liability should their operations have reat to groundwater, surface water, human health or the environment. In
Printed Name: Sheldon L. Hitchcock	Title: HSE Coordinator
Signature: Sheldon Witam	Date:
email: slhitchcock@concho.com	Telephone: 575-746-2010
OCD Only	
Received by:	Date:

<b>Received by OCD: 11/22/2022</b>	10:54:29 AM
Form C-141	State of New Mexico
Page 6	Oil Conservation Division

Page 15 of 138
Incident ID
District RP
Facility ID

**Application ID** 

## Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: Each of the following items must be included in the closure report.

A scaled site and sampling diagram as described in 19.15.29	2.11 NMAC
Photographs of the remediated site prior to backfill or photomust be notified 2 days prior to liner inspection)	os of the liner integrity if applicable (Note: appropriate OCD District office
■ Laboratory analyses of final sampling (Note: appropriate Of	OC District office must be notified 2 days prior to final sampling)
Description of remediation activities	
and regulations all operators are required to report and/or file certa may endanger public health or the environment. The acceptance of should their operations have failed to adequately investigate and rehuman health or the environment. In addition, OCD acceptance of compliance with any other federal, state, or local laws and/or regulated rectain, and re-vegetate the impacted surface area to the caccordance with 19.15.29.13 NMAC including notification to the Printed Name:  Sheldon L. Hitchcock  Signature:	lete to the best of my knowledge and understand that pursuant to OCD rules ain release notifications and perform corrective actions for releases which of a C-141 report by the OCD does not relieve the operator of liability emediate contamination that pose a threat to groundwater, surface water, of a C-141 report does not relieve the operator of responsibility for elations. The responsible party acknowledges they must substantially conditions that existed prior to the release or their final land use in OCD when reclamation and re-vegetation are complete.  Title:  HSE Coordinator  1/11/2019  Telephone:  575-746-2010
email: slhitchcock@concho.com	Telephone: 575-746-2010
OCD Only	
Received by:	Date:
	ty of liability should their operations have failed to adequately investigate and e water, human health, or the environment nor does not relieve the responsible d/or regulations.
Closure Approved by: Lattan Hall	Date: 11/22/2022
Printed Name: Brittany Hall	Title: Environmental Specialist

## APPENDIX V



PHONE (575) 397-6388 • FAX (575) 397- 0397 • 1324 W. MARLAND • P.O. BOX 805 • HOBI E-MAIL: cbrunson@bbcinternational.com

### **DELINEATION WORKPLAN**

COG – CROCKETT STATE #002H (Leak Date: 5/22/18)

RP # 1RP-5075

NMOCD approves of the delig completed and proposed remediation for 1RP-5075 with one condition: sidewall confirmation samples (at 4 ft. and 2.5 ft. bgs excavation) and bottom confirmation sample (at 2.5 ft. bgs excavation) are required. Additionally, please provide GPS coordinates for all remediation confirmation sample locations. Please be advised, confirmation sample points must not be no more than 50 ft apart and to be tested for BTEX, TPH Extended, and chlorides (sidewalls). Please provide photos for documentation including properly placed liner in the remediation closure report.

### **APPROVED**

By CHernandez at 3:50 pm, Jul 23, 2018

This delineation workplan and remediation proposal addresses the release associated with RP # 1RP-5075.

The following information includes:

- 1. Scaled digital site map with spill area demarcated and leak point identified along with sample point locations and areas of remediation at appropriate depths.
- 2. GPS information for sample points and sample methodology
- 3. Depth to groundwater information (i.e., pdf of OSE search results and/or copy of Chevron groundwater trend map).
- 4. Laboratory analysis results summary table and original laboratory analysis reports
- 5. A copy of the initial C-141
- 6. Potentially other pertinent information as necessary for site specific purposes.

Based on the information included in this package and the NMOCD guidelines, the following remediation is proposed:

COG will excavate the spill area as depicted on the following site diagram. The leak area near SP1 and SP2 (pink shade on diagram) will be excavated to a depth of 4 feet with an impermeable liner placed in the excavation. The leak area near SP3 (blue shade on diagram) will be excavated to a depth of 2.5 feet.

The entire site will then be backfilled with clean soil and revegetated (if warranted) to the standards of the appropriate regulatory agency or private surface owner.

All excavated materials will be disposed of at an NMOCD-approved disposal facility.



### COG, Crockett State #002H

Sample points

SP1, N 32.46539 W-103.58669

SP2, N 32.46532 W-103.58682

SP3, N 32.46521 W-103.58670

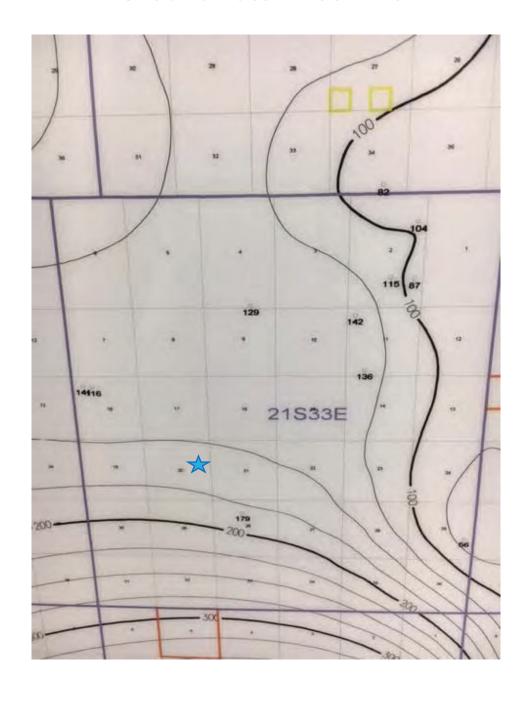
NORTH, N 32.46548 W-103.58668

SOUTH, N 32.46513 W-103.58672

EAST, N 32.46537 W-103.58656

WEST, N 32.46530 W-103.58691

## COG, Crockett State #002H U/L H, Section 20, T21S, R33E Groundwater: 150'-175'





# New Mexico Office of the State Engineer Water Column/Average Depth to Water

(NAD83 UTM in meters)

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.) (R=POD has been replaced, O=orphaned,

C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(In feet)

Average Depth to Water: -

Minimum Depth: -

Maximum Depth: --

Record Count: 1

UTMNAD83 Radius Search (in meters):

Easting (X): 632681 Northing (Y): 3592988 Radius: 1700

\*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

		Dubl	io Lond Sun	vey System (PLS	:6)	
•	Q64: 💙			Sec: 20 V Tws		<b>Rng:</b> 33E <b>✓</b>
0	<b>x</b> : 0 f			nate System - N	AD27	~
	× [0			nate System - N	AD83	
	<b>x</b> : 0 f			Zone:		
0	Longitude (X):		rees: 0 °	Minutes: 0	•	Seconds: 0 "
	Latitude (Y):	Deg	rees: 0 °	Minutes: 0	•	Seconds: 0 "
0	Easting (X	): 0 ~	UTM -	NAD27  Northing (Y):	0	mtrs Zone:
			SI	ЈВМІТ )		
			1	layed as <u>NAD 19</u>		
	Easting (X):	632681.0	mtrs	Northing (Y):	3592988.0	mtrs
	~~	Please keep s	creen open to	copy UTM values	for Reports	6. ~~

		Sample ID	SURFACE	SP1 @ 1.	SP1 @ 2'	SP1@3	SP1@4	SP1 @ 5	SP1 @ 6'	SP1 @ 7	SP1 @ 8'
Analyte	Method	Date	6/26/18	6/26/18	6/26/18	6/26/18	6/26/18	6/26/18	6/26/18	6/26/18	6/26/18
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Benzene	BTEX 8021B		0.093	050.0>	u/a	u/a	n/a	n/a	n/a	n/a	n/a
Toluene	BTEX 8021B		0.168	050.0>	u/a	u/a	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	BTEX 8021B		<0.050	050.0>	u/a	u/a	n/a	n/a	n/a	n/a	n/a
Total Xylenes BTEX 8021B	BTEX 8021B		<0.150	<0.150	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total BTEX	BTEX 8021B		<0.300	008'0>	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Chloride	SM4500CI-B		368	240	1880	2960	1630	1010	1070	160	80
GRO	<b>TPH 8015M</b>		<10.0	<10.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a
DRO	<b>TPH 8015M</b>		26.7	<10.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EXT DRO	<b>TPH 8015M</b>		12.1	<10.0	u/a	e/u	n/a	n/a	n/a	n/a	n/a

			SP2@								
		Sample ID	SURFACE	SP2@1	SP2 @ 2'	SP2@3'	SP2 @ 4'	SP2 @ 5'	SP2@6'	SP2@7"	SP2@8'
Analyte	Method	Date	6/26/18	6/26/18	6/26/18	6/26/18	6/26/18	6/26/18	6/26/18	6/26/18	6/26/18
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Benzene	BTEX 8021B		<0.050	<0.050	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Toluene	BTEX 8021B		<0.050	<0.050	n/a	n/a	e/u	n/a	n/a	n/a	e/u
Ethylbenzene	BTEX 8021B		<0.050	<0.050	n/a	n/a	n/a	n/a	n/a	n/a	e/u
<b>Total Xylenes</b>	BTEX 8021B		<0.150	<0.150	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total BTEX	BTEX 8021B		<0.300	<0.300	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Chloride	SM4500CI-B		320	224	1700	2880	1550	1040	1070	192	96
GRO	<b>TPH 8015M</b>		<10.0	<10.0	n/a	u/a	n/a	n/a	n/a	n/a	n/a
DRO	TPH 8015M		35.1	<10.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EXT DRO	<b>TPH 8015M</b>		20.6	<10.0	n/a	u/a	n/a	n/a	n/a	n/a	n/a

			SP3@			
		Sample ID	SURFACE	SP3 @ 1'	SP3 @ 2'	SP3@3'
Analyte	Method	Date	6/26/18	6/26/18	6/29/18	6/29/18
			mg/kg	mg/kg	mg/kg	mg/kg
Benzene	BTEX 8021B		<0.050	<0.050	n/a	n/a
Toluene	BTEX 8021B		<0.050	<0.050	n/a	n/a
Ethylbenzene	BTEX 8021B		<0.050	<0.050	n/a	n/a
Total Xylenes BTEX 8021B	BTEX 8021B		<0.150	<0.150	n/a	n/a
Total BTEX	BTEX 8021B		<0.300	<0.300	n/a	n/a
Chloride	SM4500CI-B		3720	2640	968	48
GRO	TPH 8015M		<10.0	<10.0	n/a	n/a
DRO	TPH 8015M		35.2	<10.0	n/a	n/a
EXT DRO	<b>TPH 8015M</b>		<10.0	<10.0	u/a	u/a

Analyte         Method         Date         6:29:18         mg/kg         c0.050				NORTH @	EAST @	WEST @	SOUTH @
te         Method         Date         6/29/18         6/29/18         6/29/18         6/29/18         6/29/18         6/29/18         6/29/18         6/29/18         6/29/18         6/29/18         6/20/18         6/20/19         6/20/20			Sample ID	SURFACE	SURFACE	SURFACE	SURFACE
BTEX 8021B	Analyte	Method	Date	6/29/18	6/29/18	6/29/18	81/62/9
BTEX 8021B				mg/kg	mg/kg	mg/kg	mg/kg
BTEX 8021B	Benzene	BTEX 8021B		<0.050	<0.050	050.0>	<0.050
seane         BTEX 8021B         <0.050	Toluene	BTEX 8021B		<0.050	<0.050	050.0>	090'0>
xx         BTEX 8021B         <0.150	Ethylbenzene			<0.050	<0.050	<0.050	090'0>
XX         BTEX 8021B         <0.300	<b>Total Xylenes</b>	BTEX 8021B		<0.150	<0.150	<0.150	<0.150
SMA500Cl-B         64         96         64           TPH 8015M         <10.0         <10.0         <10.0           TPH 8015M         <10.0         <10.0         <10.0           TPH 8015M         <10.0         <10.0         <10.0	Total BTEX	BTEX 8021B		<0.300	<0.300	<0.300	008'0>
TPH 8015M         <10.0	Chloride	SM4500CI-B		64	96	64	08
TPH 8015M <10.0 <10.0 <10.0 TPH 8015M <10.0 <10.0 <10.0	GRO	<b>TPH 8015M</b>		<10.0	<10.0	<10.0	<10.0
TPH 8015M <10.0 <10.0 <10.0	DRO	<b>TPH 8015M</b>		<10.0	<10.0	<10.0	<10.0
	EXT DRO	<b>TPH 8015M</b>		<10.0	<10.0	<10.0	<10.0

			SP3@			
		Sample ID	SURFACE	SP3 @ 1'	SP3 @ 2'	SP3@3'
Analyte	Method	Date	6/26/18	6/26/18	6/29/18	6/29/18
			mg/kg	mg/kg	mg/kg	mg/kg
Benzene	BTEX 8021B		<0.050	<0.050	n/a	n/a
Toluene	BTEX 8021B		<0.050	<0.050	n/a	n/a
Ethylbenzene	BTEX 8021B		<0.050	<0.050	n/a	n/a
Total Xylenes BTEX 8021B	BTEX 8021B		<0.150	<0.150	n/a	n/a
Total BTEX	BTEX 8021B		<0.300	<0.300	n/a	n/a
Chloride	SM4500CI-B		3720	2640	896	48
GRO	TPH 8015M		<10.0	<10.0	n/a	n/a
DRO	TPH 8015M		35.2	<10.0	n/a	n/a
EXT DRO	TPH 8015M		<10.0	<10.0	n/a	n/a



July 09, 2018

Cliff Brunson

BBC International, Inc.

P.O. Box 805

Hobbs, NM 88241

RE: CROCKETT STATE #002H

Enclosed are the results of analyses for samples received by the laboratory on 07/05/18 11:05.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-17-10. 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> 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)

Celey D. Keene

Accreditation applies to public drinking water matrices.

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

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



#### Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 07/05/2018 Sampling Date: 06/26/2018

Reported: 07/09/2018 Sampling Type: Soil

Project Name: CROCKETT STATE #002H Sampling Condition: Cool & Intact
Project Number: NONE GIVEN Sample Received By: Tamara Oldaker

A ... - L ... - - - I D. .. MC

Project Location: COG - LEA CO NM

#### Sample ID: SP 1 @ SURFACE (H801823-01)

BTEX 8021B	mg/	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	0.093	0.050	07/06/2018	ND	1.72	85.8	2.00	1.61	
Toluene*	0.168	0.050	07/06/2018	ND	1.71	85.7	2.00	1.32	
Ethylbenzene*	<0.050	0.050	07/06/2018	ND	1.70	84.9	2.00	0.619	
Total Xylenes*	<0.150	0.150	07/06/2018	ND	5.31	88.4	6.00	0.420	
Total BTEX	<0.300	0.300	07/06/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	106 9	% 69.8-14	2						
Chloride, SM4500Cl-B	mg/	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	368	16.0	07/06/2018	ND	432	108	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	07/05/2018	ND	185	92.5	200	5.77	
DRO >C10-C28*	26.7	10.0	07/05/2018	ND	210	105	200	2.11	
EXT DRO >C28-C36	12.1	10.0	07/05/2018	ND					
Surrogate: 1-Chlorooctane	82.1	% 41-142	?						
Surrogate: 1-Chlorooctadecane	92.4	% 37.6-14	7						

Cardinal Laboratories \*=Accredited Analyte

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Celeg Theene



#### Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 07/05/2018 Sampling Date: 06/26/2018

Reported: 07/09/2018 Sampling Type: Soil

Project Name: CROCKETT STATE #002H Sampling Condition: Cool & Intact
Project Number: NONE GIVEN Sample Received By: Tamara Oldaker

Analyzed By: MC

Project Location: COG - LEA CO NM

ma/ka

#### Sample ID: SP 1 @ 1' (H801823-02)

RTFY 8021R

	mg/	9	7	а ву: мѕ					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/06/2018	ND	1.72	85.8	2.00	1.61	
Toluene*	<0.050	0.050	07/06/2018	ND	1.71	85.7	2.00	1.32	
Ethylbenzene*	<0.050	0.050	07/06/2018	ND	1.70	84.9	2.00	0.619	
Total Xylenes*	<0.150	0.150	07/06/2018	ND	5.31	88.4	6.00	0.420	
Total BTEX	<0.300	0.300	07/06/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	105 9	% 69.8-14	2						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	240	16.0	07/06/2018	ND	432	108	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	07/05/2018	ND	185	92.5	200	5.77	
DRO >C10-C28*	<10.0	10.0	07/05/2018	ND	210	105	200	2.11	
EXT DRO >C28-C36	<10.0	10.0	07/05/2018	ND					
Surrogate: 1-Chlorooctane	92.1	% 41-142							
Surrogate: 1-Chlorooctadecane	101 9	% 37.6-14	7						

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Celeg D. Keine



#### Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 07/05/2018 Sampling Date: 06/26/2018

Reported: 07/09/2018 Sampling Type: Soil CROCKETT STATE #002H

Project Name: Sampling Condition: Cool & Intact Sample Received By: Project Number: NONE GIVEN Tamara Oldaker

Project Location: COG - LEA CO NM

#### Sample ID: SP 1 @ 2' (H801823-03)

Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1880	16.0	07/06/2018	ND	432	108	400	0.00	
Sample ID: SP 1 @ 3' (H8	801823-04)								
Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2960	16.0	07/06/2018	ND	432	108	400	0.00	
Sample ID: SP 1 @ 4' (H8	801823-05)								
Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1630	16.0	07/06/2018	ND	432	108	400	0.00	
Sample ID: SP 1 @ 5' (H8	801823-06)								
Chloride, SM4500CI-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1010	16.0	07/06/2018	ND	432	108	400	7.69	
Sample ID: SP 1 @ 6' (H8	801823-07)								
Chloride, SM4500Cl-B	-	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1070	16.0	07/06/2018	ND	432	108	400	7.69	

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Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager



#### Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 07/05/2018 Sampling Date: 06/26/2018

Reported: 07/09/2018 Sampling Type: Soil

Project Name: CROCKETT STATE #002H Sampling Condition: Cool & Intact
Project Number: NONE GIVEN Sample Received By: Tamara Oldaker

Project Location: COG - LEA CO NM

Sample ID: SP 1 @ 7' (H801823-08)

Chloride, SM4500Cl-B mg/kg Analyzed By: AC Analyte Result Reporting Limit Analyzed Method Blank BS % Recovery True Value QC RPD Qualifier Chloride 160 07/06/2018 ND 432 400 7.69 16.0 108

Sample ID: SP 1 @ 8' (H801823-09)

Chloride, SM4500Cl-B Analyzed By: AC mg/kg Reporting Limit Analyzed BS True Value QC RPD Qualifier Analyte Result Method Blank % Recovery Chloride 80.0 16.0 07/06/2018 432 400 7.69 ND 108

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#### Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 07/05/2018 Sampling Date: 06/26/2018

Reported: 07/09/2018 Sampling Type: Soil

Project Name: CROCKETT STATE #002H Sampling Condition: Cool & Intact Project Number: NONE GIVEN Sample Received By: Tamara Oldaker

Project Location: COG - LEA CO NM

#### Sample ID: SP 2 @ SURFACE (H801823-10)

BTEX 8021B	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/06/2018	ND	1.72	85.8	2.00	1.61	
Toluene*	<0.050	0.050	07/06/2018	ND	1.71	85.7	2.00	1.32	
Ethylbenzene*	<0.050	0.050	07/06/2018	ND	1.70	84.9	2.00	0.619	
Total Xylenes*	<0.150	0.150	07/06/2018	ND	5.31	88.4	6.00	0.420	
Total BTEX	<0.300	0.300	07/06/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	104	% 69.8-14	2						
Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	320	16.0	07/06/2018	ND	432	108	400	7.69	
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	07/05/2018	ND	185	92.5	200	5.77	
DRO >C10-C28*	35.1	10.0	07/05/2018	ND	210	105	200	2.11	
EXT DRO >C28-C36	20.6	10.0	07/05/2018	ND					
Surrogate: 1-Chlorooctane	86.0	% 41-142	?						
Surrogate: 1-Chlorooctadecane	96.5	% 37.6-14	7						

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#### Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 07/05/2018 Sampling Date: 06/26/2018

Reported: 07/09/2018 Sampling Type: Soil

Project Name: CROCKETT STATE #002H Sampling Condition: Cool & Intact
Project Number: NONE GIVEN Sample Received By: Tamara Oldaker

Analyzed By: MC

Project Location: COG - LEA CO NM

ma/ka

#### Sample ID: SP 2 @ 1' (H801823-11)

RTFY 8021R

BIEX 8021B	mg	/ kg	Anaiyze	а ву: м5					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/06/2018	ND	1.72	85.8	2.00	1.61	
Toluene*	<0.050	0.050	07/06/2018	ND	1.71	85.7	2.00	1.32	
Ethylbenzene*	<0.050	0.050	07/06/2018	ND	1.70	84.9	2.00	0.619	
Total Xylenes*	<0.150	0.150	07/06/2018	ND	5.31	88.4	6.00	0.420	
Total BTEX	<0.300	0.300	07/06/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	105	% 69.8-14	2						
Chloride, SM4500CI-B	mg,	/kg	Analyze	ed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	224	16.0	07/06/2018	ND	432	108	400	7.69	
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	07/05/2018	ND	185	92.5	200	5.77	
DRO >C10-C28*	<10.0	10.0	07/05/2018	ND	210	105	200	2.11	
EXT DRO >C28-C36	<10.0	10.0	07/05/2018	ND					
Surrogate: 1-Chlorooctane	93.7	% 41-142	?						
Surrogate: 1-Chlorooctadecane	101	% 37.6-14	7						

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Celeg D. Keine



#### Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 07/05/2018 Sampling Date: 06/26/2018

Reported: 07/09/2018 Sampling Type: Soil

Project Name: CROCKETT STATE #002H Sampling Condition: Cool & Intact
Project Number: NONE GIVEN Sample Received By: Tamara Oldaker

Project Location: COG - LEA CO NM

#### Sample ID: SP 2 @ 2' (H801823-12)

	•	•							
Chloride, SM4500Cl-B	mg	mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1700	16.0	07/06/2018	ND	432	108	400	7.69	
Sample ID: SP 2 @ 3' (H8	301823-13)								
Chloride, SM4500Cl-B	mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2880	16.0	07/06/2018	ND	432	108	400	7.69	
Sample ID: SP 2 @ 4' (H8	-	-							
Chloride, SM4500CI-B	mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1550	16.0	07/06/2018	ND	432	108	400	7.69	
Sample ID: SP 2 @ 5' (H8	801823-15)								
Chloride, SM4500Cl-B	mg	/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1040	16.0	07/06/2018	ND	432	108	400	7.69	
Sample ID: SP 2 @ 6' (H8	301823-16)								
Chloride, SM4500Cl-B	mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1070	16.0	07/06/2018	ND	432	108	400	7.69	

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Celegit Keine



108

#### Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 07/05/2018 Sampling Date: 06/26/2018

Reported: 07/09/2018 Sampling Type: Soil

Project Name: CROCKETT STATE #002H Sampling Condition: Cool & Intact Project Number: NONE GIVEN Sample Received By: Tamara Oldaker

Project Location: COG - LEA CO NM

Sample ID: SP 2 @ 7' (H801823-17)

Chloride, SM4500Cl-B mg/kg Analyzed By: AC Analyte Result Reporting Limit Analyzed Method Blank BS % Recovery True Value QC RPD Qualifier Chloride 192 07/06/2018 ND 432 400 7.69

16.0

Sample ID: SP 2 @ 8' (H801823-18)

Chloride, SM4500Cl-B Analyzed By: AC mg/kg Reporting Limit Analyzed BS True Value QC RPD Qualifier Analyte Result Method Blank % Recovery Chloride 96.0 16.0 07/06/2018 432 400 7.69 ND 108

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Celeg D. Freene



#### Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 07/05/2018 Sampling Date: 06/26/2018

Reported: 07/09/2018 Sampling Type: Soil

Project Name: CROCKETT STATE #002H Sampling Condition: Cool & Intact
Project Number: NONE GIVEN Sample Received By: Tamara Oldaker

Project Location: COG - LEA CO NM

#### Sample ID: SP 3 @ SURFACE (H801823-19)

BTEX 8021B	mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/06/2018	ND	1.72	85.8	2.00	1.61	
Toluene*	<0.050	0.050	07/06/2018	ND	1.71	85.7	2.00	1.32	
Ethylbenzene*	<0.050	0.050	07/06/2018	ND	1.70	84.9	2.00	0.619	
Total Xylenes*	<0.150	0.150	07/06/2018	ND	5.31	88.4	6.00	0.420	
Total BTEX	<0.300	0.300	07/06/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	106	% 69.8-14	22						
Chloride, SM4500Cl-B	mg,	/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3720	16.0	07/06/2018	ND	432	108	400	7.69	
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	07/05/2018	ND	185	92.5	200	5.77	
DRO >C10-C28*	35.2	10.0	07/05/2018	ND	210	105	200	2.11	
EXT DRO >C28-C36	<10.0	10.0	07/05/2018	ND					
Surrogate: 1-Chlorooctane	87.6	% 41-142	?						
Surrogate: 1-Chlorooctadecane	99.8	% 37.6-14	7						

Cardinal Laboratories \*=Accredited Analyte

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Celeg Theene



#### Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 07/05/2018 Sampling Date: 06/26/2018

Reported: 07/09/2018 Sampling Type: Soil

Project Name: CROCKETT STATE #002H Sampling Condition: Cool & Intact
Project Number: NONE GIVEN Sample Received By: Tamara Oldaker

Project Location: COG - LEA CO NM

#### Sample ID: SP 3 @ 1' (H801823-20)

BTEX 8021B	mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/06/2018	ND	1.72	85.8	2.00	1.61	
Toluene*	<0.050	0.050	07/06/2018	ND	1.71	85.7	2.00	1.32	
Ethylbenzene*	<0.050	0.050	07/06/2018	ND	1.70	84.9	2.00	0.619	
Total Xylenes*	<0.150	0.150	07/06/2018	ND	5.31	88.4	6.00	0.420	
Total BTEX	<0.300	0.300	07/06/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	106	% 69.8-14	2						
Chloride, SM4500Cl-B	mg	/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2640	16.0	07/06/2018	ND	432	108	400	7.69	
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	07/05/2018	ND	185	92.5	200	5.77	
DRO >C10-C28*	<10.0	10.0	07/05/2018	ND	210	105	200	2.11	
EXT DRO >C28-C36	<10.0	10.0	07/05/2018	ND					
Surrogate: 1-Chlorooctane	88.1	% 41-142							
Surrogate: 1-Chlorooctadecane	96.5	% 37.6-14	7						

#### Cardinal Laboratories \*=Accredited Analyte

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Celeg Theene



#### Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 07/05/2018 Sampling Date: 06/29/2018

Reported: 07/09/2018 Sampling Type: Soil

Project Name: CROCKETT STATE #002H Sampling Condition: Cool & Intact
Project Number: NONE GIVEN Sample Received By: Tamara Oldaker

Project Location: COG - LEA CO NM

Sample ID: SP 3 @ 2' (H801823-21)

Chloride, SM4500Cl-B mg/kg Analyzed By: AC Analyte Result Reporting Limit Analyzed Method Blank BS % Recovery True Value QC RPD Qualifier Chloride 896 07/06/2018 ND 432 400 7.69 16.0 108

Sample ID: SP 3 @ 3' (H801823-22)

Chloride, SM4500Cl-B Analyzed By: AC mg/kg Reporting Limit Analyzed BS True Value QC RPD Qualifier Analyte Result Method Blank % Recovery Chloride 48.0 16.0 07/06/2018 432 400 7.69 ND 108

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Celeg D. Keine



#### Analytical Results For:

BBC International, Inc. Cliff Brunson

P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 07/05/2018 Sampling Date: 06/29/2018

Reported: 07/09/2018 Sampling Type: Soil

Project Name: CROCKETT STATE #002H Sampling Condition: Cool & Intact
Project Number: NONE GIVEN Sample Received By: Tamara Oldaker

Analyzed By: MC

Project Location: COG - LEA CO NM

#### Sample ID: NORTH @ SURFACE (H801823-23)

RTFY 8021R

BIEX 8021B	тд/кд		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/06/2018	ND	1.72	85.8	2.00	1.61	
Toluene*	<0.050	0.050	07/06/2018	ND	1.71	85.7	2.00	1.32	
Ethylbenzene*	<0.050	0.050	07/06/2018	ND	1.70	84.9	2.00	0.619	
Total Xylenes*	<0.150	0.150	07/06/2018	ND	5.31	88.4	6.00	0.420	
Total BTEX	<0.300	0.300	07/06/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	105	% 69.8-14	2						
Chloride, SM4500Cl-B	mg,	/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	07/06/2018	ND	432	108	400	7.69	
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	07/05/2018	ND	185	92.5	200	5.77	
DRO >C10-C28*	<10.0	10.0	07/05/2018	ND	210	105	200	2.11	
EXT DRO >C28-C36	<10.0	10.0	07/05/2018	ND					
Surrogate: 1-Chlorooctane	77.4	% 41-142	•						
Surrogate: 1-Chlorooctadecane	85.6	% 37.6-14	7						

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Celey D. Keine



### Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 07/05/2018 Sampling Date: 06/29/2018

Reported: 07/09/2018 Sampling Type: Soil

Project Name: CROCKETT STATE #002H Sampling Condition: Cool & Intact
Project Number: NONE GIVEN Sample Received By: Tamara Oldaker

Project Location: COG - LEA CO NM

### Sample ID: EAST @ SURFACE (H801823-24)

BTEX 8021B	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/06/2018	ND	1.72	85.8	2.00	1.61	
Toluene*	<0.050	0.050	07/06/2018	ND	1.71	85.7	2.00	1.32	
Ethylbenzene*	<0.050	0.050	07/06/2018	ND	1.70	84.9	2.00	0.619	
Total Xylenes*	<0.150	0.150	07/06/2018	ND	5.31	88.4	6.00	0.420	
Total BTEX	<0.300	0.300	07/06/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	106	% 69.8-14	2						
Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	07/06/2018	ND	432	108	400	7.69	
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	07/05/2018	ND	185	92.5	200	5.77	
DRO >C10-C28*	<10.0	10.0	07/05/2018	ND	210	105	200	2.11	
EXT DRO >C28-C36	<10.0	10.0	07/05/2018	ND					
Surrogate: 1-Chlorooctane	87.7	% 41-142	?						
Surrogate: 1-Chlorooctadecane	94.7	% 37.6-14	7						

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### Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 07/05/2018 Sampling Date: 06/29/2018

Reported: 07/09/2018 Sampling Type: Soil

Project Name: CROCKETT STATE #002H Sampling Condition: Cool & Intact Tamara Oldaker Project Number: NONE GIVEN Sample Received By:

Project Location: COG - LEA CO NM

### Sample ID: WEST @ SURFACE (H801823-25)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/06/2018	ND	1.72	85.8	2.00	1.61	
Toluene*	<0.050	0.050	07/06/2018	ND	1.71	85.7	2.00	1.32	
Ethylbenzene*	<0.050	0.050	07/06/2018	ND	1.70	84.9	2.00	0.619	
Total Xylenes*	<0.150	0.150	07/06/2018	ND	5.31	88.4	6.00	0.420	
Total BTEX	<0.300	0.300	07/06/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	107 9	69.8-14	2						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	07/06/2018	ND	432	108	400	7.69	
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	07/05/2018	ND	185	92.5	200	5.77	
DRO >C10-C28*	<10.0	10.0	07/05/2018	ND	210	105	200	2.11	
EXT DRO >C28-C36	<10.0	10.0	07/05/2018	ND					
Surrogate: 1-Chlorooctane	92.3	% 41-142	!						
Surrogate: 1-Chlorooctadecane	101 9	6 37.6-14	7						

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### Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 07/05/2018 Sampling Date: 06/29/2018

Reported: 07/09/2018 Sampling Type: Soil

Project Name: CROCKETT STATE #002H Sampling Condition: Cool & Intact
Project Number: NONE GIVEN Sample Received By: Tamara Oldaker

Analyzed By: MC

Project Location: COG - LEA CO NM

ma/ka

### Sample ID: SOUTH @ SURFACE (H801823-26)

RTFY 8021R

BIEX 8021B	mg	/ kg	Anaiyze	а ву: м5					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/06/2018	ND	1.72	85.8	2.00	1.61	
Toluene*	<0.050	0.050	07/06/2018	ND	1.71	85.7	2.00	1.32	
Ethylbenzene*	<0.050	0.050	07/06/2018	ND	1.70	84.9	2.00	0.619	
Total Xylenes*	<0.150	0.150	07/06/2018	ND	5.31	88.4	6.00	0.420	
Total BTEX	<0.300	0.300	07/06/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	107	% 69.8-14	2						
Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	07/06/2018	ND	416	104	400	3.77	
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	07/05/2018	ND	185	92.5	200	5.77	
DRO >C10-C28*	<10.0	10.0	07/05/2018	ND	210	105	200	2.11	
EXT DRO >C28-C36	<10.0	10.0	07/05/2018	ND					
Surrogate: 1-Chlorooctane	83.6	% 41-142	ı						
Surrogate: 1-Chlorooctadecane	91.9	% 37.6-14	7						

Cardinal Laboratories \*=Accredited Analyte

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Celeg Theene



### **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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### Page 18 of 20

# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

ARDINAL LABORATORIES

101 East Marland, Hobbs, NM 88240 (505) 393-2326 FAX (505) 393-2476

Company Nam	Company Name: BBC International, Inc.	al, Inc.									18	BILL TO					A	ANALYSIS	YSI	REQUEST	EST			
Project Manag	Project Manager: Cliff Brunson							i	P.O. #:	#													_	
Address: P.O. Box 805	J. Box 805								Sor	Company:	.yı	600												
city: Hobbs		State: NM	Zip:		88241	41			Attn:	::	Bi	Backy Has	Skell											
Phone #: 575-397-6388	5-397-6388	Fax #: 575-397-0397	39	7-0.	397				Add	Address:	60													
Project #:		Project Owner:	_	200	b				City:															
Project Name:	Project Name: Crockett State #002H	I							State:	te:		Zip:												
Project Location	Project Location: Lea County, NM								Pho	Phone #:	#													
Sampler Name:	e: Jeff Ornelas								Fax #:	#														
FOR LAB USE ONLY				L		Σ	MATRIX	×	Ī	PRE	PRESERV.	SAMPLING	ING											
Lab I.D.	Sample I.D.	ď	(G)RAB OR (C)OMP.	# CONTAINERS	ВЕКОПИРМАТЕК	ABTAWBTSAW	OIF	SEUDGE	: ЯЭНТО	ACID/BASE:	ICE / COOL	DATE	TIME	12	BIEX	TPH EXT								
	SP1 @ SURFACE		0				>				1	6/26/18	9:33 AM	>	>	>								
d	SP1 @ 1'		5	-			1				1	6/26/18	9:49 AM	>	>	>								
n	SP1@2'		9	-			>				1	6/26/18	10:15 AM	1										
7	SP1@3'		5	-			1				1	6/26/18	10:32 AM	>										
5	SP1 @ 4'		0	-			1				1	6/26/18	10:52 AM	>										
10	SP1@5		6	-			1				1	6/26/18	11:15 AM	>										
1	7 SP1 @ 6'		6	-			1				1	6/26/18	11:33 AM	>										
.00	SP1 @ 7'		9	-			2				1	6/26/18	11:51 AM	>										
0	SP1@8'		9	-			1				1	6/26/18	12:12 PM	>										
11	SPA SURFACE	10	9	-			1				1	6/26/18	12:55 PM	>	>	>								
PLEASE NOTE: Liability	PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remody for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the	lient's exclusive remedy for an	ny clair	claim ansing wheth	ing whe	other ba	r based in	contract	or tort,	shall t	shall be limited to the amount p	to the amount p	aid by the client for	.the										

analyses. All daims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received 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 profits incurred by client, its subsidiaries.

Nas som Phone Result: Fax Result: REMARKS: Sample Condition
Cool Intact
Tes Tes Received By: Timesay Time: 500/4 Sampler - UPS - Bus - Other: Delivered By: (Circle One) Relinergisher By

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476

Page 19 of 20

# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

ARDINAL LABORATORIES 101 East Marland, Hobbs, NM 88240

505) 393-2326 FAX (505) 393-2476

ANALYSIS REQUEST 1:33 PM 1:11 PM 1:22 PM 2:15 PM 2:33 PM TIME 1:51 PM 2:44 PM 2:59 PM 3:15 PM 3:30 PM BILL TO DATE 6/26/18 6/26/18 6/26/18 6/26/18 6/26/18 6/26/18 6/26/18 6/26/18 6/26/18 6/26/18 Zip: : A3HTO Company: Address: ICE / COOF Phone #: P.O. #: State: Fax #: Attn: **∀CID\BYSE** City: : ABHTO STADGE TIO TIOS Zip: 88241 **MASTEWATER** Fax #: 575-397-0397 **ВЕТАМОИ ОЯБ** # CONTAINERS (G)RAB OR (C)OMP. 0 0 D Project Owner: State: NM Company Name: BBC International, Inc. Sample I.D. Project Name: Crockett State #002H SP3 @ SURFACE Project Location: Lea County, NM Jeff Ornelas Project Manager: Cliff Brunson SP2 @ 5' SP2 @ 6' SP2 @ 2' SP2@3' SP2 @ 4' SP2 @ 7 SP2 @ 8' SP2 @ 1 SP3 @ 1 Address: P.O. Box 805 Phone #: 575-397-6388 Sampler Name: EC 8 1087 city: Hobbs FOR LAB USE ONLY Lab I.D. Project #:

within 30 days after completion of the applicable ned by client, its subsic vice. In no event shall Cardinal be liable for incidental or consequental inalyses. All claims including those for negligence

□ Yes Fax Result: REMARKS: Cool Intact Sampler - UPS - Bus - Other: Delivered By: (Circle One)

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476

Released to Imaging: 11/22/2022 10:56:35 AM

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## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

# ARDINAL LABORATORIES

101 East Marland, Hobbs, NM 88240 (505) 393-2326 FAX (505) 393-2476

Company Name	Company Name: BBC International, Inc.	ıl, Inc.										10	מורריכ						ANALYSIS	73	Y	S	REQUEST				
Project Manage	Project Manager: Cliff Brunson								4	P.O. #:	#					H	-	_				_	-	H	-		
Address: P.O. Box 805	. Box 805								O	omo	Company:	"	8														
city: Hobbs		State: NM	Zip	Zip: 88241	882	141			4	ttn:	Attn: Reckyl	eck	SHOW IN	ell contractions										_			
Phone #: 575-397-6388	397-6388	Fax #: 575-397-0397	.39	7-0	39	7			A	ddr	Address:		,														
Project #:		Project Owner:	_	900	6				O	City:																	
Project Name:	Project Name: Crockett State #002H	T				7 1	1		S	State:	21		Zip:														
Project Locatio	Project Location: Lea County, NM								۵	hon	Phone #:	par															
Sampler Name:	Jeff Ornelas								II.	Fax #:	344													_			
FOR LAB USE ONLY				L	L		MAT	IATRIX	1	ā	PRESERV	ERV.	SAMPLING	LING		_											
Lab I.D.	Sample I.D.	o.	е)вкв ов (с)омр.	# CONTAINERS	ЭВООИВМАТЕЯ	ABTAWBTSAW	POIL	IIC	SLUDGE	CID/BASE:	CE / COOF	: A3HTC	DATE	TIME	/ <i>/</i>	1)	X7181	TX3 H9T									
2/	SP3 @ 2'		0		-	-	-	-	-	-		1	6/29/18	9:45 AM	NA MA		+	-				L	H	-	H	T	
120	SP3 @ 3'		0	-			7				7	-	6/29/18	10:33 AM	AM								H				
23	NORTH @ SURFACE	\CE	9	-			1		H		1		6/29/18	11:00 AM	AM	_	>	>									
34	EAST @ SURFACE	Ė	9	-			1				7		6/29/18	11:22 AM	AM	>	_	>									
25	WEST @ SURFACE	兴	9	-			1				1		6/29/18	11:40 AM	AM	>	_	`									
26	SOUTH @ SURFACE	CE	0	-			1				1		6/29/18	12:30 PM	PM	,	/	>									
		/																						H			
	N/V									_																	
	white															Н											
	1				_					-																	

PLEASE NOTE: Lability and Damages. Candrina's islability and cleart's exclusive remedy for any claim arising whether based in contract or tost, shall be limited to the amount paid to clear the client for the clear for the client fo

Fax Result: REMARKS: CHECKED BY (Initials) Cool Intact Received By: Date: 5-18 Tigne: COLD orhe Sampler - UPS - Bus - Other: Delivered By: (Circle One) Relinquished By:

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476

Form C-141

Revised April 3, 2017

<u>District I</u> 1625 N. French Dr., Hobbs, NM 88240 District II 811 S. First St., 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

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

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

				56	iiita 1	C, INIVI 673	03					
			Rele	ease Notific	atio	n and Co	orrective A	ction				
						<b>OPERA</b>	ГOR			l Report		Final Report
				OGRID #22913	37)	Contact:		ert McN				
				nd, TX 79701		Telephone N		683-74	43			
Facility Nar	ne: Crock	ett State #00	)2H			Facility Typ	e Wellhead					
Surface Ow	ner: Sta	te		Mineral C	)wner:	State			API No.	30-025-4	1080	
				LOCA	\TIO	N OF REI	LEASE					
Unit Letter	Section	Township	Range	Feet from the		h/South Line	Feet from the	East/V	Vest Line		Cour	nty
Н	20	21S	33E	2,310		North	190	I	East		Lea	a
			La	atitude 32.4652	519 L	ongitude -10	3.5866699 NAI	083				
						OF REL						
Type of Relea	ase:					Volume of			Volume R	ecovered:		
		Produced	Water				l. Produced Water			.5 bbl. Prod		
Source of Re	lease:	Valve Fa	ilura				Iour of Occurrence 22, 2018 3:00am			Hour of Dis May 22, 20		
Was Immedia	ate Notice (		inuic			If YES, To				Wiay 22, 20	16 5.0	Oam
			Yes 🗵	No 🛛 Not R	equired							
By Whom?						Date and F	Iour:					
Was a Water	course Reac	_	5	7		If YES, Vo	olume Impacting tl	he Wate	ercourse.			
		Ш	Yes 🗵	] No								
If a Watercou	ĺ		·				Olivia Yu		24 am,	May 3	1, 2	2018
Describe Cau	ise of Proble	em and Remed	dial Action	n Taken.*								
				ng failing. The val	ve has	been replaced	•					
Describe Are	a Affected a	and Cleanup A	Action Tak	cen.*								
							g fluids. Concho w MOCD for approve					
							knowledge and u					
public health should their o	or the environment. In a	ronment. The ave failed to a ddition, NMC	acceptand dequately CD accep	ce of a C-141 reporting the control of a C-141 reporting the control of the contr	ort by tl emedia	ne NMOCD m te contaminati	nd perform correct arked as "Final Rection that pose a three the operator of rections."	eport" d eat to gr	oes not relicular	eve the ope , surface wa	rator o	of liability uman health
							OIL CONS	SERV	ATION	DIVISIO	)N	
Signature:		Delinn	want.						ىق	4 /	-	
Printed Name	e:	DeAnn Grai	0.			Approved by	Environmental Sp	pecialist	:			
Title:		HSE Admir		Assistant		Approval Da	5/31/201	8 <sub>I</sub>	Expiration I	Date:		
E-mail Addre	ess:	agrant@coi	ncho.com			Conditions of			_	Attached		
Date: May 23	3 2018		D1	none: 432-253-45	13	see atta	ched directiv	/e		Attached	<b>"</b>	

\* Attach Additional Sheets If Necessary

1RP-5075

nOY1815134158

pOY1815135921

Operator/Responsible Party,

The OCD has received the form C-141 you provided on \_5/24/2018\_ regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number \_1RP-5075\_\_ has been assigned. Please refer to this case number in all future correspondence.

It is the Division's obligation under both the Oil & Gas Act and Water Quality Act to provide for the protection of public health and the environment. Our regulations (19.15.29.11 NMAC) state the following,

The responsible person shall complete <u>division-approved corrective action</u> for releases that endanger public health or the environment. The responsible person shall address releases in accordance with a remediation plan submitted to and approved by the division or with an abatement plan submitted in accordance with 19.15.30 NMAC. [emphasis added]

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District \_1\_ office in \_\_Hobbs\_\_\_\_ on or before \_6/30/2018\_. If and when the release characterization workplan is approved, there will be an associated deadline for submittal of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.

The goals of a characterization effort are: 1) determination of the lateral and vertical extents along with the magnitude of soil contamination. 2) determine if groundwater or surface waters have been impacted. 3) If groundwater or surface waters have been impacted, what are the extents and magnitude of that impact. 4) The characterization of any other adverse impacts that may have occurred (examples: impacts on vegetation, impacts on wildlife, air quality, loss of use of property, etc.). To meet these goals as quickly as possible, the following items must, at a minimum, be addressed in the release characterization workplan and subsequent reporting:

- Horizontal delineation of soil impacts in each of the four cardinal compass directions. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C<sub>6</sub> thru C<sub>36</sub>), and for chloride by Method 300. This is not an exclusive list of potential contaminants. Analyzed parameters should be modified based on the nature of the released substance(s). Soil sampling must be both within the impacted area and beyond.
- Vertical delineation of soil impacts. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C<sub>6</sub> thru C<sub>36</sub>), and for chloride by Method 300. As above, this is not an exclusive list of potential contaminants and can be modified. Vertical characterization samples should be taken at depth intervals no greater than five feet apart. Lithologic description of encountered soils must also be provided. At least ten vertical feet of soils with contaminant concentrations at or below these values must be demonstrated as existing above the water table.
- Nominal detection limits for field and laboratory analyses must be provided.
- Composite sampling is not generally allowed.
- Field screening and assessment techniques are acceptable (headspace, titration, EC [include algorithm for validation purposes], EM, etc.), but the sampling and assay procedures must be clearly defined. Copies of field notes are highly desirable. A statistically significant set of split samples must be submitted for confirmatory laboratory analysis, including the laterally farthest and vertically deepest sets of soil samples. Make sure there are at least two soil samples submitted

for laboratory analysis from each borehole or test pit (highest observed contamination and deepest depth investigated). Copies of the actual laboratory results must be provided including chain of custody documentation.

- •Probable depth to shallowest protectable groundwater and lateral distance to nearest surface water. If there is an estimate of groundwater depth, the information used to arrive at that estimate must be provided. If there is a reasonable assumption that the depth to protectable water is 50 feet or less, the responsible party should anticipate the need for at least one groundwater monitoring well to be installed in the area of likely maximum contamination.
- If groundwater contamination is encountered, an additional investigation workplan may be required to determine the extents of that contamination. Groundwater and/or surface water samples, if any, must be analyzed by a competent laboratory for volatile organic hydrocarbons (typically Method 8260 full list), total dissolved solids, pH, major anions and cations including chloride and sulfate, dissolved iron, and dissolved manganese. The investigation workplan must provide the groundwater sampling method(s) and sample handling protocols. To the fullest extent possible, aqueous analyses must be undertaken using nominal method detection limits. As with the soil analyses, copies of the actual laboratory results must be provided including chain of custody documentation.
- Accurately scaled and well-drafted site maps must be provided providing the location of borings, test pits, monitoring wells, potentially impacted areas, and significant surface features including roads and site infrastructure that might limit either the release characterization or remedial efforts. Field sketches may be included in subsequent reporting, but should not be considered stand-alone documentation of the site's layout. Digital photographic documentation of the location and fieldwork is recommended, especially if unusual circumstances are encountered.

Nothing herein should be interpreted to preclude emergency response actions or to imply immediate remediation by removal cannot proceed as warranted. Nonetheless, characterization of impacts and confirmation of the effectiveness of remedial efforts must still be provided to the OCD before any release incident will be closed.

### Jim Griswold

OCD Environmental Bureau Chief 1220 South St. Francis Drive Santa Fe, New Mexico 87505 505-476-3465 jim.griswold@state.nm.us

### APPENDIX VI

② 272°W (T) ② 32.464878°, -103.586273° ±16.4ft ▲ 3789ft









### APPENDIX VII

## Certificate of Analysis Summary 598366 COG Operating LLC, Artesia, NM

Project Name: Crockett St. 2H

Date Received in Lab: Fri Sep-07-18 01:00 pm Project Manager: Jessica Kramer Report Date: 10-SEP-18

	Lab Id:	598366-001	598366-002	598366-003	598366-004	
Analysis Domostod	Field Id:	Bottom-1 2.5'	SW-1	SW-2	SW-3	
Anutysis Nequesieu	Depth:	2.5- ft				
	Matrix:	SOIL	SOIL	SOIL	NOS	
	Sampled:	Sep-06-18 08:00	Sep-06-18 08:05	Sep-06-18 08:10	Sep-06-18 08:15	
BTEX by EPA 8021B	Extracted:	Sep-09-18 10:00	Sep-09-18 10:00	Sep-09-18 10:00	Sep-09-18 10:00	
	Analyzed:	Sep-10-18 11:04	Sep-10-18 03:12	Sep-10-18 03:33	Sep-10-18 03:53	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Benzene		<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	
Toluene		<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	
Ethylbenzene		<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	
m,p-Xylenes		<0.00401 0.00401	<0.00399 0.00399	<0.00398 0.00398	<0.00403 0.00403	
o-Xylene		<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	
Total Xylenes		<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	
Total BTEX		<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	
Chloride by EPA 300	Extracted:	Sep-07-18 17:15	Sep-07-18 17:15	Sep-07-18 17:15	Sep-07-18 17:15	
	Analyzed:	Sep-08-18 00:42	Sep-08-18 01:01	Sep-08-18 01:07	Sep-08-18 01:13	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		85.7 4.98	41.0 4.96	<4.98 4.98	159 5.00	
TPH By SW8015 Mod	Extracted:	Sep-07-18 17:00	Sep-07-18 17:00	Sep-07-18 17:00	Sep-07-18 17:00	
	Analyzed:	Sep-08-18 14:03	Sep-08-18 14:59	Sep-08-18 15:17	Sep-08-18 15:36	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Gasoline Range Hydrocarbons		<15.0 15.0	<14.9 14.9	<14.9 14.9	<15.0 15.0	
Diesel Range Organics		<15.0 15.0	<14.9 14.9	<14.9 14.9	<15.0 15.0	
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<14.9 14.9	<14.9 14.9	<15.0 15.0	



15.0

<15.0

14.9

<14.9

14.9

<14.9

15.0

<15.0

Total TPH

Project Assistant Jessica Kramer

Final 1.000

Page 1 of 18

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Contact:

Sheldon Hitchcock Lea Co.NM Project Location:

Project Id:

### **Analytical Report 598366**

### tor COG Operating LLC

Project Manager: Sheldon Hitchcock
Crockett St. 2H

10-SEP-18

Collected By: Client





### 1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-18-27), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054) Oklahoma (2017-142)

> Xenco-Dallas (EPA Lab Code: TX01468): Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-13)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-17)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-16)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)

Xenco-Tampa: Florida (E87429) Xenco-Lakeland: Florida (E84098)





10-SEP-18

Project Manager: Sheldon Hitchcock

COG Operating LLC 2407 Pecos Avenue Artesia, NM 88210

Reference: XENCO Report No(s): 598366

Crockett St. 2H

Project Address: Lea Co.NM

### **Sheldon Hitchcock:**

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 598366. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 598366 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Jessica Kramer

Jessica Vramer

**Project Assistant** 

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

Certified and approved by numerous States and Agencies.

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Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America



### **Sample Cross Reference 598366**



### COG Operating LLC, Artesia, NM

Crockett St. 2H

Sample Id	Matrix	<b>Date Collected</b>	Sample Depth	Lab Sample Id
Bottom-1 2.5'	S	09-06-18 08:00	2.5 ft	598366-001
SW-1	S	09-06-18 08:05	ft	598366-002
SW-2	S	09-06-18 08:10	ft	598366-003
SW-3	S	09-06-18 08:15	ft	598366-004

### **CASE NARRATIVE**

Client Name: COG Operating LLC Project Name: Crockett St. 2H

Project ID: Report Date: 10-SEP-18
Work Order Number(s): 598366 Date Received: 09/07/2018

### Sample receipt non conformances and comments:

None

### Sample receipt non conformances and comments per sample:

None

### Analytical non conformances and comments:

Batch: LBA-3062575 BTEX by EPA 8021B

Ethylbenzene, m,p-Xylenes, o-Xylene Relative Percent Difference (RPD) between matrix spike and

duplicate were above quality control limits.

Samples in the analytical batch are: 598366-001, -002, -003, -004

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Lab Sample ID 598366-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 598366-001, -002, -003, -004. The Laboratory Control Sample for Toluene, m,p-Xylenes, Ethylbenzene, o-Xylene is within laboratory

Control Limits, therefore the data was accepted.





### COG Operating LLC, Artesia, NM

Crockett St. 2H

Sample Id: **Bottom-1 2.5'** 

Matrix: Soil

Date Received:09.07.18 13.00

Lab Sample Id: 598366-001

Date Collected: 09.06.18 08.00

Sample Depth: 2.5 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P % Moisture:

Tech:

SCM

Date Prep: 09.07.18 17.15

Basis:

Wet Weight

Analyst: SCM
Seq Number: 3062573

 Parameter
 Cas Number
 Result
 RL
 Units
 Analysis Date
 Flag
 Dil

 Chloride
 16887-00-6
 85.7
 4.98
 mg/kg
 09.08.18 00.42
 1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech: Analyst: ARM ARM

Date Prep: 09.07.18 17.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0		mg/kg	09.08.18 14.03	U	1
Diesel Range Organics	C10C28DRO	<15.0	15.0		mg/kg	09.08.18 14.03	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	09.08.18 14.03	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	09.08.18 14.03	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	98	%	70-135	09.08.18 14.03		
o-Terphenyl		84-15-1	102	%	70-135	09.08.18 14.03		





### COG Operating LLC, Artesia, NM

Crockett St. 2H

Sample Id: Bottom-1 2.5' Matrix: Soil

Date Received:09.07.18 13.00

Lab Sample Id: 598366-001 Date Collected: 09.06.18 08.00

Sample Depth: 2.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.09.18 10.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	09.10.18 11.04	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	09.10.18 11.04	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	09.10.18 11.04	U	1
m,p-Xylenes	179601-23-1	< 0.00401	0.00401		mg/kg	09.10.18 11.04	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	09.10.18 11.04	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	09.10.18 11.04	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	09.10.18 11.04	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	95	%	70-130	09.10.18 11.04		
4-Bromofluorobenzene		460-00-4	90	%	70-130	09.10.18 11.04		





### COG Operating LLC, Artesia, NM

Crockett St. 2H

Sample Id: **SW-1**  Matrix:

Soil

Date Received:09.07.18 13.00

Lab Sample Id: 598366-002

Analytical Method: Chloride by EPA 300

SCM

Date Collected: 09.06.18 08.05

Prep Method: E300P

SCM

Tech:

Analyst:

09.07.18 17.15

Basis:

% Moisture:

Wet Weight

Seq Number: 3062573

Parameter Cas Number Result RLUnits **Analysis Date** Flag Dil Chloride 16887-00-6 09.08.18 01.01 41.0 4.96 mg/kg 1

Date Prep:

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech: Analyst: ARM ARM

09.07.18 17.00 Date Prep:

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<14.9	14.9		mg/kg	09.08.18 14.59	U	1
Diesel Range Organics	C10C28DRO	<14.9	14.9		mg/kg	09.08.18 14.59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9		mg/kg	09.08.18 14.59	U	1
Total TPH	PHC635	<14.9	14.9		mg/kg	09.08.18 14.59	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	96	%	70-135	09.08.18 14.59		
o-Terphenyl		84-15-1	98	%	70-135	09.08.18 14.59		





### COG Operating LLC, Artesia, NM

Crockett St. 2H

Sample Id: SW-1

Matrix: Soil

Date Received:09.07.18 13.00

Lab Sample Id: 598366-002

Date Collected: 09.06.18 08.05

Prep Method: SW5030B

% Moisture:

Tech: AL.

Analyst:

ALJ ALJ

Analytical Method: BTEX by EPA 8021B

Date Prep: 09.09.18 10.00

Basis: Wet

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	09.10.18 03.12	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	09.10.18 03.12	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	09.10.18 03.12	U	1
m,p-Xylenes	179601-23-1	< 0.00399	0.00399		mg/kg	09.10.18 03.12	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	09.10.18 03.12	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	09.10.18 03.12	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	09.10.18 03.12	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	94	%	70-130	09.10.18 03.12		
4-Bromofluorobenzene		460-00-4	99	%	70-130	09.10.18 03.12		





### COG Operating LLC, Artesia, NM

Crockett St. 2H

Sample Id: SW-2

Matrix:

Soil

Date Received:09.07.18 13.00

Lab Sample Id: 598366-003

Date Collected: 09.06.18 08.10

Prep Method: E300P

% Moisture:

Tech: Analyst: SCM SCM

Analytical Method: Chloride by EPA 300

Date Prep:

09.07.18 17.15

Basis:

Wet Weight

Seq Number: 3062573

Parameter	Cas Number	Result	RL	Units	<b>Analysis Date</b>	Flag	Dil
Chloride	16887-00-6	<4.98	4.98	mg/kg	09.08.18 01.07	U	1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech: Analyst: ARM ARM

Date Prep: 09.07.18 17.00

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<14.9	14.9		mg/kg	09.08.18 15.17	U	1
Diesel Range Organics	C10C28DRO	<14.9	14.9		mg/kg	09.08.18 15.17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9		mg/kg	09.08.18 15.17	U	1
Total TPH	PHC635	<14.9	14.9		mg/kg	09.08.18 15.17	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	97	%	70-135	09.08.18 15.17		
o-Terphenyl		84-15-1	105	%	70-135	09.08.18 15.17		





### COG Operating LLC, Artesia, NM

Crockett St. 2H

Sample Id: SW-2

Matrix:

Soil

Date Received:09.07.18 13.00

Lab Sample Id: 598366-003

Date Collected: 09.06.18 08.10

Prep Method: SW5030B

% Moisture:

Tech: AL

ALJ

Analytical Method: BTEX by EPA 8021B

Date Prep: 09.09.18 10.00

Basis:

Wet Weight

Analyst: ALJ Seq Number: 3062575

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199		mg/kg	09.10.18 03.33	U	1
Toluene	108-88-3	< 0.00199	0.00199		mg/kg	09.10.18 03.33	U	1
Ethylbenzene	100-41-4	< 0.00199	0.00199		mg/kg	09.10.18 03.33	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398		mg/kg	09.10.18 03.33	U	1
o-Xylene	95-47-6	< 0.00199	0.00199		mg/kg	09.10.18 03.33	U	1
Total Xylenes	1330-20-7	< 0.00199	0.00199		mg/kg	09.10.18 03.33	U	1
Total BTEX		< 0.00199	0.00199		mg/kg	09.10.18 03.33	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	90	%	70-130	09.10.18 03.33		
1,4-Difluorobenzene		540-36-3	94	%	70-130	09.10.18 03.33		





### COG Operating LLC, Artesia, NM

Crockett St. 2H

Sample Id: **SW-3** 

Analytical Method: Chloride by EPA 300

Matrix:

Soil

Date Received:09.07.18 13.00

Lab Sample Id: 598366-004

Date Collected: 09.06.18 08.15

Prep Method: E300P

% Moisture:

Tech: Analyst: SCM SCM

Date Prep:

09.07.18 17.15

09.07.18 17.00

Basis:

Wet Weight

Seq Number: 3062573

Parameter	Cas Number	Result	RL	Units	<b>Analysis Date</b>	Flag	Dil
Chloride	16887-00-6	159	5.00	mg/kg	09.08.18 01.13		1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech:

ARM

% Moisture: Basis:

Wet Weight

ARM Analyst:

Seq Number: 3062569

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0		mg/kg	09.08.18 15.36	U	1
Diesel Range Organics	C10C28DRO	<15.0	15.0		mg/kg	09.08.18 15.36	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	09.08.18 15.36	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	09.08.18 15.36	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	97	%	70-135	09.08.18 15.36		
o-Terphenyl		84-15-1	101	%	70-135	09.08.18 15.36		

Date Prep:





### COG Operating LLC, Artesia, NM

Crockett St. 2H

Sample Id: **SW-3** 

Soil

Matrix:

Date Received:09.07.18 13.00

Lab Sample Id: 598366-004

Date Collected: 09.06.18 08.15

Prep Method: SW5030B

% Moisture:

Tech:

Analyst:

ALJ ALJ

Analytical Method: BTEX by EPA 8021B

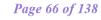
Date Prep: 09.09.18 10.00 Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00202	0.00202		mg/kg	09.10.18 03.53	U	1
Toluene	108-88-3	< 0.00202	0.00202		mg/kg	09.10.18 03.53	U	1
Ethylbenzene	100-41-4	< 0.00202	0.00202		mg/kg	09.10.18 03.53	U	1
m,p-Xylenes	179601-23-1	< 0.00403	0.00403		mg/kg	09.10.18 03.53	U	1
o-Xylene	95-47-6	< 0.00202	0.00202		mg/kg	09.10.18 03.53	U	1
Total Xylenes	1330-20-7	< 0.00202	0.00202		mg/kg	09.10.18 03.53	U	1
Total BTEX		< 0.00202	0.00202		mg/kg	09.10.18 03.53	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	77	%	70-130	09.10.18 03.53		
1,4-Difluorobenzene		540-36-3	99	%	70-130	09.10.18 03.53		



### **Flagging Criteria**





- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F RPD exceeded lab control limits.
- J The target analyte was positively identified below the quantitation limit and above the detection limit.
- U Analyte was not detected.
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K Sample analyzed outside of recommended hold time.
- **JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- \*\* Surrogate recovered outside laboratory control limit.
- BRL Below Reporting Limit.
- RL Reporting Limit

MDL Method Detection Limit SDL Sample Detection Limit LOD Limit of Detection

PQL Practical Quantitation Limit MQL Method Quantitation Limit LOQ Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample BLK Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample BKSD/LCSD Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate MS Matrix Spike MSD: Matrix Spike Duplicate

- + NELAC certification not offered for this compound.
- \* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation



### **QC Summary** 598366

### **COG Operating LLC**

Crockett St. 2H

Analytical Method: Chloride by EPA 300

Seq Number: 3062573 Matrix: Solid

MR

LCS Sample Id: 7661904-1-BKS MB Sample Id: 7661904-1-BLK

E300P Prep Method:

Date Prep: 09.07.18

LCSD Sample Id: 7661904-1-BSD

E300P

mg/kg

Flag

09.07.18

Spike LCS LCS Limits %RPD RPD Limit Units LCSD LCSD Analysis Flag **Parameter** Result Amount Result %Rec Date Result %Rec

09.07.18 23:53 Chloride < 5.00 250 251 100 250 100 90-110 0 20 mg/kg

Analytical Method: Chloride by EPA 300

Prep Method: Seq Number: 3062573 Matrix: Soil Date Prep:

Parent Sample Id: 598207-004 MS Sample Id: 598207-004 S MSD Sample Id: 598207-004 SD

MS MS %RPD RPD Limit Units Parent Spike MSD **MSD** Limits Analysis Flag **Parameter** Result Result Amount %Rec Result %Rec Date X

Chloride 699 248 916 88 915 87 90-110 0 20 mg/kg 09.08.18 01:38

Analytical Method: Chloride by EPA 300

Prep Method: E300P 3062573 Matrix: Soil 09.07.18 Seq Number: Date Prep:

MS Sample Id: 598333-010 S MSD Sample Id: 598333-010 SD 598333-010 Parent Sample Id:

MS %RPD RPD Limit Units Parent Spike MS MSD MSD Limits Analysis Flag **Parameter** Result Date Result %Rec Amount Result %Rec Chloride 71.0 250 324 101 322 100 90-110 20 09.08.18 00:11

Analytical Method: TPH By SW8015 Mod

TX1005P Prep Method: 3062569 Solid Seq Number: Matrix: Date Prep: 09.07.18

7661909-1-BKS 7661909-1-BLK LCS Sample Id: LCSD Sample Id: 7661909-1-BSD MB Sample Id:

%RPD RPD Limit Units MB Spike LCS LCS Limits Analysis LCSD **LCSD Parameter** Result %Rec Date Result Amount %Rec 1000 906 91 904 70-135 0 20 09.08.18 13:25 Gasoline Range Hydrocarbons < 8.00 90 mg/kg 09.08.18 13:25 981 98 70-135 20 Diesel Range Organics 1000 969 97 1 < 8.13 mg/kg

MB MB LCS LCS LCSD Limits Units Analysis LCSD **Surrogate** %Rec Flag %Rec Flag Flag Date %Rec 1-Chlorooctane 102 116 119 70-135 % 09.08.18 13:25 09.08.18 13:25 o-Terphenyl 106 103 109 70-135 %



Seq Number:

Parent Sample Id:

MB Sample Id:

### **QC Summary** 598366

### **COG Operating LLC**

Crockett St. 2H

Analytical Method: TPH By SW8015 Mod

598366-001

3062569 Matrix: Soil

MS Sample Id: 598366-001 S

TX1005P Prep Method:

Date Prep: 09.07.18 MSD Sample Id: 598366-001 SD

MS MS %RPD RPD Limit Units Parent Spike MSD **MSD** Limits Analysis Flag **Parameter** Result Result Amount %Rec %Rec Date Result 09.08.18 14:21 Gasoline Range Hydrocarbons 8.90 1000 868 86 842 83 70-135 3 20 mg/kg 983 97 953 95 20 09.08.18 14:21 Diesel Range Organics 9.36 1000 70-135 3 mg/kg

MS MS MSD **MSD** Limits Units Analysis **Surrogate** Flag %Rec %Rec Flag Date 1-Chlorooctane 123 120 70-135 % 09.08.18 14:21 o-Terphenyl 121 119 70-135 % 09.08.18 14:21

Analytical Method: BTEX by EPA 8021B

Seq Number: 3062575

7661928-1-BLK

Prep Method: Matrix: Solid

LCS Sample Id: 7661928-1-BKS

SW5030B

09.09.18

Flag

Date Prep: LCSD Sample Id: 7661928-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date
Benzene	< 0.00200	0.0998	0.101	101	0.0903	90	70-130	11	35	mg/kg	09.10.18 11:04
Toluene	< 0.00200	0.0998	0.0984	99	0.0908	91	70-130	8	35	mg/kg	09.10.18 11:04
Ethylbenzene	< 0.00200	0.0998	0.102	102	0.0937	94	70-130	8	35	mg/kg	09.10.18 11:04
m,p-Xylenes	< 0.00399	0.200	0.203	102	0.187	93	70-130	8	35	mg/kg	09.10.18 11:04
o-Xylene	< 0.00200	0.0998	0.102	102	0.0924	92	70-130	10	35	mg/kg	09.10.18 11:04

Surrogate	%Rec	Flag			%Rec	Flag	Limits	Omits	Date
1,4-Difluorobenzene	90		94		88		70-130	%	09.10.18 11:04
4-Bromofluorobenzene	94		98		92		70-130	%	09.10.18 11:04

Analytical Method: BTEX by EPA 8021B

Seq Number: 3062575 Parent Sample Id:

598366-001

Matrix: Soil MS Sample Id: 598366-001 S Prep Method: Date Prep:

SW5030B 09.09.18

MSD Sample Id: 598366-001 SD

%RPD RPD Limit Units Parent Spike MS MS MSD Limits Analysis MSD Flag **Parameter** Result Amount Result %Rec %Rec Date Result 09.10.18 11:04 < 0.00199 0.0996 70 0.0913 Benzene 0.069891 70-130 27 35 mg/kg Toluene < 0.00199 0.0996 0.0622 62 0.0886 89 70-130 35 35 mg/kg 09.10.18 11:04 Χ Ethylbenzene < 0.00199 0.0996 0.0556 56 0.0896 90 70-130 47 35 mg/kg 09.10.18 11:04 XF 09.10.18 11:04 < 0.00398 0.199 0.109 55 0.178 70-130 48 35 XF m,p-Xylenes 89 mg/kg 09.10.18 11:04 o-Xylene < 0.00199 0.0996 0.0581 58 0.0875 88 70-130 40 35 mg/kg XF

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	91		90		70-130	%	09.10.18 11:04
4-Bromofluorobenzene	94		94		70-130	%	09.10.18 11:04

MS/MSD Percent Recovery Relative Percent Difference LCS/LCSD Recovery Log Difference

[D] = 100\*(C-A) / BRPD = 200\* | (C-E) / (C+E) |[D] = 100 \* (C) / [B]

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample A = Parent Result

= MS/LCS Result

= MSD/LCSD Result

MS = Matrix Spike B = Spike Added D = MSD/LCSD % Rec

Setting the Standard since 1990

Stafford, TX (281) 240-4200

El Paso, TX (915) 585-3443

Midland, TX (432) 704-5440

Phoenix, AZ (480) 355-0900

Service Center- Amarillo, TX (806)678-4514

Xenco lob#
------------

Relinquished by:	Refinquished by:	Relinquished by Sampley  Relinquished by Sampley		TAT Starts Day received by Lab, if received by 5:00 pm	3 Day EMERGENCY	2 Day EMERGENCY Contra	Next Day EMERGENCY 7 Day TAT	Same Day TAT 5 Day TAT	Turnaround Time (Business days)	10	(C)	G	4 5W-3	3 5W-2	2 SW-1	B++m-1 2.5'	No. Field ID / Point of Collection	0 20000 1110		Project Contact: 5 Not don Hitch	5   Witch cock & conclo, com	Email: Phone No:			Company Name / Branch: クケートナセンタ	Client / Reporting Information			
Date Time:	Date Time:	10:05 9/4/1	E CUSTODY MUST BE DOCUMENT	ed by 5:00 pm		Contract TAT	TAT	TAT							N/A	2.5' 9/4/18 8:00	Sample Date		`	HITCH COCK, BONUMBER		Invoice		Project Location:					
Received By:	Received By:	alcolle Received By: My shoul	SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVE		Level II Report with TRRP checklist	Level 3 (CLP Forms)	Level III Std QC+ Forms	Level II Std QC	Data Deliverable Information				8:15 6 1	8:10 5	8:05 5 1		Time Matrix bottles 🗜			relden Hitch cock			ca CO. NM	cation:	Project Name/Number:	Project Information		www.xenco.com	
Custody Seal #	Relinquished By:	Relinquished By: 2 Cumb M. M. Malia	3E POSSESSION, INCLUDING COURIER		hecklist	UST / RG -411	TRRP Level IV	Level IV (Full Data Pkg /raw data)	mation				\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	/ X	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	\\ \\	HNO3  H2SO4  NaOH  NaHSO4  MEOH  MEOH  TOVE FC			rad rad	ed		301	7, 07	2 + 2 H			Xenc	
Preserved where applicable		Date Time: 9/6/18	DELIVERY	FED-EX / UPS: Tracking #				data)	Notes:	ST S		-	*	*	*	*	BTE	, Λ, , Υ,	8	02	21	B		131			Analytical Information	Xenco Quote # Xer	
On Ice Cooler Temp.	Received By:	Redelived By:	A	s: Tracking #																								Xenco Job# 5983(	
np. Thermo. Corr. Factor	13.00	-CVMWSI,		WOOTH AND													Field Comments			WW = Waste Water	Wi = Wipe	SL - Sludge OW = Ocean/Sea Water	P = Product SW = Surface Water	GW = Ground Water	W≔ Water S≔Soil/Sed/Solid	17 40000	Matrix Codes	elo	



### XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: COG Operating LLC

Date/ Time Received: 09/07/2018 01:00:00 PM

Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient

Work Order #: 598366

Temperature Measuring device used: R8

	Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?		3
#2 *Shipping container in good condition	n?	Yes
#3 *Samples received on ice?		Yes
#4 *Custody Seals intact on shipping co	ntainer/ cooler?	N/A
#5 Custody Seals intact on sample bottle	es?	N/A
#6*Custody Seals Signed and dated?		N/A
#7 *Chain of Custody present?		Yes
#8 Any missing/extra samples?		No
#9 Chain of Custody signed when reling	uished/ received?	Yes
#10 Chain of Custody agrees with samp	le labels/matrix?	Yes
#11 Container label(s) legible and intact	?	Yes
#12 Samples in proper container/ bottle	?	Yes
#13 Samples properly preserved?		Yes
#14 Sample container(s) intact?		Yes
#15 Sufficient sample amount for indicat	red test(s)?	Yes
#16 All samples received within hold tim	e?	Yes
#17 Subcontract of sample(s)?		No
#18 Water VOC samples have zero hea	dspace?	N/A
* Must be completed for after-hours de Analyst:	elivery of samples prior to placing in	the refrigerator
Checklist completed by:	Shawnee Gomez	Date: 09/07/2018
Checklist reviewed by:	Jessica Kramer	Date: 09/10/2018

## Certificate of Analysis Summary 599222 COG Operating LLC, Artesia, NM

Project Name: Crcokett St #2 H

Date Received in Lab: Sat Sep-15-18 09:00 am Report Date: 18-SEP-18

Project Manager: Jessica Kramer

44 13:00 (08:00 13:57 RL 0.00200 0.00200	SOIL SOIL Sep-12-18 13:05 Sep-17-18 08:00 Sep-17-18 15:16 mg/kg RL <0.00200 0.00200	SW-6	SW-7	SW-8	2'/4'
### SOIL    Sampled: Sep-12-18 13:00     Sampled: Sep-17-18 08:00     Analyzed: Sep-17-18 13:57     Units/RL: mg/kg RL	Soll. Sep-12-18 13:05 Sep-17-18 08:00 Sep-17-18 15:16 mg/kg RL	SOIL			
BTEX by EPA 8021B         Sampled:         Sop-12-18 13:00           BTEX by EPA 8021B         Extracted:         Sep-17-18 08:00           Analyzed:         Sep-17-18 13:57         Units/RL:         RL           Conocoon         <0.00200         0.00200           conocoon         <0.00200         0.00200           conocoon         <0.00200         0.00200	Soll. Sep-12-18 13:05 Sep-17-18 08:00 Sep-17-18 15:16 mg/kg RL	SOIL			
BTEX by EPA 8021B         Extracted:         Sep-17-18 08:00           Analyzed:         Sep-17-18 08:00           Units/RL:         mg/kg         RL           Coloron         Coloron         Coloron           Analyzed:         Sep-17-18 13:57           Chits/RL:         mg/kg         RL           Coloron         Coloron         Coloron           Analyzed:         Coloron         Coloron           Analyzed:         Coloron         Coloron           Analyzed:         Coloron         Coloron           Analyzed:         Coloron         Coloron	Sep-12-18 13:05 Sep-17-18 08:00 Sep-17-18 15:16 mg/kg RL		SOIL	SOIL	SOIL
### Extracted: Sep-17-18 08:00    Analyzed: Sep-17-18 13:57   Units/RL: mg/kg RL	Sep-17-18 08:00 Sep-17-18 15:16 mg/kg RL <0.00200 0.00200	Sep-12-18 13:10	Sep-12-18 13:15	Sep-12-18 13:20	Sep-12-18 13:25
Analyzed: Sep-17-18 13:57   Units/RL: mg/kg RL	Sep-17-18 15:16 mg/kg RL <0.00200 0.00200	Sep-17-18 08:00	Sep-17-18 08:00	Sep-17-18 08:00	Sep-17-18 08:00
Units/RL:         mg/kg         RL         1           <0.00200         0.00200         0.00200           <         <0.00200         0.00200           zene         <0.00200         0.00200	9	Sep-17-18 15:36	Sep-17-18 15:56	Sep-17-18 16:17	Sep-17-18 16:37
<ul> <li>&lt;0.00200 0.00200</li> <li>&lt;0.00200 0.00200</li> <li>&lt;0.00200 0.00200</li> </ul>		mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
<0.00200 0.00200					

Jessica Vramer

Project Assistant Jessica Kramer

Page 1 of 22

Final 1.000

Sheldon Hitchcock Contact:

Lea Co. NM Project Location: This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

### **Analytical Report 599222**

### for COG Operating LLC

Project Manager: Sheldon Hitchcock Crcokett St #2 H

18-SEP-18

Collected By: Client





### 1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-18-27), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054) Oklahoma (2017-142)

> Xenco-Dallas (EPA Lab Code: TX01468): Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-13)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-17)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-16)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)

Xenco-Tampa: Florida (E87429) Xenco-Lakeland: Florida (E84098)





18-SEP-18

Project Manager: Sheldon Hitchcock

COG Operating LLC 2407 Pecos Avenue Artesia, NM 88210

Reference: XENCO Report No(s): 599222

Crcokett St #2 H

Project Address: Lea Co. NM

### **Sheldon Hitchcock:**

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 599222. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 599222 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Jessica Kramer

Jessica Vramer

**Project Assistant** 

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### **Sample Cross Reference 599222**



### COG Operating LLC, Artesia, NM

Crcokett St #2 H

Sample Id	Matrix	<b>Date Collected</b>	Sample Depth	Lab Sample Id
SW-4	S	09-12-18 13:00		599222-001
SW-5	S	09-12-18 13:05		599222-002
SW-6	S	09-12-18 13:10		599222-003
SW-7	S	09-12-18 13:15		599222-004
SW-8	S	09-12-18 13:20		599222-005
2'/4'	S	09-12-18 13:25		599222-006

### **CASE NARRATIVE**

Client Name: COG Operating LLC Project Name: Crcokett St #2 H

Project ID: Report Date: 18-SEP-18
Work Order Number(s): 599222 Date Received: 09/15/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3063482 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.





### COG Operating LLC, Artesia, NM

Crcokett St #2 H

Sample Id: **SW-4** 

Analytical Method: Chloride by EPA 300

Matrix: Soil Date Received:09.15.18 09.00

Lab Sample Id: 599222-001

Date Collected: 09.12.18 13.00

Prep Method: E300P

% Moisture:

Tech: Analyst: SCM

SCM

Date Prep:

Basis: 09.17.18 15.00

Wet Weight

Seq Number: 3063508

Parameter Cas Number Result RLUnits **Analysis Date** Flag Dil Chloride 16887-00-6 09.17.18 16.19 345 4.98 mg/kg 1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

% Moisture:

Basis:

Tech: Analyst: ARM ARM

Date Prep:

09.17.18 11.00

Wet Weight

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0		mg/kg	09.17.18 14.53	U	1
Diesel Range Organics	C10C28DRO	<15.0	15.0		mg/kg	09.17.18 14.53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	09.17.18 14.53	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	09.17.18 14.53	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	88	%	70-135	09.17.18 14.53		
o-Terphenyl		84-15-1	91	%	70-135	09.17.18 14.53		





### COG Operating LLC, Artesia, NM

Crcokett St #2 H

Soil

09.17.18 08.00

Sample Id: Matrix: **SW-4** 

Date Collected: 09.12.18 13.00

Date Prep:

Date Received:09.15.18 09.00

Lab Sample Id: 599222-001

Prep Method: SW5030B

Wet Weight

% Moisture:

Basis:

Tech: ALJ ALJ

Seq Number: 3063482

Analyst:

Analytical Method: BTEX by EPA 8021B

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	09.17.18 13.57	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	09.17.18 13.57	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	09.17.18 13.57	U	1
m,p-Xylenes	179601-23-1	< 0.00399	0.00399		mg/kg	09.17.18 13.57	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	09.17.18 13.57	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	09.17.18 13.57	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	09.17.18 13.57	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	117	%	70-130	09.17.18 13.57		
1,4-Difluorobenzene		540-36-3	98	%	70-130	09.17.18 13.57		





### COG Operating LLC, Artesia, NM

Crcokett St #2 H

Sample Id: SW-5

Matrix:

Soil

Date Received:09.15.18 09.00

Lab Sample Id: 599222-002

Date Collected: 09.12.18 13.05

Prep Method: E300P

% Moisture:

Tech:
Analyst:

SCM SCM

Analytical Method: Chloride by EPA 300

Date Prep:

09.17.18 15.00

Basis:

Wet Weight

Seq Number: 3063508

 Parameter
 Cas Number
 Result
 RL
 Units
 Analysis Date
 Flag
 Dil

 Chloride
 16887-00-6
 170
 4.97
 mg/kg
 09.17.18 16.24
 1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech: Analyst: ARM ARM

Date Prep: 09.17.18 11.00

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<14.9	14.9		mg/kg	09.17.18 15.14	U	1
Diesel Range Organics	C10C28DRO	<14.9	14.9		mg/kg	09.17.18 15.14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9		mg/kg	09.17.18 15.14	U	1
Total TPH	PHC635	<14.9	14.9		mg/kg	09.17.18 15.14	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	88	%	70-135	09.17.18 15.14		
o-Terphenyl		84-15-1	90	%	70-135	09.17.18 15.14		





### COG Operating LLC, Artesia, NM

Crcokett St #2 H

Sample Id: SW-5

Analytical Method: BTEX by EPA 8021B

Matrix: Soil

Date Received:09.15.18 09.00

Lab Sample Id: 599222-002

Date Collected: 09.12.18 13.05

Prep Method: SW5030B

% Moisture:

Tech: ALJ

Analyst:

ALJ

Date Prep: 09.17.18 08.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	09.17.18 15.16	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	09.17.18 15.16	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	09.17.18 15.16	U	1
m,p-Xylenes	179601-23-1	< 0.00401	0.00401		mg/kg	09.17.18 15.16	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	09.17.18 15.16	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	09.17.18 15.16	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	09.17.18 15.16	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	96	%	70-130	09.17.18 15.16		
4-Bromofluorobenzene		460-00-4	101	%	70-130	09.17.18 15.16		





### COG Operating LLC, Artesia, NM

Crcokett St #2 H

Soil

Sample Id: **SW-6** 

Date Collected: 09.12.18 13.10

Date Received:09.15.18 09.00

Lab Sample Id: 599222-003

Analytical Method: Chloride by EPA 300

Prep Method: E300P

% Moisture:

SCM Tech:

Analyst: SCM

Date Prep: 09.17.18 15.00 Basis:

Wet Weight

Seq Number: 3063508

Parameter Cas Number Result RLUnits **Analysis Date** Flag Dil Chloride 16887-00-6 09.17.18 16.41 1200 4.98 mg/kg 1

Matrix:

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech: Analyst: ARM ARM

09.17.18 11.00 Date Prep:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0		mg/kg	09.17.18 15.34	U	1
Diesel Range Organics	C10C28DRO	<15.0	15.0		mg/kg	09.17.18 15.34	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	09.17.18 15.34	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	09.17.18 15.34	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	85	%	70-135	09.17.18 15.34		
o-Terphenyl		84-15-1	88	%	70-135	09.17.18 15.34		





### COG Operating LLC, Artesia, NM

Crcokett St #2 H

Sample Id: SW-6

Analytical Method: BTEX by EPA 8021B

Matrix: Soil

Date Received:09.15.18 09.00

Lab Sample Id: 599222-003

Date Collected: 09.12.18 13.10

Prep Method: SW5030B

% Moisture:

Tech: ALJ

Analyst:

ALJ ALJ

Date Prep: 09.17.18 08.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
Benzene	71-43-2	< 0.00198	0.00198		mg/kg	09.17.18 15.36	U	1
Toluene	108-88-3	< 0.00198	0.00198		mg/kg	09.17.18 15.36	U	1
Ethylbenzene	100-41-4	< 0.00198	0.00198		mg/kg	09.17.18 15.36	U	1
m,p-Xylenes	179601-23-1	< 0.00397	0.00397		mg/kg	09.17.18 15.36	U	1
o-Xylene	95-47-6	< 0.00198	0.00198		mg/kg	09.17.18 15.36	U	1
Total Xylenes	1330-20-7	< 0.00198	0.00198		mg/kg	09.17.18 15.36	U	1
Total BTEX		< 0.00198	0.00198		mg/kg	09.17.18 15.36	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	104	%	70-130	09.17.18 15.36		
1,4-Difluorobenzene		540-36-3	97	%	70-130	09.17.18 15.36		





### COG Operating LLC, Artesia, NM

Crcokett St #2 H

Sample Id: **SW-7** 

Analytical Method: Chloride by EPA 300

Matrix:

Soil

Date Received:09.15.18 09.00

Lab Sample Id: 599222-004

Date Collected: 09.12.18 13.15

Prep Method: E300P

Tech:

SCM

% Moisture:

SCM Analyst:

Date Prep:

09.17.18 15.00

Basis: Wet Weight

Seq Number: 3063508

Parameter Cas Number Result RLUnits **Analysis Date** Flag Dil Chloride 16887-00-6 09.17.18 16.47 105 5.03 mg/kg 1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

ARM Tech:

% Moisture:

ARM Analyst:

09.17.18 11.00 Date Prep:

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0		mg/kg	09.17.18 15.54	U	1
Diesel Range Organics	C10C28DRO	<15.0	15.0		mg/kg	09.17.18 15.54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	09.17.18 15.54	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	09.17.18 15.54	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	88	%	70-135	09.17.18 15.54		
o-Terphenyl		84-15-1	91	%	70-135	09.17.18 15.54		





### COG Operating LLC, Artesia, NM

Crcokett St #2 H

Sample Id: SW-7

Matrix: Soil

Date Received:09.15.18 09.00

Lab Sample Id: 599222-004

Date Collected: 09.12.18 13.15

Prep Method: SW5030B

% Moisture:

Tech: AI

Analyst:

ALJ ALJ

Analytical Method: BTEX by EPA 8021B

Date Prep: 09.17.18 08.00

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
Benzene	71-43-2	< 0.00201	0.00201		mg/kg	09.17.18 15.56	U	1
Toluene	108-88-3	< 0.00201	0.00201		mg/kg	09.17.18 15.56	U	1
Ethylbenzene	100-41-4	< 0.00201	0.00201		mg/kg	09.17.18 15.56	U	1
m,p-Xylenes	179601-23-1	< 0.00402	0.00402		mg/kg	09.17.18 15.56	U	1
o-Xylene	95-47-6	< 0.00201	0.00201		mg/kg	09.17.18 15.56	U	1
Total Xylenes	1330-20-7	< 0.00201	0.00201		mg/kg	09.17.18 15.56	U	1
Total BTEX		< 0.00201	0.00201		mg/kg	09.17.18 15.56	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	93	%	70-130	09.17.18 15.56		
4-Bromofluorobenzene		460-00-4	111	%	70-130	09.17.18 15.56		





### COG Operating LLC, Artesia, NM

Crcokett St #2 H

Soil

Sample Id: **SW-8** 

Analytical Method: Chloride by EPA 300

Matrix:

Result

< 4.95

Date Received:09.15.18 09.00

Lab Sample Id: 599222-005

Date Collected: 09.12.18 13.20

Prep Method: E300P

SCM

Tech: SCM

Analyst:

Parameter

Chloride

% Moisture:

Wet Weight

Seq Number: 3063508

Date Prep: 09.17.18 15.00

RL

4.95

Basis:

Units

mg/kg

Flag

U

Dil

1

Analytical Method: TPH By SW8015 Mod

Cas Number

16887-00-6

Prep Method: TX1005P

**Analysis Date** 

09.17.18 16.53

% Moisture:

Tech: Analyst: ARM ARM

09.17.18 11.00 Date Prep:

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0		mg/kg	09.17.18 16.55	U	1
Diesel Range Organics	C10C28DRO	<15.0	15.0		mg/kg	09.17.18 16.55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	09.17.18 16.55	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	09.17.18 16.55	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	83	%	70-135	09.17.18 16.55		
o-Terphenyl		84-15-1	84	%	70-135	09.17.18 16.55		





### COG Operating LLC, Artesia, NM

Crcokett St #2 H

Sample Id: SW-8

Matrix: Soil

Date Received:09.15.18 09.00

Lab Sample Id: 599222-005

Date Collected: 09.12.18 13.20

Prep Method: SW5030B

Analytical Method: BTEX by EPA 8021B

% Moisture:

rep ivietnou. B vv s

Tech: ALJ

Analyst:

ALJ

Date Prep: 09.17.18 08.00

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	09.17.18 16.17	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	09.17.18 16.17	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	09.17.18 16.17	U	1
m,p-Xylenes	179601-23-1	< 0.00401	0.00401		mg/kg	09.17.18 16.17	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	09.17.18 16.17	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	09.17.18 16.17	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	09.17.18 16.17	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	112	%	70-130	09.17.18 16.17		
1,4-Difluorobenzene		540-36-3	99	%	70-130	09.17.18 16.17		





### COG Operating LLC, Artesia, NM

Crcokett St #2 H

Sample Id: 2'/4'

Matrix:

Soil

Date Received:09.15.18 09.00

Lab Sample Id: 599222-006

Date Collected: 09.12.18 13.25

Prep Method: E300P

% Moisture:

Tech: Analyst: SCM SCM

Analytical Method: Chloride by EPA 300

Date Prep:

09.17.18 15.00

Basis:

Wet Weight

Seq Number: 3063508

Parameter	Cas Number	Result	RL	Units	<b>Analysis Date</b>	Flag	Dil
Chloride	16887-00-6	1130	4.98	mg/kg	09.17.18 16.58		1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech:

Analyst:

ARMARM

09.17.18 11.00 Date Prep:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0		mg/kg	09.17.18 17.15	U	1
Diesel Range Organics	C10C28DRO	<15.0	15.0		mg/kg	09.17.18 17.15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	09.17.18 17.15	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	09.17.18 17.15	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	85	%	70-135	09.17.18 17.15		
o-Terphenyl		84-15-1	89	%	70-135	09.17.18 17.15		





### COG Operating LLC, Artesia, NM

Crcokett St #2 H

09.17.18 08.00

Sample Id: 2'/4'

Analytical Method: BTEX by EPA 8021B

Matrix: Soil

Date Received:09.15.18 09.00

Lab Sample Id: 599222-006

Date Collected: 09.12.18 13.25

Prep Method: SW5030B

% Moisture:

Tech: ALJ

Date Prep:

Basis:

Wet Weight

Analyst: ALJ Seq Number: 3063482

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199		mg/kg	09.17.18 16.37	U	1
Toluene	108-88-3	< 0.00199	0.00199		mg/kg	09.17.18 16.37	U	1
Ethylbenzene	100-41-4	< 0.00199	0.00199		mg/kg	09.17.18 16.37	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398		mg/kg	09.17.18 16.37	U	1
o-Xylene	95-47-6	< 0.00199	0.00199		mg/kg	09.17.18 16.37	U	1
Total Xylenes	1330-20-7	< 0.00199	0.00199		mg/kg	09.17.18 16.37	U	1
Total BTEX		< 0.00199	0.00199		mg/kg	09.17.18 16.37	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	97	%	70-130	09.17.18 16.37		
4-Bromofluorobenzene		460-00-4	112	%	70-130	09.17.18 16.37		



### **Flagging Criteria**



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- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F RPD exceeded lab control limits.
- J The target analyte was positively identified below the quantitation limit and above the detection limit.
- U Analyte was not detected.
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K Sample analyzed outside of recommended hold time.
- **JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- \*\* Surrogate recovered outside laboratory control limit.
- BRL Below Reporting Limit.
- RL Reporting Limit

MDL Method Detection Limit	SDL	Sample Detection Limit	LOD Limit of Detection

PQL Practical Quantitation Limit MQL Method Quantitation Limit LOQ Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample BLK Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample BKSD/LCSD Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate MS Matrix Spike MSD: Matrix Spike Duplicate

- + NELAC certification not offered for this compound.
- \* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation



### **QC Summary** 599222

### **COG Operating LLC**

Crcokett St #2 H

Analytical Method: Chloride by EPA 300

Seq Number: 3063508 Matrix: Solid

MR

LCS Sample Id: 7662454-1-BKS MB Sample Id: 7662454-1-BLK

E300P Prep Method:

LCSD Sample Id: 7662454-1-BSD

Date Prep: 09.17.18

Spike LCS LCS %RPD RPD Limit Units LCSD LCSD Limits Analysis Flag **Parameter** Result Amount Result %Rec Date Result %Rec

09.17.18 15:39 Chloride < 5.00 250 249 100 250 100 90-110 0 20 mg/kg

Analytical Method: Chloride by EPA 300

Seq Number: 3063508

Matrix: Soil

599220-003 S

E300P Prep Method: Date Prep:

09.17.18

E300P

Flag

599220-003 SD Parent Sample Id: 599220-003 MS Sample Id: MSD Sample Id:

MS MS %RPD RPD Limit Units Parent Spike MSD **MSD** Limits Analysis Flag **Parameter** Result Date Result Amount %Rec Result %Rec

Chloride 115 251 360 98 364 99 90-110 20 mg/kg 09.17.18 17:15

Analytical Method: Chloride by EPA 300

Prep Method: 3063508 Matrix: Soil Seq Number: Date Prep: 09.17.18

MS Sample Id: 599221-001 S MSD Sample Id: 599221-001 SD 599221-001 Parent Sample Id:

%RPD RPD Limit Units Parent Spike MS MS MSD MSD Limits Analysis Flag **Parameter** Result Date Result %Rec Amount Result %Rec Chloride 215 251 460 98 461 98 90-110 0 20 09.17.18 15:56 mg/kg

Analytical Method: TPH By SW8015 Mod

TX1005P Prep Method: 3063509 Solid Seq Number: Matrix: Date Prep: 09.17.18

LCS Sample Id: 7662483-1-BKS LCSD Sample Id: 7662483-1-BSD MB Sample Id: 7662483-1-BLK

%RPD RPD Limit Units MB Spike LCS LCS Limits Analysis LCSD LCSD **Parameter** Result %Rec Date Result Amount %Rec Result 09.17.18 11:33 1000 918 92 926 93 70-135 20 Gasoline Range Hydrocarbons < 8.00 mg/kg 933 93 70-135 20 09.17.18 11:33 Diesel Range Organics 1000 942 94 < 8.13 mg/kg

MB MB LCS LCS LCSD Limits Units Analysis LCSD **Surrogate** %Rec Flag %Rec Flag %Rec Flag Date 1-Chlorooctane 112 123 126 70-135 % 09.17.18 11:33 09.17.18 11:33 o-Terphenyl 117 101 108 70-135 %

MS/MSD Percent Recovery Relative Percent Difference LCS/LCSD Recovery Log Difference

[D] = 100\*(C-A) / BRPD = 200\* | (C-E) / (C+E) |[D] = 100 \* (C) / [B]

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample A = Parent Result

= MS/LCS Result = MSD/LCSD Result MS = Matrix Spike B = Spike Added D = MSD/LCSD % Rec

Flag

Flag

Flag



#### **QC Summary** 599222

### **COG Operating LLC**

Crcokett St #2 H

Analytical Method: TPH By SW8015 Mod

3063509

599220-001

Matrix: Soil

Prep Method:

TX1005P

Seq Number: Parent Sample Id:

MS Sample Id: 599220-001 S

Date Prep: MSD Sample Id: 599220-001 SD

09.17.18

Analysis

Date

MS MS %RPD RPD Limit Units Parent Spike MSD **MSD** Limits **Parameter** Result Result Amount %Rec Result %Rec

09.17.18 12:33 Gasoline Range Hydrocarbons 7.99 999 913 91 920 91 70-135 20 mg/kg 92 93 70-135 20 09.17.18 12:33 Diesel Range Organics 132 999 1050 1060 mg/kg

MS MS MSD **MSD** Limits Units Analysis **Surrogate** %Rec Flag %Rec Flag Date 1-Chlorooctane 124 126 70-135 % 09.17.18 12:33 o-Terphenyl 108 103 70-135 % 09.17.18 12:33

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B

Seq Number: 3063482 Matrix: Solid Date Prep: 09.17.18 LCSD Sample Id: 7662448-1-BSD LCS Sample Id: 7662448-1-BKS MB Sample Id: 7662448-1-BLK

%RPD RPD Limit Units LCS MB LCS Limits Spike LCSD LCSD Analysis **Parameter** Result Amount Result %Rec Date Result %Rec 09.17.18 08:53 Benzene < 0.00200 0.0998 0.0948 95 0.103 103 70-130 8 35 mg/kg Toluene 0.0998 0.0926 93 0.102 102 70-130 10 mg/kg 09.17.18 08:53 < 0.00200 35 0.0998 98 70-130 10 35 09.17.18 08:53 Ethylbenzene < 0.00200 0.09760.108 108 mg/kg m,p-Xylenes < 0.00399 0.200 0.192 96 0.215 108 70-130 11 35 mg/kg 09.17.18 08:53 0.0998 0.0919 92 70-130 12 35 09.17.18 08:53 o-Xylene < 0.00200 0.104 104 mg/kg

MB MB LCS LCS LCSD LCSD Limits Units Analysis **Surrogate** Flag Flag %Rec %Rec Flag Date %Rec 1.4-Difluorobenzene 95 88 97 70-130 % 09.17.18 08:53 09.17.18 08:53 4-Bromofluorobenzene 91 81 98 70-130 %

Analytical Method: BTEX by EPA 8021B

Prep Method: Seq Number: 3063482 Matrix: Soil 09.17.18 Date Prep: MSD Sample Id: 598936-009 SD MS Sample Id: 598936-009 S Parent Sample Id: 598936-009

%RPD RPD Limit Units Parent Spike MS MS Limits Analysis MSD MSD **Parameter** Result Amount Result %Rec Date Result %Rec 09.17.18 09:33 0.0832 82 9 Benzene < 0.00201 0.101 0.0758 75 70-130 35 mg/kg Toluene < 0.00201 0.101 0.0809 80 0.0756 75 70-130 7 35 09.17.18 09:33 mg/kg mg/kg Ethylbenzene < 0.00201 0.101 0.0833 82 0.0764 76 70-130 9 35 09.17.18 09:33 09.17.18 09:33 < 0.00402 0.201 0.163 81 0.149 70-130 9 35 m,p-Xylenes 74 mg/kg 09.17.18 09:33 o-Xylene < 0.00201 0.101 0.0778 77 0.0712 70 70-130 35 mg/kg

MS MS MSD **MSD** Limits Units Analysis **Surrogate** %Rec Flag Flag Date %Rec 1,4-Difluorobenzene 91 94 70-130 % 09.17.18 09:33 4-Bromofluorobenzene 93 93 70-130 % 09.17.18 09:33

MS/MSD Percent Recovery Relative Percent Difference LCS/LCSD Recovery Log Difference

[D] = 100\*(C-A) / BRPD = 200\* | (C-E) / (C+E) |[D] = 100 \* (C) / [B]

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample

A = Parent Result

= MS/LCS Result = MSD/LCSD Result MS = Matrix Spike B = Spike Added D = MSD/LCSD % Rec

SW5030B

# Setting the Standard since 1990 LABORATORIES

# CHAIN OF CUSTODY

Dallas, TX (214) 902-0300 Stafford, TX (281) 240-4200

Shitch Come

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Phone No:

Shelden

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Email:

Company Address:

Company Name / Branch:

OG AMBIR

Client / Reporting Information

Lubbock, TX (806) 794-1296 El Paso, TX (915) 585-3443

Midland, TX (432) 704-5440

Phoenix, AZ (480) 355-0900

* 400.00	1	
171494 171494	Service Center- Hobbs, NM (575) 392-7550	Service Center- Amarillo, TX (806)678-451

Project Name/Number: PO Number: Invoice To: Project Location: 22 Project Information San Antonio, TX (210) 509-3334 É www.xenco.com 7 2 45 # 27 Service Center - Baton Rouge, LA (832) 712-8143 Xenco Quote # x+owl cd Analytical Information 105 Xeno OW = Ocean/Sea Water
Wi = Wipe
O = Oil
WW = Waste Water
A = Air W = Water
S = Soil/Sed/Solid
GW = Ground Water
DW = Drinking Water
P = Product SL - Sludge SW = Surface Water Matrix Codes

itch coa			Ext	: <b>d</b> c	
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Sample Depth	Time Matrix bottles	NaOH/Zn Acetate HNO3 H2SO4 NaOH		Chi	
(0)3332-0071	1'00 5 1			\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	
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рау ТАТ	Level II Std QC	Level IV (Full	Data Pkg /raw data)		
Day TAT	Level III Std QC+ For		<		
Contract TAT	Level 3 (CLP Forms)	UST / RG -41	,		
	Level II Report with	TRRP checklist			The second secon
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Released to Imaging: 11/22/2022 10:56:35 AM



### XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: COG Operating LLC

Date/ Time Received: 09/15/2018 09:00:00 AM

Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient

Comments

Work Order #: 599222

Temperature Measuring device used: R8

	Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?		.2
#2 *Shipping container in good condition	?	Yes
#3 *Samples received on ice?		Yes
#4 *Custody Seals intact on shipping co	ntainer/ cooler?	N/A
#5 Custody Seals intact on sample bottle	es?	N/A
#6*Custody Seals Signed and dated?		N/A
#7 *Chain of Custody present?		Yes
#8 Any missing/extra samples?		No
#9 Chain of Custody signed when relinq	uished/ received?	Yes
#10 Chain of Custody agrees with samp	le labels/matrix?	Yes
#11 Container label(s) legible and intact	?	Yes
#12 Samples in proper container/ bottle'	?	Yes
#13 Samples properly preserved?		Yes
#14 Sample container(s) intact?		Yes
#15 Sufficient sample amount for indicat	ed test(s)?	Yes
#16 All samples received within hold tim	e?	Yes
#17 Subcontract of sample(s)?		N/A
#18 Water VOC samples have zero hea	dspace?	N/A
* Must be completed for after-hours de Analyst:	elivery of samples prior to placing in	the refrigerator
Checklist completed by:  Checklist reviewed by:	British Teel  Jessica Vramer	Date: 09/17/2018
·	Jessica Kramer	Date: <u>09/17/2018</u>

Sample Receipt Checklist

# Certificate of Analysis Summary 599222 COG Operating LLC, Artesia, NM

Project Name: Crcokett St #2 H

Date Received in Lab: Sat Sep-15-18 09:00 am Report Date: 18-SEP-18

Project Manager: Jessica Kramer

Analysis Requested         Field Id.         SW-4         SW-5         SW-6         S		Lab Id:	599222-001	599222-002	599222-003	599222-004	599222-005	599222-006
Number   Depth   Soll   Soll	L	Field Id:	SW-4	SW-5	SW-6	SW-7	SW-8	2'/4'
SOIL	Anaiysis Kequesiea	Depth:						
BTEX by EPA 8021B   Sap-12-18   13:00   Sap-12-18   13:00   Sap-17-18   13:00   Sap-17-18   13:10   Sap-		Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
BTEX by EPA 8021B         Extracted:         Sep-17-18 08:00         Sep-17-18 08		Sampled:	Sep-12-18 13:00	Sep-12-18 13:05	Sep-12-18 13:10	Sep-12-18 13:15	Sep-12-18 13:20	Sep-12-18 13:25
Mathyzett   Sep-17-18   13:57   Sep-17-18   13:16   Sep-17-18   13:56   Sep-17-18   13:56   Sep-17-18   13:56   Sep-17-18   13:57   Sep-17-18   13:56   Sep-17-18	BTEX by EPA 8021B	Extracted:	Sep-17-18 08:00					
Chiefy No. 2   Chie		Analyzed:	Sep-17-18 13:57	Sep-17-18 15:16	Sep-17-18 15:36	Sep-17-18 15:56	Sep-17-18 16:17	Sep-17-18 16:37
Chloride by EPA 300   Chiral by EPA 300   Ch		Units/RL:						mg/kg RL
Chloride by EPA 300   Chicago   Ch	Benzene							<0.00199 0.00199
ces         ~0.00200         0	Toluene							<0.00199 0.00199
Chloride by EPA 300   Extracred   Conogo   Con	Ethylbenzene							<0.00199 0.00199
Chloride by EPA 300   Co.00200   Co.00200	m,p-Xylenes							<0.00398 0.00398
Chloride by EPA 300   Conozon 0.00200   Conozo	o-Xylene							<0.00199 0.00199
Chloride by EPA 300   Extracted: Sep-17-18 15:00   Sep-17-18 15:	Total Xylenes							<0.00199 0.00199
Chloride by EPA 300         Extracted:         Sep-17-18 15:00         Sep-17-18 16:41         Sep-17-18 16:47         Sep-17-18 16:33         Sep-17-18 16:31         Sep-17-18 16:47         Sep-17-18 16:35         Sep-17-18 16:47         Sep-17-18 16:53         A-4.95         A-9.5         A-9.5 <th< th=""><th>Total BTEX</th><th></th><th></th><th></th><th></th><th></th><th></th><th>&lt;0.00199 0.00199</th></th<>	Total BTEX							<0.00199 0.00199
TPH By SW8015 Mod         Extracted:         Sep-17-18 16:19         Sep-17-18 16:24         Sep-17-18 16:14         Sep-17-18 11:00         Sep-17-18 11:	Chloride by EPA 300	Extracted:	Sep-17-18 15:00					
TPH By SW8015 Mod         Extracted:         Rep-17-18 11:00         Rep-17-18 11:		Analyzed:	Sep-17-18 16:19	Sep-17-18 16:24	Sep-17-18 16:41	Sep-17-18 16:47	Sep-17-18 16:53	Sep-17-18 16:58
TPH By SW8015 Mod         Extracted:         Sep-17-18 11:00         Sep-17-18 11:		Units/RL:						mg/kg RL
TPH By SW8015 Mod         Extracted:         Sep-17-18 11:00         Sep-17-18 11:	Chloride							1130 4.98
Analyzed:         Sep-17-18 14:53         Sep-17-18 15:14         Sep-17-18 15:14         Sep-17-18 15:54         Sep-17-18 15:55         Sep-17-18 16:55           Range Hydrocarbons         Units/RL:         mg/kg         RL         mg/kg         RL         mg/kg         RL         mg/kg         RL         mg/kg         RL           Range Hydrocarbons (MRO)         15:0	TPH By SW8015 Mod	Extracted:	Sep-17-18 11:00					
Range Hydrocarbons         Units/RL.         mg/kg         RL         RL         RL         RL         RL		Analyzed:	Sep-17-18 14:53	Sep-17-18 15:14	Sep-17-18 15:34	Sep-17-18 15:54	Sep-17-18 16:55	Sep-17-18 17:15
Range Hydrocarbons         C15.0         15.0         C14.9         14.9         C15.0         15.0         C15.0         C1		Units/RL:						mg/kg RL
ge Organics         <15.0	Gasoline Range Hydrocarbons							<15.0 15.0
Range Hydrocarbons (MRO) <15.0 15.0 15.0 <15.0 15.0 <15.0 15.0 <15.0 15.0 15.0 15.0 15.0 15.0 15.0 15.0	Diesel Range Organics							<15.0 15.0
051 051/ 012 051/ 013 051/ 0140 01/ 0150 150	Motor Oil Range Hydrocarbons (MRO)							<15.0 15.0
(15.0) (15.0) (15.0) (15.0) (15.0) (15.0) (15.0) (15.0)	Total TPH		<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

Jessica Vramer

Project Assistant Jessica Kramer

Page 1 of 22

Final 1.000

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Sheldon Hitchcock Lea Co. NM

Project Location:

Project Id: Contact:

### **Analytical Report 599222**

## for COG Operating LLC

Project Manager: Sheldon Hitchcock Crcokett St #2 H

18-SEP-18

Collected By: Client





### 1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-18-27), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054) Oklahoma (2017-142)

> Xenco-Dallas (EPA Lab Code: TX01468): Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-13)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-17)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-16)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)

Xenco-Tampa: Florida (E87429) Xenco-Lakeland: Florida (E84098)





18-SEP-18

Project Manager: Sheldon Hitchcock

COG Operating LLC 2407 Pecos Avenue Artesia, NM 88210

Reference: XENCO Report No(s): 599222

Crcokett St #2 H

Project Address: Lea Co. NM

### **Sheldon Hitchcock:**

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 599222. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 599222 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Jessica Kramer

Jessica Vramer

**Project Assistant** 

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

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### **Sample Cross Reference 599222**



### COG Operating LLC, Artesia, NM

Crcokett St #2 H

Sample Id	Matrix	<b>Date Collected</b>	Sample Depth	Lab Sample Id
SW-4	S	09-12-18 13:00		599222-001
SW-5	S	09-12-18 13:05		599222-002
SW-6	S	09-12-18 13:10		599222-003
SW-7	S	09-12-18 13:15		599222-004
SW-8	S	09-12-18 13:20		599222-005
2'/4'	S	09-12-18 13:25		599222-006

### **CASE NARRATIVE**

Client Name: COG Operating LLC Project Name: Crcokett St #2 H

Project ID: Report Date: 18-SEP-18
Work Order Number(s): 599222
Date Received: 09/15/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3063482 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.





### COG Operating LLC, Artesia, NM

Crcokett St #2 H

Sample Id: **SW-4** 

Lab Sample Id: 599222-001

Analytical Method: Chloride by EPA 300

Tech:

SCM

SCM Analyst:

Seq Number: 3063508

Matrix: Soil

Date Collected: 09.12.18 13.00

09.17.18 15.00

Date Received:09.15.18 09.00

Prep Method: E300P

% Moisture:

Basis:

Wet Weight

Parameter Cas Number Result RLUnits **Analysis Date** Flag Dil Chloride 16887-00-6 09.17.18 16.19 345 4.98 mg/kg 1

Date Prep:

Analytical Method: TPH By SW8015 Mod

Tech:

ARM

ARM Analyst: Seq Number: 3063509

09.17.18 11.00 Date Prep:

% Moisture:

Basis:

Prep Method: TX1005P

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0		mg/kg	09.17.18 14.53	U	1
Diesel Range Organics	C10C28DRO	<15.0	15.0		mg/kg	09.17.18 14.53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	09.17.18 14.53	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	09.17.18 14.53	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	88	%	70-135	09.17.18 14.53		
o-Terphenyl		84-15-1	91	%	70-135	09.17.18 14.53		





### COG Operating LLC, Artesia, NM

Crcokett St #2 H

Soil

09.17.18 08.00

Sample Id: Matrix: **SW-4** 

Date Collected: 09.12.18 13.00

Date Prep:

Prep Method: SW5030B

Date Received:09.15.18 09.00

Analytical Method: BTEX by EPA 8021B

% Moisture:

Tech: ALJ ALJ

Basis: Wet Weight

Seq Number: 3063482

Analyst:

Lab Sample Id: 599222-001

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	09.17.18 13.57	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	09.17.18 13.57	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	09.17.18 13.57	U	1
m,p-Xylenes	179601-23-1	< 0.00399	0.00399		mg/kg	09.17.18 13.57	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	09.17.18 13.57	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	09.17.18 13.57	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	09.17.18 13.57	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	117	%	70-130	09.17.18 13.57		
1,4-Difluorobenzene		540-36-3	98	%	70-130	09.17.18 13.57		





### COG Operating LLC, Artesia, NM

Crcokett St #2 H

**SW-5** Sample Id:

Matrix:

Soil

Date Received:09.15.18 09.00

Lab Sample Id: 599222-002

Date Collected: 09.12.18 13.05

Prep Method: E300P

Analytical Method: Chloride by EPA 300

SCM

% Moisture:

Tech: SCM Analyst:

Date Prep:

09.17.18 15.00

Basis:

Wet Weight

Seq Number: 3063508

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	170	4.97	mg/kg	09.17.18 16.24		1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech: Analyst: ARMARM

09.17.18 11.00 Date Prep:

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<14.9	14.9		mg/kg	09.17.18 15.14	U	1
Diesel Range Organics	C10C28DRO	<14.9	14.9		mg/kg	09.17.18 15.14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9		mg/kg	09.17.18 15.14	U	1
Total TPH	PHC635	<14.9	14.9		mg/kg	09.17.18 15.14	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	88	%	70-135	09.17.18 15.14		
o-Terphenyl		84-15-1	90	%	70-135	09.17.18 15.14		





### COG Operating LLC, Artesia, NM

Crcokett St #2 H

Sample Id: SW-5

Analytical Method: BTEX by EPA 8021B

Matrix: Soil

Date Prep:

Date Received:09.15.18 09.00

Lab Sample Id: 599222-002

Date Collected: 09.12.18 13.05

Prep Method: SW5030B

% Moisture:

Tech: AL.

Analyst:

ALJ ALJ

% Moist

09.17.18 08.00

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	09.17.18 15.16	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	09.17.18 15.16	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	09.17.18 15.16	U	1
m,p-Xylenes	179601-23-1	< 0.00401	0.00401		mg/kg	09.17.18 15.16	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	09.17.18 15.16	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	09.17.18 15.16	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	09.17.18 15.16	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	96	%	70-130	09.17.18 15.16		
4-Bromofluorobenzene		460-00-4	101	%	70-130	09.17.18 15.16		





### COG Operating LLC, Artesia, NM

Crcokett St #2 H

Sample Id: **SW-6** 

Matrix: Soil Date Received:09.15.18 09.00

Lab Sample Id: 599222-003

Date Collected: 09.12.18 13.10

Prep Method: E300P

Result

1200

% Moisture:

Tech:

Parameter

Chloride

SCM SCM

Analytical Method: Chloride by EPA 300

Date Prep: 09.17.18 15.00

RL

4.98

Basis:

Wet Weight

Analyst:

Seq Number: 3063508

Cas Number

16887-00-6

Units

mg/kg

Dil

1

Flag

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

**Analysis Date** 

09.17.18 16.41

% Moisture:

Tech:

ARM

ARM Analyst:

09.17.18 11.00 Date Prep:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0		mg/kg	09.17.18 15.34	U	1
Diesel Range Organics	C10C28DRO	<15.0	15.0		mg/kg	09.17.18 15.34	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	09.17.18 15.34	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	09.17.18 15.34	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	85	%	70-135	09.17.18 15.34		
o-Terphenyl		84-15-1	88	%	70-135	09.17.18 15.34		





### COG Operating LLC, Artesia, NM

Crcokett St #2 H

Sample Id: SW-6

Matrix: Soil

Date Received:09.15.18 09.00

Lab Sample Id: 599222-003

Date Collected: 09.12.18 13.10

Prep Method: SW5030B

% Moisture:

Tech: ALJ

Analyst:

ALJ

Analytical Method: BTEX by EPA 8021B

Date Prep: 09.17.18 08.00

Basis: W

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00198	0.00198		mg/kg	09.17.18 15.36	U	1
Toluene	108-88-3	< 0.00198	0.00198		mg/kg	09.17.18 15.36	U	1
Ethylbenzene	100-41-4	< 0.00198	0.00198		mg/kg	09.17.18 15.36	U	1
m,p-Xylenes	179601-23-1	< 0.00397	0.00397		mg/kg	09.17.18 15.36	U	1
o-Xylene	95-47-6	< 0.00198	0.00198		mg/kg	09.17.18 15.36	U	1
Total Xylenes	1330-20-7	< 0.00198	0.00198		mg/kg	09.17.18 15.36	U	1
Total BTEX		< 0.00198	0.00198		mg/kg	09.17.18 15.36	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	104	%	70-130	09.17.18 15.36		
1,4-Difluorobenzene		540-36-3	97	%	70-130	09.17.18 15.36		





### COG Operating LLC, Artesia, NM

Crcokett St #2 H

Sample Id: SW-7

Matrix:

Soil

Date Received:09.15.18 09.00

Lab Sample Id: 599222-004

Date Collected: 09.12.18 13.15

Prep Method: E300P

1

Tech:

SCM

Analytical Method: Chloride by EPA 300

Date Prep: 09.17.18 15.00

Basis:

% Moisture:

Wet Weight

Analyst: SCM
Seq Number: 3063508

Seq 1. umosii - 2 voo 2 vo

 Parameter
 Cas Number
 Result
 RL
 Units
 Analysis Date
 Flag
 Dil

 Chloride
 16887-00-6
 105
 5.03
 mg/kg
 09.17.18 16.47
 1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

% Moisture:

ARM

ARM

Date Prep: 09.17.18 11.00

Basis: We

Wet Weight

Seq Number: 3063509

Tech:

Analyst:

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0		mg/kg	09.17.18 15.54	U	1
Diesel Range Organics	C10C28DRO	<15.0	15.0		mg/kg	09.17.18 15.54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	09.17.18 15.54	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	09.17.18 15.54	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	88	%	70-135	09.17.18 15.54		
o-Terphenyl		84-15-1	91	%	70-135	09.17.18 15.54		





### COG Operating LLC, Artesia, NM

Crcokett St #2 H

Sample Id: SW-7

Matrix: Soil

Date Received:09.15.18 09.00

Lab Sample Id: 599222-004

Date Collected: 09.12.18 13.15

Prep Method: SW5030B

% Moisture:

Tech: AL.

Analyst:

ALJ ALJ

Analytical Method: BTEX by EPA 8021B

Date Prep: 09.17.18 08.00

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
Benzene	71-43-2	< 0.00201	0.00201		mg/kg	09.17.18 15.56	U	1
Toluene	108-88-3	< 0.00201	0.00201		mg/kg	09.17.18 15.56	U	1
Ethylbenzene	100-41-4	< 0.00201	0.00201		mg/kg	09.17.18 15.56	U	1
m,p-Xylenes	179601-23-1	< 0.00402	0.00402		mg/kg	09.17.18 15.56	U	1
o-Xylene	95-47-6	< 0.00201	0.00201		mg/kg	09.17.18 15.56	U	1
Total Xylenes	1330-20-7	< 0.00201	0.00201		mg/kg	09.17.18 15.56	U	1
Total BTEX		< 0.00201	0.00201		mg/kg	09.17.18 15.56	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	93	%	70-130	09.17.18 15.56		
4-Bromofluorobenzene		460-00-4	111	%	70-130	09.17.18 15.56		





### COG Operating LLC, Artesia, NM

Crcokett St #2 H

Sample Id: SW-8

Matrix:

Soil

Date Received:09.15.18 09.00

Lab Sample Id: 599222-005

Date Collected: 09.12.18 13.20

Prep Method: E300P

% Moisture:

Tech: Analyst: SCM SCM

Analytical Method: Chloride by EPA 300

Date Prep:

09.17.18 15.00

Basis:

Wet Weight

Seq Number: 3063508

Parameter	Cas Number	Result	RL	Units	<b>Analysis Date</b>	Flag	Dil
Chloride	16887-00-6	<4.95	4.95	mg/kg	09.17.18 16.53	U	1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech: Analyst: ARM ARM

Date Prep: 09.17.18 11.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0		mg/kg	09.17.18 16.55	U	1
Diesel Range Organics	C10C28DRO	<15.0	15.0		mg/kg	09.17.18 16.55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	09.17.18 16.55	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	09.17.18 16.55	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	83	%	70-135	09.17.18 16.55		
o-Terphenyl		84-15-1	84	%	70-135	09.17.18 16.55		





### COG Operating LLC, Artesia, NM

Crcokett St #2 H

Sample Id: Matrix: **SW-8** 

Soil

Date Received:09.15.18 09.00

Lab Sample Id: 599222-005 Date Collected: 09.12.18 13.20

Prep Method: SW5030B

Tech: ALJ % Moisture:

> Date Prep: 09.17.18 08.00

Basis: Wet Weight

Sea	Number:	3063482
DCG	Number.	J00J702

Analyst:

ALJ

Analytical Method: BTEX by EPA 8021B

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	09.17.18 16.17	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	09.17.18 16.17	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	09.17.18 16.17	U	1
m,p-Xylenes	179601-23-1	< 0.00401	0.00401		mg/kg	09.17.18 16.17	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	09.17.18 16.17	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	09.17.18 16.17	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	09.17.18 16.17	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	112	%	70-130	09.17.18 16.17		
1,4-Difluorobenzene		540-36-3	99	%	70-130	09.17.18 16.17		





### COG Operating LLC, Artesia, NM

Crcokett St #2 H

Sample Id: 2'/4'

Matrix:

Soil

Date Received:09.15.18 09.00

Lab Sample Id: 599222-006

Date Collected: 09.12.18 13.25

Prep Method: E300P

% Moisture:

Tech: Analyst: SCM SCM

Analytical Method: Chloride by EPA 300

Date Prep:

09.17.18 15.00

Basis:

Wet Weight

Seq Number: 3063508

Parameter	Cas Number	Result	RL	Units	<b>Analysis Date</b>	Flag	Dil
Chloride	16887-00-6	1130	4.98	mg/kg	09.17.18 16.58		1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech: Analyst: ARMARM

Date Prep:

09.17.18 11.00

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0		mg/kg	09.17.18 17.15	U	1
Diesel Range Organics	C10C28DRO	<15.0	15.0		mg/kg	09.17.18 17.15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	09.17.18 17.15	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	09.17.18 17.15	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	85	%	70-135	09.17.18 17.15		
o-Terphenyl		84-15-1	89	%	70-135	09.17.18 17.15		





#### COG Operating LLC, Artesia, NM

Crcokett St #2 H

Sample Id: 2'/4' Matrix: Soil Date Received:09.15.18 09.00

Lab Sample Id: 599222-006

Date Collected: 09.12.18 13.25

Prep Method: SW5030B

% Moisture:

Tech: ALJ Analyst:

ALJ

Analytical Method: BTEX by EPA 8021B

09.17.18 08.00 Date Prep:

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199		mg/kg	09.17.18 16.37	U	1
Toluene	108-88-3	< 0.00199	0.00199		mg/kg	09.17.18 16.37	U	1
Ethylbenzene	100-41-4	< 0.00199	0.00199		mg/kg	09.17.18 16.37	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398		mg/kg	09.17.18 16.37	U	1
o-Xylene	95-47-6	< 0.00199	0.00199		mg/kg	09.17.18 16.37	U	1
Total Xylenes	1330-20-7	< 0.00199	0.00199		mg/kg	09.17.18 16.37	U	1
Total BTEX		< 0.00199	0.00199		mg/kg	09.17.18 16.37	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	97	%	70-130	09.17.18 16.37		
4-Bromofluorobenzene		460-00-4	112	%	70-130	09.17.18 16.37		



#### Flagging Criteria



Page 110 of 138

- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F RPD exceeded lab control limits.
- J The target analyte was positively identified below the quantitation limit and above the detection limit.
- U Analyte was not detected.
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K Sample analyzed outside of recommended hold time.
- **JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- \*\* Surrogate recovered outside laboratory control limit.
- BRL Below Reporting Limit.
- RL Reporting Limit

MDL Method Detection Limit SDL Sample Detection Limit LOD Limit of Detection

PQL Practical Quantitation Limit MQL Method Quantitation Limit LOQ Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample BLK Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample BKSD/LCSD Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate MS Matrix Spike MSD: Matrix Spike Duplicate

- + NELAC certification not offered for this compound.
- \* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation



#### **QC Summary** 599222

#### **COG Operating LLC**

Crcokett St #2 H

Analytical Method: Chloride by EPA 300

Seq Number: 3063508

7662454-1-BLK

Matrix: Solid

Prep Method: Date Prep: E300P 09.17.18

mg/kg

mg/kg

MB Sample Id:

LCS Sample Id: 7662454-1-BKS

100

LCSD Sample Id: 7662454-1-BSD

**Parameter** 

MR Result Amount

LCS LCS Result %Rec

LCSD Result

Limits LCSD %Rec

%RPD RPD Limit Units

Analysis Date

Flag

Chloride

< 5.00

249

250

100

90-110

0 20 09.17.18 15:39

Analytical Method: Chloride by EPA 300

3063508 Matrix:

Spike

250

Soil

Prep Method: Date Prep:

E300P

Seq Number: Parent Sample Id:

599220-003

MS Sample Id: 599220-003 S

98

09.17.18

MS MSD **MSD** Limits MSD Sample Id:

599220-003 SD

**Parameter** 

Spike Result Amount 115 251

MS Result %Rec

360

Result 364

%Rec 99

90-110

90-110

%RPD RPD Limit Units

20

Analysis Flag Date

09.17.18 17:15

Chloride

Analytical Method: Chloride by EPA 300

Prep Method:

E300P

Seq Number: Parent Sample Id: 3063508

Matrix: Soil MS Sample Id:

251

599221-001 S

Date Prep:

20

09.17.18

MSD Sample Id: 599221-001 SD

**Parameter** 

Chloride

599221-001

Parent Spike Result Amount

215

Parent

MS MS Result %Rec

460

MSD Result

461

MSD Limits %Rec 98

%RPD RPD Limit Units

0

Analysis

Flag Date

09.17.18 15:56

Analytical Method: TPH By SW8015 Mod

3063509

Matrix:

98

Solid

Prep Method:

TX1005P

mg/kg

Seq Number: MB Sample Id: 7662483-1-BLK

LCS Sample Id: 7662483-1-BKS

Date Prep: LCSD Sample Id: 09.17.18

7662483-1-BSD

Flag

%RPD RPD Limit Units MB Spike LCS LCS Limits Analysis LCSD LCSD **Parameter** Result %Rec Date Result Amount Result %Rec 09.17.18 11:33 <8.00 1000 918 92 926 93 70-135 20 Gasoline Range Hydrocarbons mg/kg 933 93 70-135 20 mg/kg 09.17.18 11:33 Diesel Range Organics < 8.13 1000 942 94

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	112		123		126		70-135	%	09.17.18 11:33
o-Terphenyl	117		101		108		70-135	%	09.17.18 11:33

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample A = Parent Result = MS/LCS Result

= MSD/LCSD Result

MS = Matrix Spike B = Spike Added D = MSD/LCSD % Rec

Flag

Flag



#### QC Summary 599222

#### **COG Operating LLC**

Crcokett St #2 H

Analytical Method:TPH By SW8015 ModPrep Method:TX1005PSeq Number:3063509Matrix: SoilDate Prep:09.17.18

Parent Sample Id: 599220-001 MS Sample Id: 599220-001 S MSD Sample Id: 599220-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limi	it Units	Analysis Date	Flag
Gasoline Range Hydrocarbons	7.99	999	913	91	920	91	70-135	1	20	mg/kg	09.17.18 12:33	
Diesel Range Organics	132	999	1050	92	1060	93	70-135	1	20	mg/kg	09.17.18 12:33	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	124		126		70-135	%	09.17.18 12:33
o-Terphenyl	108		103		70-135	%	09.17.18 12:33

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B

 Seq Number:
 3063482
 Matrix:
 Solid
 Date Prep:
 09.17.18

 MB Sample Id:
 7662448-1-BLK
 LCS Sample Id:
 7662448-1-BKS
 LCSD Sample Id:
 7662448-1-BSD

Paramete	er M Resu		LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date
Benzene	< 0.002	0.0998	0.0948	95	0.103	103	70-130	8	35	mg/kg	09.17.18 08:53
Toluene	< 0.002	0.0998	0.0926	93	0.102	102	70-130	10	35	mg/kg	09.17.18 08:53
Ethylbenzen	e <0.002	0.0998	0.0976	98	0.108	108	70-130	10	35	mg/kg	09.17.18 08:53
m,p-Xylenes	< 0.003	99 0.200	0.192	96	0.215	108	70-130	11	35	mg/kg	09.17.18 08:53
o-Xylene	< 0.002	0.0998	0.0919	92	0.104	104	70-130	12	35	mg/kg	09.17.18 08:53

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	95		88		97		70-130	%	09.17.18 08:53
4-Bromofluorobenzene	91		81		98		70-130	%	09.17.18 08:53

Analytical Method:BTEX by EPA 8021BPrep Method:SW5030BSeq Number:3063482Matrix: SoilDate Prep:09.17.18

Parent Sample Id: 598936-009 MS Sample Id: 598936-009 S MSD Sample Id: 598936-009 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Lim	it Units	Analysis Date
Benzene	< 0.00201	0.101	0.0832	82	0.0758	75	70-130	9	35	mg/kg	09.17.18 09:33
Toluene	< 0.00201	0.101	0.0809	80	0.0756	75	70-130	7	35	mg/kg	09.17.18 09:33
Ethylbenzene	< 0.00201	0.101	0.0833	82	0.0764	76	70-130	9	35	mg/kg	09.17.18 09:33
m,p-Xylenes	< 0.00402	0.201	0.163	81	0.149	74	70-130	9	35	mg/kg	09.17.18 09:33
o-Xylene	< 0.00201	0.101	0.0778	77	0.0712	70	70-130	9	35	mg/kg	09.17.18 09:33

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	91		94		70-130	%	09.17.18 09:33
4-Bromofluorobenzene	93		93		70-130	%	09.17.18 09:33

MS/MSD Percent Recovery Relative Percent Difference LCS/LCSD Recovery Log Difference 
$$\begin{split} [D] &= 100*(C\text{-A}) \, / \, B \\ RPD &= 200* \mid (C\text{-E}) \, / \, (C\text{+E}) \mid \\ [D] &= 100*(C) \, / \, [B] \end{split}$$

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample

A = Parent Result

C = MS/LCS Result E = MSD/LCSD Result MS = Matrix Spike B = Spike Added D = MSD/LCSD % Rec

# Setting the Standard since 1990

Revision 2016.1

Dallas, TX (2 Stafford, TX

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client company to Xenco, its affiliates and s trol of Xenco. A minimum charge of \$75 will t	Received By:	Beceived By:	Received By:	SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIV		Level II Report with TRRP checklist	Level 3 (CLP Forms)	Level III Std QC+ Forms	Level II Std QC	Data Deliverable Information				125 3 1	1.20 5 1	15 5 1	1 5 01;		1.00 5 1	Time Matrix bottles HCI NaOH/ZI Acetate	Numbe					r O. PM	Crockett	nformation		www.xenco.com	Midland, TX (432) 704-5440 San Antonio, TX (210) 509-3334
ubcontractors. It assigns standard terms be applied to each project. Xenco's liabilit	Custody Seal #	Relinquished By:	Relinquished By: 2 (PMCZ) WWW.	POSSESSION, INCLUDING COURIER D	-	cklist	UST / RG -411	TRRP Level IV	Level IV (Full Data Pkg /raw data)	tion				<i>\</i>	7		7	_		HNO3 H2SO4 NaOH NaHSO4 MEOH			THY MAN TO THE TANK T				8+ # Z#			Xenco (	Phoenix, AZ (480) 355-0900 Service Center - Baton Roug
and conditions of service. Xenco will be y will be limited to the cost of samples. <i>I</i>	Preserved where applicable	Date Time: Reče	Date Time: Re cit	ERY	FED-EX / UPS: J				ata)	Notes:				///	777		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	\ \ \	111	TP Bt Ch	EX Ion	Ex.		Ja	1				Analytical Information	Xenco Quote # Xenco Job #	je, LA (832) 712-
conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility I be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at \$5 per	On Ice Cooler Temp. Therman. Corr. Factor	Rečeived By:	PSYCHAL Q		Tracking #															Field Comments			WW = Waste Water A = Air	Wi=Wipe O=Oil	SL- Sludge OW ≈ Ocean/Sea Water	P=Product SW = Surface Water	S = Soil/Sed/Solid GW = Ground Water	W = MA	Matrix Codes	*** 0774 PA	Service Center- Amarillo, TX (806)678-4514 Service Center- Hobbs, NM (575) 392-7550
any responsibility nvoiced at \$5 per	O . O	COOL	2 0																				Water		sea Water	g water Water	solid Water		es		(806)678-4514 75) 392-7550



### XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: COG Operating LLC

Date/ Time Received: 09/15/2018 09:00:00 AM

Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient

Comments

Work Order #: 599222

Temperature Measuring device used: R8

#1 *Temperature of cooler(s)?		.2
#2 *Shipping container in good condition	?	Yes
#3 *Samples received on ice?		Yes
#4 *Custody Seals intact on shipping cor	ntainer/ cooler?	N/A
#5 Custody Seals intact on sample bottle	es?	N/A
#6*Custody Seals Signed and dated?		N/A
#7 *Chain of Custody present?		Yes
#8 Any missing/extra samples?		No
#9 Chain of Custody signed when relinqu	uished/ received?	Yes
#10 Chain of Custody agrees with sampl	e labels/matrix?	Yes
#11 Container label(s) legible and intact	?	Yes
#12 Samples in proper container/ bottle?	,	Yes
#13 Samples properly preserved?		Yes
#14 Sample container(s) intact?		Yes
#15 Sufficient sample amount for indicate	ed test(s)?	Yes
#16 All samples received within hold time	e?	Yes
#17 Subcontract of sample(s)?		N/A
#18 Water VOC samples have zero head	dspace?	N/A
* Must be completed for after-hours de  Analyst:	livery of samples prior to placing in PH Device/Lot#:	the refrigerator
Allalyst.	TT Device/Lot#.	
Checklist completed by:	Bawa Tal Brianna Teel	Date: 09/17/2018
Checklist reviewed by:	Jessica Kramer	Date: 09/17/2018

Sample Receipt Checklist

# Certificate of Analysis Summary 598366 COG Operating LLC, Artesia, NM

Project Name: Crockett St. 2H



Date Received in Lab: Fri Sep-07-18 01:00 pm Report Date: 10-SEP-18

Project Manager: Jessica Kramer

	Lab Id:	598366-001	598366-002	598366-003	598366-004	
Analysis Dogwood	Field Id:	Bottom-1 2.5'	SW-1	SW-2	SW-3	
Thursday Neducen	Depth:	2.5- ft				
	Matrix:	SOIL	SOIL	SOIL	TIOS	
	Sampled:	Sep-06-18 08:00	Sep-06-18 08:05	Sep-06-18 08:10	Sep-06-18 08:15	
BTEX by EPA 8021B	Extracted:	Sep-09-18 10:00	Sep-09-18 10:00	Sep-09-18 10:00	Sep-09-18 10:00	
	Analyzed:	Sep-10-18 11:04	Sep-10-18 03:12	Sep-10-18 03:33	Sep-10-18 03:53	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Benzene		<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	
Toluene		<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	
Ethylbenzene		<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	
m,p-Xylenes		<0.00401 0.00401	<0.00399 0.00399	<0.00398 0.00398	<0.00403 0.00403	
o-Xylene		<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	
Total Xylenes		<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	
Total BTEX		<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	
Chloride by EPA 300	Extracted:	Sep-07-18 17:15	Sep-07-18 17:15	Sep-07-18 17:15	Sep-07-18 17:15	
	Analyzed:	Sep-08-18 00:42	Sep-08-18 01:01	Sep-08-18 01:07	Sep-08-18 01:13	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		85.7 4.98	41.0 4.96	<4.98 4.98	159 5.00	
TPH By SW8015 Mod	Extracted:	Sep-07-18 17:00	Sep-07-18 17:00	Sep-07-18 17:00	Sep-07-18 17:00	
	Analyzed:	Sep-08-18 14:03	Sep-08-18 14:59	Sep-08-18 15:17	Sep-08-18 15:36	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Gasoline Range Hydrocarbons		<15.0 15.0	<14.9 14.9	<14.9 14.9	<15.0 15.0	
Diesel Range Organics		<15.0 15.0	<14.9 14.9	<14.9 14.9	<15.0 15.0	
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<14.9 14.9	<14.9 14.9	<15.0 15.0	
Total TPH		<15.0 15.0	<14.9 14.9	<14.9 14.9	<15.0 15.0	

lession Wanner Jessica Kramer

Project Assistant

Final 1.000

Page 1 of 18

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Sheldon Hitchcock Lea Co.NM

Project Location:

Project Id: Contact:

#### **Analytical Report 598366**

## COG Operating LLC

Project Manager: Sheldon Hitchcock
Crockett St. 2H

10-SEP-18

Collected By: Client





#### 1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-18-27), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054) Oklahoma (2017-142)

> Xenco-Dallas (EPA Lab Code: TX01468): Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-13)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-17)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-16)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)

Xenco-Tampa: Florida (E87429) Xenco-Lakeland: Florida (E84098)





10-SEP-18

Project Manager: Sheldon Hitchcock

COG Operating LLC 2407 Pecos Avenue Artesia, NM 88210

Reference: XENCO Report No(s): 598366

Crockett St. 2H

Project Address: Lea Co.NM

#### **Sheldon Hitchcock:**

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 598366. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 598366 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Jessica Kramer

Jessica Vramer

**Project Assistant** 

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

Certified and approved by numerous States and Agencies.

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#### **Sample Cross Reference 598366**



#### COG Operating LLC, Artesia, NM

Crockett St. 2H

Sample Id	Matrix	<b>Date Collected</b>	Sample Depth	Lab Sample Id
Bottom-1 2.5'	S	09-06-18 08:00	2.5 ft	598366-001
SW-1	S	09-06-18 08:05	ft	598366-002
SW-2	S	09-06-18 08:10	ft	598366-003
SW-3	S	09-06-18 08:15	ft	598366-004

#### **CASE NARRATIVE**

Client Name: COG Operating LLC Project Name: Crockett St. 2H

Project ID: Report Date: 10-SEP-18
Work Order Number(s): 598366 Date Received: 09/07/2018

#### Sample receipt non conformances and comments:

None

#### Sample receipt non conformances and comments per sample:

None

#### Analytical non conformances and comments:

Batch: LBA-3062575 BTEX by EPA 8021B

Ethylbenzene, m,p-Xylenes, o-Xylene Relative Percent Difference (RPD) between matrix spike and

duplicate were above quality control limits.

Samples in the analytical batch are: 598366-001, -002, -003, -004

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Lab Sample ID 598366-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 598366-001, -002, -003, -004. The Laboratory Control Sample for Toluene, m,p-Xylenes, Ethylbenzene, o-Xylene is within laboratory

Control Limits, therefore the data was accepted.





#### COG Operating LLC, Artesia, NM

Crockett St. 2H

Sample Id: Bottom-1 2.5' Matrix: Soil Date Received:09.07.18 13.00

Lab Sample Id: 598366-001

Date Collected: 09.06.18 08.00

Sample Depth: 2.5 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P % Moisture:

Tech:

SCM

09.07.18 17.15

Basis:

Wet Weight

SCM Analyst:

Seq Number: 3062573

Date Prep:

Parameter Cas Number Result RLUnits **Analysis Date** Flag Dil Chloride 16887-00-6 09.08.18 00.42 85.7 4.98 mg/kg 1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

ARM

% Moisture:

ARM Analyst:

Tech:

09.07.18 17.00 Date Prep:

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0		mg/kg	09.08.18 14.03	U	1
Diesel Range Organics	C10C28DRO	<15.0	15.0		mg/kg	09.08.18 14.03	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	09.08.18 14.03	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	09.08.18 14.03	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	98	%	70-135	09.08.18 14.03		
o-Terphenyl		84-15-1	102	%	70-135	09.08.18 14.03		





#### COG Operating LLC, Artesia, NM

Crockett St. 2H

Sample Id: Matrix: Soil

Date Received:09.07.18 13.00

Lab Sample Id: 598366-001 Date Collected: 09.06.18 08.00

Sample Depth: 2.5 ft

Analytical Method: BTEX by EPA 8021B

Bottom-1 2.5'

Prep Method: SW5030B

Tech: ALJ % Moisture:

ALJ Analyst:

09.09.18 10.00 Date Prep:

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	09.10.18 11.04	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	09.10.18 11.04	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	09.10.18 11.04	U	1
m,p-Xylenes	179601-23-1	< 0.00401	0.00401		mg/kg	09.10.18 11.04	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	09.10.18 11.04	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	09.10.18 11.04	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	09.10.18 11.04	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	95	%	70-130	09.10.18 11.04		
4-Bromofluorobenzene		460-00-4	90	%	70-130	09.10.18 11.04		





#### COG Operating LLC, Artesia, NM

Crockett St. 2H

Sample Id: **SW-1**  Matrix:

Soil

Date Received:09.07.18 13.00

Lab Sample Id: 598366-002

Analytical Method: Chloride by EPA 300

SCM

Date Collected: 09.06.18 08.05

Prep Method: E300P

SCM

% Moisture:

Tech:

Analyst:

Date Prep:

Basis: 09.07.18 17.15

Wet Weight

Seq Number: 3062573

Parameter Cas Number Result RLUnits **Analysis Date** Flag Dil Chloride 16887-00-6 09.08.18 01.01 41.0 4.96 mg/kg 1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech: Analyst: ARM ARM

09.07.18 17.00 Date Prep:

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<14.9	14.9		mg/kg	09.08.18 14.59	U	1
Diesel Range Organics	C10C28DRO	<14.9	14.9		mg/kg	09.08.18 14.59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9		mg/kg	09.08.18 14.59	U	1
Total TPH	PHC635	<14.9	14.9		mg/kg	09.08.18 14.59	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	96	%	70-135	09.08.18 14.59		
o-Terphenyl		84-15-1	98	%	70-135	09.08.18 14.59		





#### COG Operating LLC, Artesia, NM

Crockett St. 2H

Soil

09.09.18 10.00

Sample Id: Matrix: **SW-1** 

Date Collected: 09.06.18 08.05

Date Received:09.07.18 13.00

Lab Sample Id: 598366-002

Prep Method: SW5030B

% Moisture:

Tech: ALJ

> Basis: Wet Weight

Seq Number: 3062575

ALJ

Analyst:

Analytical Method: BTEX by EPA 8021B

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	09.10.18 03.12	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	09.10.18 03.12	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	09.10.18 03.12	U	1
m,p-Xylenes	179601-23-1	< 0.00399	0.00399		mg/kg	09.10.18 03.12	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	09.10.18 03.12	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	09.10.18 03.12	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	09.10.18 03.12	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	94	%	70-130	09.10.18 03.12		
4-Bromofluorobenzene		460-00-4	99	%	70-130	09.10.18 03.12		

Date Prep:





#### COG Operating LLC, Artesia, NM

Crockett St. 2H

Sample Id: SW-2

Matrix:

Soil

Date Received:09.07.18 13.00

Lab Sample Id: 598366-003

Date Collected: 09.06.18 08.10

Prep Method: E300P

Analytical Method: Chloride by EPA 300

SCM

SCM

Date Prep:

09.07.18 17.15

09.07.18 17.00

Basis:

% Moisture:

Wet Weight

Seq Number: 3062573

Tech:

Analyst:

Parameter	Cas Number	Result	RL	Units	<b>Analysis Date</b>	Flag	Dil
Chloride	16887-00-6	<4.98	4.98	mg/kg	09.08.18 01.07	U	1

Analytical Method: TPH By SW8015 Mod

ARM

Tech: AR

Analyst: ARM
Seq Number: 3062569

Prep Method: TX1005P

% Moisture:

Basis:

Wet Weight

Cas Number Result **Parameter** RLUnits **Analysis Date** Flag Dil PHC610 <14.9 09.08.18 15.17 Gasoline Range Hydrocarbons 14.9 mg/kg U 1 Diesel Range Organics C10C28DRO <14.9 14.9 mg/kg 09.08.18 15.17 U 1 Motor Oil Range Hydrocarbons (MRO) PHCG2835 <14.9 14.9 09.08.18 15.17 U mg/kg Total TPH PHC635 <14.9 14.9 mg/kg 09.08.18 15.17 U 1 % Surrogate Cas Number Units Limits **Analysis Date** Flag Recovery

 Surrogate
 Cas Number
 Recovery Recovery
 Units
 Limits
 Analysis Date

 1-Chlorooctane
 111-85-3
 97
 %
 70-135
 09.08.18 15.17

 o-Terphenyl
 84-15-1
 105
 %
 70-135
 09.08.18 15.17

Date Prep:





#### COG Operating LLC, Artesia, NM

Crockett St. 2H

Sample Id: SW-2

Matrix:

Soil

Date Received:09.07.18 13.00

Lab Sample Id: 598366-003

Date Collected: 09.06.18 08.10

Prep Method: SW5030B

% Moisture:

Tech: A

Analyst:

ALJ ALJ

Analytical Method: BTEX by EPA 8021B

Date Prep: 09.09.18 10.00

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199		mg/kg	09.10.18 03.33	U	1
Toluene	108-88-3	< 0.00199	0.00199		mg/kg	09.10.18 03.33	U	1
Ethylbenzene	100-41-4	< 0.00199	0.00199		mg/kg	09.10.18 03.33	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398		mg/kg	09.10.18 03.33	U	1
o-Xylene	95-47-6	< 0.00199	0.00199		mg/kg	09.10.18 03.33	U	1
Total Xylenes	1330-20-7	< 0.00199	0.00199		mg/kg	09.10.18 03.33	U	1
Total BTEX		< 0.00199	0.00199		mg/kg	09.10.18 03.33	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	90	%	70-130	09.10.18 03.33		
1,4-Difluorobenzene		540-36-3	94	%	70-130	09.10.18 03.33		





#### COG Operating LLC, Artesia, NM

Crockett St. 2H

Sample Id: **SW-3** 

Matrix: Soil Date Received:09.07.18 13.00

Lab Sample Id: 598366-004

Date Collected: 09.06.18 08.15

Prep Method: E300P

Tech:

SCM

% Moisture:

Analyst:

SCM

Analytical Method: Chloride by EPA 300

Date Prep: 09.07.18 17.15 Basis:

Wet Weight

Seq Number: 3062573

Parameter	Cas Number	Result	RL	Units	<b>Analysis Date</b>	Flag	Dil
Chloride	16887-00-6	159	5.00	mg/kg	09.08.18 01.13		1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech: Analyst: ARMARM

09.07.18 17.00 Date Prep:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0		mg/kg	09.08.18 15.36	U	1
Diesel Range Organics	C10C28DRO	<15.0	15.0		mg/kg	09.08.18 15.36	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	09.08.18 15.36	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	09.08.18 15.36	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	97	%	70-135	09.08.18 15.36		
o-Terphenyl		84-15-1	101	%	70-135	09.08.18 15.36		





#### COG Operating LLC, Artesia, NM

Crockett St. 2H

Sample Id: **SW-3**  Matrix: Soil Date Received:09.07.18 13.00

Lab Sample Id: 598366-004

Date Collected: 09.06.18 08.15

Prep Method: SW5030B

Tech:

ALJ

% Moisture:

Analyst:

ALJ

Analytical Method: BTEX by EPA 8021B

Date Prep: 09.09.18 10.00 Basis:

Wet Weight

Parameter	Cas Number	r Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00202	0.00202		mg/kg	09.10.18 03.53	U	1
Toluene	108-88-3	< 0.00202	0.00202		mg/kg	09.10.18 03.53	U	1
Ethylbenzene	100-41-4	< 0.00202	0.00202		mg/kg	09.10.18 03.53	U	1
m,p-Xylenes	179601-23-1	< 0.00403	0.00403		mg/kg	09.10.18 03.53	U	1
o-Xylene	95-47-6	< 0.00202	0.00202		mg/kg	09.10.18 03.53	U	1
Total Xylenes	1330-20-7	< 0.00202	0.00202		mg/kg	09.10.18 03.53	U	1
Total BTEX		< 0.00202	0.00202		mg/kg	09.10.18 03.53	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	77	%	70-130	09.10.18 03.53		
1,4-Difluorobenzene		540-36-3	99	%	70-130	09.10.18 03.53		



#### **Flagging Criteria**



Page 128 of 138

- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F RPD exceeded lab control limits.
- J The target analyte was positively identified below the quantitation limit and above the detection limit.
- U Analyte was not detected.
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K Sample analyzed outside of recommended hold time.
- **JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- \*\* Surrogate recovered outside laboratory control limit.
- BRL Below Reporting Limit.
- RL Reporting Limit

MDL Method Detection Limit SDL Sample Detection Limit LOD Limit of Detection

PQL Practical Quantitation Limit MQL Method Quantitation Limit LOQ Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample BLK Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample BKSD/LCSD Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate MS Matrix Spike MSD: Matrix Spike Duplicate

- + NELAC certification not offered for this compound.
- \* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation



#### **QC Summary** 598366

#### **COG Operating LLC**

Crockett St. 2H

Analytical Method: Chloride by EPA 300

Seq Number: 3062573 Matrix: Solid

MR

LCS Sample Id: 7661904-1-BKS MB Sample Id: 7661904-1-BLK

E300P Prep Method:

Prep Method:

E300P

Flag

Date Prep: 09.07.18

LCSD Sample Id: 7661904-1-BSD

Spike LCS Limits %RPD RPD Limit Units LCSD LCSD Analysis Flag **Parameter** Result Amount Result %Rec Date Result %Rec

09.07.18 23:53 Chloride < 5.00 250 251 100 250 100 90-110 0 20 mg/kg

LCS

Analytical Method: Chloride by EPA 300

E300P Prep Method: Seq Number: 3062573 Matrix: Soil 09.07.18 Date Prep:

Parent Sample Id: 598207-004 MS Sample Id: 598207-004 S MSD Sample Id: 598207-004 SD

MS MS %RPD RPD Limit Units Parent Spike MSD **MSD** Limits Analysis Flag **Parameter** Result Result Amount %Rec Result %Rec Date X

Chloride 699 248 916 88 915 87 90-110 0 20 mg/kg 09.08.18 01:38

Analytical Method: Chloride by EPA 300

3062573 Matrix: Soil 09.07.18 Seq Number: Date Prep:

MS Sample Id: 598333-010 S MSD Sample Id: 598333-010 SD 598333-010 Parent Sample Id:

MS %RPD RPD Limit Units Parent Spike MS MSD MSD Limits Analysis Flag **Parameter** Result Date Result %Rec Amount Result %Rec

Chloride 71.0 250 324 101 322 100 90-110 20 09.08.18 00:11 mg/kg

Analytical Method: TPH By SW8015 Mod

TX1005P Prep Method: 3062569 Solid Seq Number: Matrix: Date Prep: 09.07.18

7661909-1-BKS 7661909-1-BLK LCS Sample Id: LCSD Sample Id: 7661909-1-BSD MB Sample Id:

%RPD RPD Limit Units MB Spike LCS LCS Limits Analysis LCSD LCSD **Parameter** Result %Rec Date Result Amount %Rec 1000 906 91 904 70-135 0 20 09.08.18 13:25 Gasoline Range Hydrocarbons < 8.00 90 mg/kg 09.08.18 13:25 981 98 70-135 20 Diesel Range Organics 1000 969 97 1 < 8.13 mg/kg

MB MB LCS LCS LCSD Limits Units Analysis LCSD **Surrogate** %Rec Flag %Rec Flag Flag Date %Rec 1-Chlorooctane 102 116 119 70-135 % 09.08.18 13:25 09.08.18 13:25 o-Terphenyl 106 103 109 70-135 %

Flag

Seq Number:

Seq Number:

#### **QC Summary** 598366

#### **COG Operating LLC**

Crockett St. 2H

Limits

**MSD** 

Analytical Method: TPH By SW8015 Mod

3062569 Matrix: Soil

MB

TX1005P Prep Method:

Date Prep: 09.07.18

MS Sample Id: 598366-001 S Parent Sample Id: 598366-001 Spike MS MS Parent MSD

MSD Sample Id: 598366-001 SD %RPD RPD Limit Units Analysis Flag

**Parameter** Result Result Amount %Rec %Rec Date Result 09.08.18 14:21 Gasoline Range Hydrocarbons 8.90 1000 868 86 842 83 70-135 3 20 mg/kg 983 97 953 95 20 09.08.18 14:21 Diesel Range Organics 9.36 1000 70-135 3 mg/kg

MS MS MSD **MSD** Limits Units Analysis **Surrogate** %Rec Flag %Rec Flag Date 1-Chlorooctane 123 120 70-135 % 09.08.18 14:21 o-Terphenyl 121 119 70-135 % 09.08.18 14:21

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B 3062575 Matrix: Solid Date Prep: 09.09.18

LCS Sample Id: 7661928-1-BKS LCSD Sample Id: 7661928-1-BSD MB Sample Id: 7661928-1-BLK

%RPD RPD Limit Units LCS MB Spike LCS Limits Analysis LCSD LCSD **Parameter** Date Result Amount Result %Rec %Rec Result 0.0998 101 0.0903 mg/kg 09.10.18 11:04 Benzene < 0.00200 0.101 70-130 11 35 Toluene < 0.00200 0.0998 0.0984 99 0.0908 91 70-130 mg/kg 09.10.18 11:04 8 35 0.0998 09.10.18 11:04 102 0.0937 94 70-130 35 Ethylbenzene < 0.00200 0.102 8 mg/kg m,p-Xylenes < 0.00399 0.200 0.203 102 0.187 93 70-130 8 35 mg/kg 09.10.18 11:04 < 0.00200 0.0998 0.102 102 0.0924 92 70-130 10 35 09.10.18 11:04 o-Xylene mg/kg

MB LCS LCSD LCSD Units Analysis **Surrogate** %Rec Flag %Rec Flag Flag Date %Rec 1.4-Difluorobenzene 90 94 88 70-130 % 09.10.18 11:04 09.10.18 11:04 4-Bromofluorobenzene 94 98 92 70-130 %

LCS

Analytical Method: BTEX by EPA 8021B

Seq Number: 3062575 Matrix: Soil 09.09.18 Date Prep:

MSD Sample Id: 598366-001 SD MS Sample Id: 598366-001 S Parent Sample Id: 598366-001 MS MS Limits %RPD RPD Limit Units Parent Spike Analysis

Parameter	Result	Amount	Result	%Rec	Result	%Rec	Limits	/ <b>UICI</b> D	KI D LIIII	Circs	Date	Flag
Benzene	< 0.00199	0.0996	0.0698	70	0.0913	91	70-130	27	35	mg/kg	09.10.18 11:04	
Toluene	< 0.00199	0.0996	0.0622	62	0.0886	89	70-130	35	35	mg/kg	09.10.18 11:04	X
Ethylbenzene	< 0.00199	0.0996	0.0556	56	0.0896	90	70-130	47	35	mg/kg	09.10.18 11:04	XF
m,p-Xylenes	< 0.00398	0.199	0.109	55	0.178	89	70-130	48	35	mg/kg	09.10.18 11:04	XF
o-Xylene	< 0.00199	0.0996	0.0581	58	0.0875	88	70-130	40	35	mg/kg	09.10.18 11:04	XF

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	91		90		70-130	%	09.10.18 11:04
4-Bromofluorobenzene	94		94		70-130	%	09.10.18 11:04

MS/MSD Percent Recovery Relative Percent Difference LCS/LCSD Recovery Log Difference

[D] = 100\*(C-A) / BRPD = 200\* | (C-E) / (C+E) |[D] = 100 \* (C) / [B]

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample

A = Parent Result

= MS/LCS Result

= MSD/LCSD Result

MS = Matrix Spike B = Spike Added D = MSD/LCSD % Rec

Limits

Prep Method:

SW5030B

# Setting the Standard since 1990

CHAIN OF CUSTODY

Stafford, TX (281) 240-4200

El Paso, TX (915) 585-3443

Midland, TX (432) 704-5440

Phoenix, AZ (480) 355-0900

Service Center- Amarillo, TX (806)678-4514

Revision 2016.1

Xenco Job#	Rouge, LA (832) 712-8143
USX100	Service Center- Hobbs, NM (575) 392-7550

Relinquished by:	Refinquished by:	Relinquished by Sampley		TAT Starts Day received by Lab, if received by 5:00 pm	3 Day EMERGENCY	2 Day EMERGENCY	Next Day EMERGENCY	Same Day TAT	Turnaround Time ( Business days)	10	9	8	7	O		2	3 5 W-2	2 5W-1	1 B+m - 2.5	No. Field ID / Point of Collection		samplers's Name: 5 helden	roject Contact: Shelden	5   Witch cock & conclo, com	mail:		ompany Address:		Client / Reporting Information			Dailas, TX (214) 902-0300
Da	Da	Da Da	SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY	, if received by 5:00		Contract TAT	7 Day TAT	5 Day TAT										>	2			Hitch cook	サイクな このころ	cho, com	Phone No:		TITBIA	10±1/2				Lubbock, TX (806) 794-1296
Date Time:	Date Time:	10:05 9/4/18	JST BE DOCUMENT	pm												-		N/A	9/6/18	Sample Depth Date	Collection	6	PO Number:		Invoice To:	_	Project Location:	Project N				-1296
Received By:	Received By:	9/6/18 Received By: 1	ED BELOW EACH TI		Level II Re	Level 3 (CLP Forms)	Level III St	Level II Std QC	Q.							8:15 8	8:10 5	8:05 5	9:00 5	Time Matrix			re don		0.	Lea Co.	6	Project Name/Number:	Project Information		8	San Antonio
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Custody Seal #	Relinquished By:	Relinquished By:	E POSSESSION, INC		necklist	UST / RG -411	TRRP Level IV	Level IV (F	nation											HNO3 H2SO4 NaOH NaHSO4	Number of preserved bottles		COCK				+ 51. 6	-	5			
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hermo. Corr. Factor	3.8	-CVOW		TO THE PARTY OF TH																Field Comments			WW = Waste Water A = Air	WI = Wipe O = Oil	SL - Sludge OW = Ocean/Sea Water	P = Product SW = Surface Water	S = Soil/Sed/Soild GW = Ground Water	W=Water	Matrix Codes	fatrix Codes		Service Center- Hobbs, NM (575) 392-7550



## XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: COG Operating LLC

Date/ Time Received: 09/07/2018 01:00:00 PM

Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient

Work Order #: 598366

Temperature Measuring device used: R8

	Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?		3
#2 *Shipping container in good condition	?	Yes
#3 *Samples received on ice?		Yes
#4 *Custody Seals intact on shipping cor	ntainer/ cooler?	N/A
#5 Custody Seals intact on sample bottle	es?	N/A
#6*Custody Seals Signed and dated?		N/A
#7 *Chain of Custody present?		Yes
#8 Any missing/extra samples?		No
#9 Chain of Custody signed when relinqu	uished/ received?	Yes
#10 Chain of Custody agrees with sampl	e labels/matrix?	Yes
#11 Container label(s) legible and intact	?	Yes
#12 Samples in proper container/ bottle?		Yes
#13 Samples properly preserved?	Yes	
#14 Sample container(s) intact?		Yes
#15 Sufficient sample amount for indicate	Yes	
#16 All samples received within hold time	e?	Yes
#17 Subcontract of sample(s)?		No
#18 Water VOC samples have zero head	dspace?	N/A
* Must be completed for after-hours de Analyst:	livery of samples prior to placing in	the refrigerator
Checklist completed by:	Murel Smath Shawnee Gomez	Date: 09/07/2018
Checklist reviewed by:	Jessica Kramer	Date: 09/10/2018



September 25, 2018

DAKOTA NEEL

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: CROCKETT 002H

Enclosed are the results of analyses for samples received by the laboratory on 09/24/18 14:45.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. 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> 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)

Wite Sough

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,

Mike Snyder For Celey D. Keene

Lab Director/Quality Manager



#### Analytical Results For:

COG OPERATING
DAKOTA NEEL
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received: 09/24/2018 Reported: 09/25/2018

Project Name: CROCKETT 002H
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 09/24/2018

Sampling Type: Soil

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

Sample ID: 2 1/4' (H802692-01)

BTEX 8021B	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/25/2018	ND	1.88	94.2	2.00	1.64	
Toluene*	<0.050	0.050	09/25/2018	ND	2.04	102	2.00	0.448	
Ethylbenzene*	<0.050	0.050	09/25/2018	ND	2.22	111	2.00	1.25	
Total Xylenes*	<0.150	0.150	09/25/2018	ND	6.42	107	6.00	1.16	
Total BTEX	<0.300	0.300	09/25/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	103	% 69.8-14	2						
Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	09/25/2018	ND	448	112	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	09/24/2018	ND	196	97.9	200	1.20	
DRO >C10-C28*	<10.0	10.0	09/24/2018	ND	187	93.6	200	2.84	
EXT DRO >C28-C36	<10.0	10.0	09/24/2018	ND					
Surrogate: 1-Chlorooctane	88.5	% 41-142	,						
Surrogate: 1-Chlorooctadecane	84.0	% 37.6-14	7						

A ... - L ... - - - I D. .. MC

Cardinal Laboratories \*=Accredited Analyte

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Mile Sough

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



#### Analytical Results For:

COG OPERATING DAKOTA NEEL P. O. BOX 1630 ARTESIA NM, 88210 Fax To: NONE

Received: 09/24/2018 Reported: 09/25/2018

Project Name: CROCKETT 002H Project Number: NONE GIVEN Project Location: NOT GIVEN

Sampling Date: 09/24/2018

Sampling Type: Soil

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

#### Sample ID: SW - 6 (H802692-02)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/25/2018	ND	1.88	94.2	2.00	1.64	
Toluene*	<0.050	0.050	09/25/2018	ND	2.04	102	2.00	0.448	
Ethylbenzene*	<0.050	0.050	09/25/2018	ND	2.22	111	2.00	1.25	
Total Xylenes*	< 0.150	0.150	09/25/2018	ND	6.42	107	6.00	1.16	
Total BTEX	<0.300	0.300	09/25/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	103 9	69.8-14	2						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	09/25/2018	ND	448	112	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	09/24/2018	ND	196	97.9	200	1.20	
DRO >C10-C28*	<10.0	10.0	09/24/2018	ND	187	93.6	200	2.84	
EXT DRO >C28-C36	<10.0	10.0	09/24/2018	ND					
Surrogate: 1-Chlorooctane	88.6	% 41-142							
Surrogate: 1-Chlorooctadecane	83.5	% 37.6-14	7						

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with Sigh

Mike Snyder For 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

Cardinal Laboratories \*=Accredited Analyte

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

Page 5 of 5

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of /

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720 District II

811 S. First St., Artesia, NM 88210 Phone:(575) 748-1283 Fax:(575) 748-9720 District III

1000 Rio Brazos Rd., Aztec, NM 87410 Phone:(505) 334-6178 Fax:(505) 334-6170

1220 S. St Francis Dr., Santa Fe, NM 87505 Phone:(505) 476-3470 Fax:(505) 476-3462

**State of New Mexico Energy, Minerals and Natural Resources Oil Conservation Division** 1220 S. St Francis Dr. **Santa Fe, NM 87505** 

CONDITIONS

Action 160827

#### **CONDITIONS**

Operator:	OGRID:
COG OPERATING LLC	229137
600 W Illinois Ave	Action Number:
Midland, TX 79701	160827
	Action Type:
	[IM-SD] Incident File Support Doc (ENV) (IM-BNF)

#### CONDITIONS

Creat By	d Condition	Condition Date
bha	II None	11/22/2022