

Closure Report

Site Description

Site Name:	SRO State Com #48H
Company:	COG Operating LLC
Legal Description:	U/L B, Section 7, T26S, R28E
County:	Eddy County, NM
GPS Coordinates:	N 32.06424° W-104.11165°

Release Data

Date of Release:	04/21/2017
Type of Release:	Produced water
Source of Release:	Compromised 4" poly line
Volume of Release:	40 bbls
Volume Recovered:	0 bbls

Remediation Specifications

Remediation Parameters:	Excavate the areas of SP1/SB1, SP2/SB2, SP3/SB3, SP4/SB4, SP5/SB5, T-1, and T-2 to a depth of 4 feet, then place a liner in the excavation, backfill with caliche, then top off with topsoil. Excavate the area near T-3 to a depth of 1 foot. The area of T-4 will not require remediation. Backfill the site with clean soil.	
Remediation Activities:	03/16/2018 to 04/13/2018	
Plan Sent to OCD:	11/22/2017	Email from Cliff Brunson to Mike Bratcher
OCD Approval of Plan:	02/22/2018	Email from Mike Bratcher to Cliff Brunson
Plan Sent to SLO:	11/22/2017	Email from Cliff Brunson to Mark Naranjo
SLO Approval of Plan:	03/19/2018	Email from Mark Naranjo to Cliff Brunson

Supporting Documentation

Initial C-141	Signed 04/22/2017
Final C-141	Signed 04/26/2018
Site Diagram	June 2017
Groundwater Plot	<50'
TOPO Maps	June 2017
Lab Summary	05/03/2017, 08/25/2017-08/28/2017, and 10/10/2017
Lab Analysis	05/03/2017, 08/25/2017-08/28/2017, and 10/10/2017
Correspondence	Request and approval of remediation plan via email

Request for Closure

Based on the completion of the remediation plan, BBC International, Inc. requests closure approval from NMOCD.

Cliff Brunson, President, BBC International, Inc.

04/30/2018

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

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

ARTESIA DISTRICT

APR 24 2017

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

Form C-141
Revised August 8, 2011

RECEIVED

Release Notification and Corrective Action

NAB1711542359

OPERATOR☒ Initial Report ☐ Final Report

Name of Company: COG Operating LLC	OGRID# [229137]	Contact: Robert McNeill
Address: 600 West Illinois Avenue, Midland TX 79701	Telephone No. 432-683-7443	
Facility Name: SRO STATE COM #48H	Facility Type: Tank Battery	
Surface Owner: State	Mineral Owner:	API No. 30-015-41779

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
B	07	26S	28E	190'	North	2080'	East	Eddy

Latitude 32.063797

Longitude 104.1248322

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release: 40bbbls	Volume Recovered: 0bbbls
Source of Release: 4" Plotline	Date and Hour of Occurrence: 04/21/2017 6:00 pm	Date and Hour of Discovery: 04/21/2017 6:00 pm
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Mr. Bratcher - MNOCD / Ms. Groves - SLO	
By Whom? Robert Grubbs Jr	Date and Hour: 04/22/2017	Time of this email * 8:54am
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	
If a Watercourse was Impacted, Describe Fully.*		
Describe Cause of Problem and Remedial Action Taken.* A 4" polyline had a split due to unknown reason. Cut out the bad section and refused the 4" poly line.		
Describe Area Affected and Cleanup Action Taken.* This release occurred in the pasture and affected a area of 50' x 100'. Concho will have the spill site sampled to delineate any possible contamination from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation work.		
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.		
Signature:	OIL CONSERVATION DIVISION	
Printed Name: Robert Grubbs Jr.	Approved by Environmental Specialist:	
Title: Senior HSE Coordinator	Approval Date: 4/25/17	Expiration Date: N/A
E-mail Address: rgrubbs@concho.com	Conditions of Approval: see attached	Attached <input checked="" type="checkbox"/>
Date: April 22, 2017 Phone: 432-683-7443		

* Attach Additional Sheets If Necessary

2RP-4182

Operator/Responsible Party,

The OCD has received the form C-141 you provided on **4/24/17** regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number 2RP-4182 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 division-approved corrective action 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 II office in Artesia on or before 5/24/17. 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; C₆ thru C₃₆), 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; C₆ thru C₃₆), 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

Weaver, Crystal, EMNRD

From: Robert Grubbs <RGrubbs@concho.com>
Sent: Saturday, April 22, 2017 8:54 AM
To: Bratcher, Mike, EMNRD; Weaver, Crystal, EMNRD; 'agroves@slo.state.nm.us'
Subject: (immediate Notification & Initial C-141) SRO State Com #048 4/21/17 (30-015-41779)
Attachments: SRO State Com #48 (FL) Initial.pdf

MR. BRATCHER / MS. GROVES,

ATTACHED IS AN IMMEDIATE NOTIFICATION & C-141 FOR YOUR CONSIDERATION. IF YOU HAVE ANY ADDITIONAL QUESTIONS PLEASE FEEL FREE TO CONTACT ME.

THANK YOU,

ROBERT GRUBBS JR.
SR. HSE COORDINATOR
432.683.7443 (MAIN)
432.818.2369 (DIRECT)
432.661.6601 (CELL)
432.221.0892 (FAX)
RGRUBBS@CONCHO.COM
MAILING ADDRESS:
ONE CONCHO CENTER
600 W. ILLINOIS AVENUE
MIDLAND, TEXAS 79701

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

Form C-141
Revised April 3, 2017

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

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company	COG Operating LLC	Contact	Robert McNeill
Address	600 West Illinois Avenue; Midland, TX 79701	Telephone No.	432-683-7443
Facility Name	SRO State Com #48H	Facility Type	Tank Battery
Surface Owner	State	Mineral Owner	API No. 30-015-41779

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
B	07	26S	28E	190	North	2080	East	Eddy County, NM

Latitude N 32.06424° Longitude W -104.11165° NAD83

NATURE OF RELEASE

Type of Release	Produced water	Volume of Release	40 bbls	Volume Recovered	0 bbls
Source of Release	4" plotline	Date and Hour of Occurrence	04/21/2017 @ 6:00 pm	Date and Hour of Discovery	04/21/2017 @ 6:00 pm
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	Mike Bratcher, NMOCD; Amber Groves, NMSLO		
By Whom?	Robert Grubbs, Jr.	Date and Hour	04/22/2017 @ 8:45 am		
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.*

N/A

Describe Cause of Problem and Remedial Action Taken.*

A 4" poly line had a split due to unknown reason. The bad section was cut out.

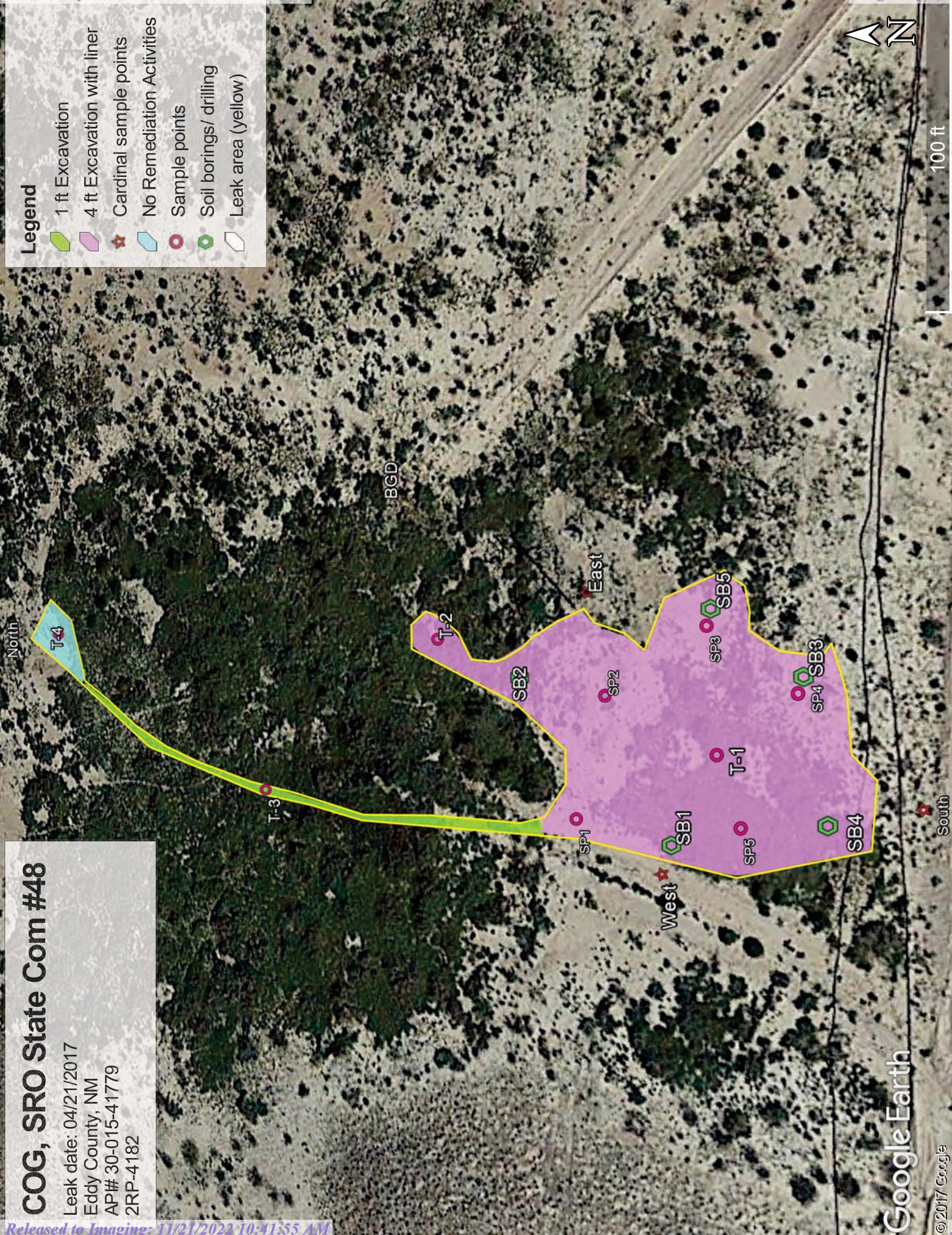
Describe Area Affected and Cleanup Action Taken.*

This release occurred in the pasture and affected an area approximately 50' x 100'. The site was delineated and a remediation plan was developed. Remediation was completed in accordance with the remediation plan approved by Mike Bratcher of NMOCD via email on 02/22/2018 and approved by Mark Naranjo of NMSLO via email on 03/19/2018.

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

Signature: <i>Rebecca Haskell</i>		OIL CONSERVATION DIVISION	
Printed Name: Rebecca Haskell		Approved by Environmental Specialist: <i>Buttany Hall</i>	
Title: Senior HSE Coordinator	Approval Date: 11/21/2022	Expiration Date: N/A	
E-mail Address: RHaskell@concho.com	Conditions of Approval:	Attached <input type="checkbox"/>	
Date: April 26, 2018	Phone: 432-683-7443	none	

* Attach Additional Sheets If Necessary



COG, SRO State Com #48H

Sample points taken by BBC, hand auger

SP1, N 32.06449 W -104.11170

SP2, N 32.06446 W-104.11156

SP3, N 32.06436 W-104.11148

SP4, N 32.06428 W-104.11155

SP5, N 32.06433 W-104.11169

SOUTH, N 32.06417 W-104.11116

Sample points taken by COG, hand auger

T-1, N 32.06435 W-104.11162

T-2, N 32.06464 W-104.11149

T-3, N 32.06486 W-104.11169

T-4, N 32.06516 W-104.11149

NORTH, N 32.06523 W-104.11150

EAST, N 32.06448 W-104.11144

WEST, N 32.06441 W-104.11175

BACKGROUND, N 32.06469 W-104.11130

Soil borings, drilling

SB1, N 32.06439 W-104.11172

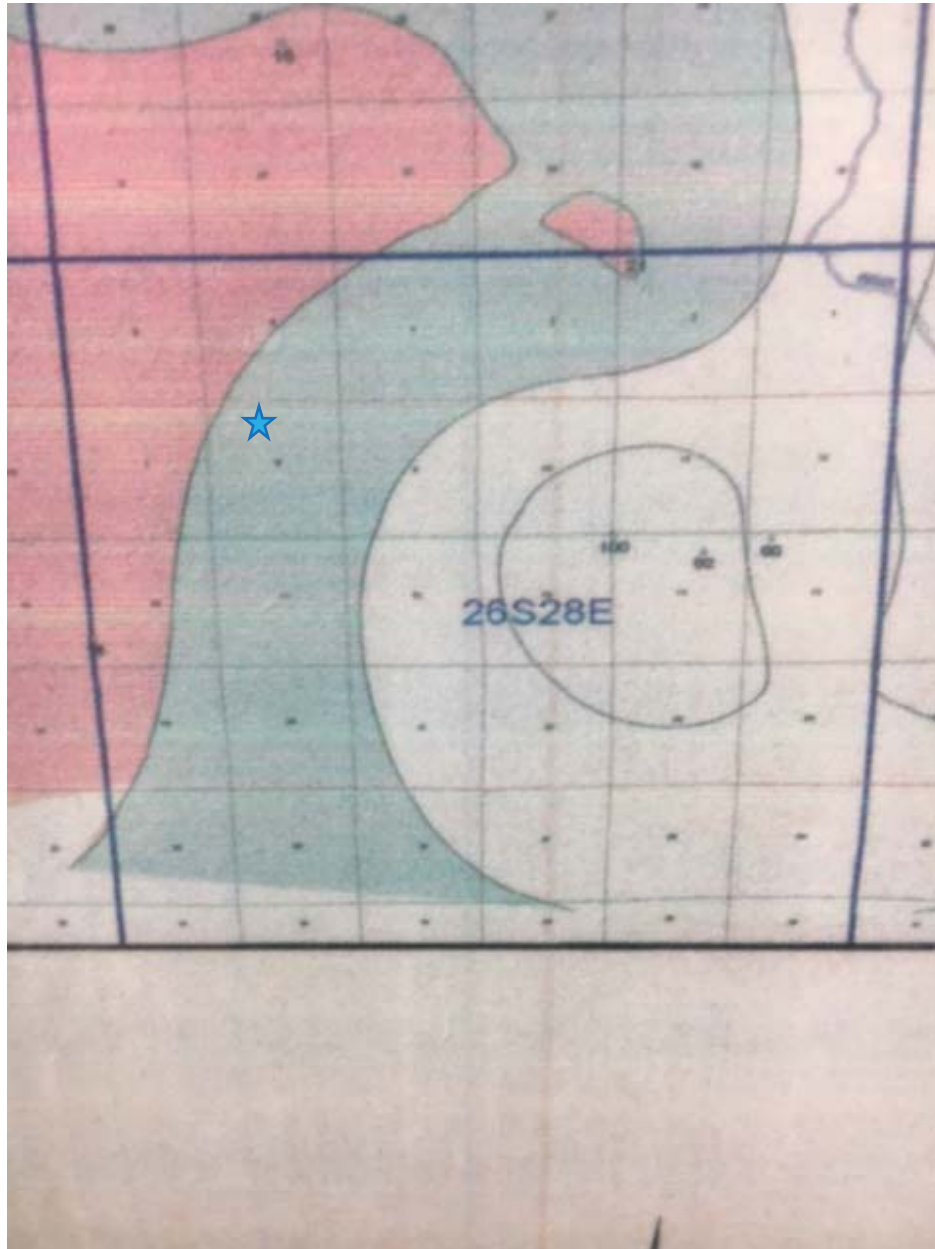
SB2, N 32.06455 W-104.11154

SB3, N 32.06427 W-104.11153

SB4, N 32.06425 W-104.11168

SB5, N 32.06436 W-104.11146

COG, SRO State Com #48H
U/L C, Section 8, T26S, R28E
Groundwater: <50'





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,

C=the file is closed)

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	DepthWell	DepthWater	Water Column
C_02478		CUB	ED	2	1	05	26S	28E		583848	3549325*	<input type="text"/>	1619	100	

Average Depth to Water: --

Minimum Depth: --

Maximum Depth: --

Record Count: 1

UTMNAD83 Radius Search (in meters):

Easting (X): 583853

Northing (Y): 3547706

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.

6/21/17 10:44 AM

WATER COLUMN/ AVERAGE DEPTH TO WATER

Public Land Survey System (PLSS)

☐ Q64: Q16: Q4: Sec: Tws: Rng:

State Plane Coordinate System - NAD27

☐ X: ft Y: ft Zone:

State Plane Coordinate System - NAD83

☐ X: ft Y: ft Zone:

Degrees/Minutes/Seconds

☐ Longitude (X): Degrees: ° Minutes: ' Seconds: "

Latitude (Y): Degrees: ° Minutes: ' Seconds: "

UTM - NAD27

☐ Easting (X): mtrs Northing (Y): mtrs Zone:

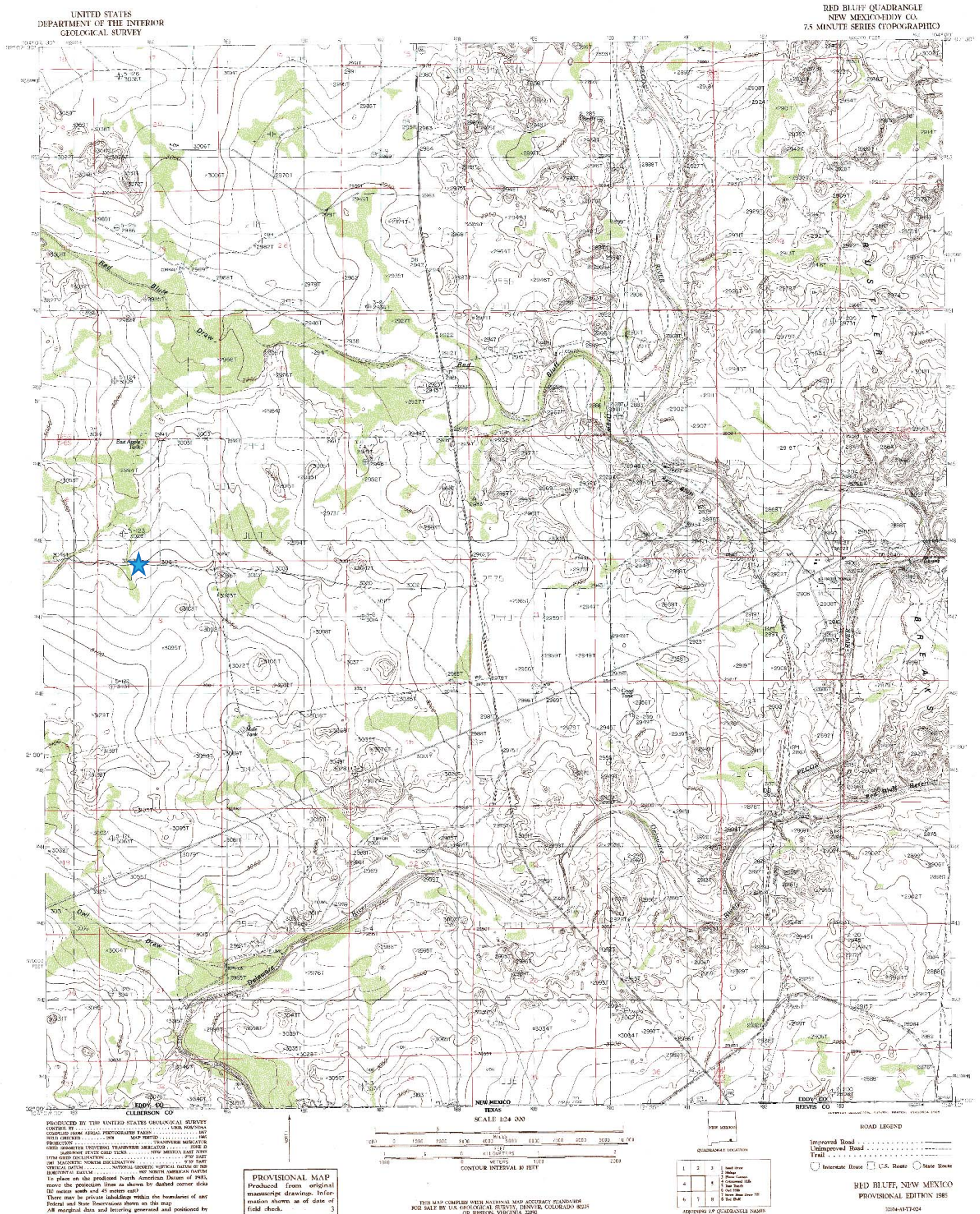
SUBMIT

All Conversion Results are displayed as **NAD 1983 UTM Zone 13**

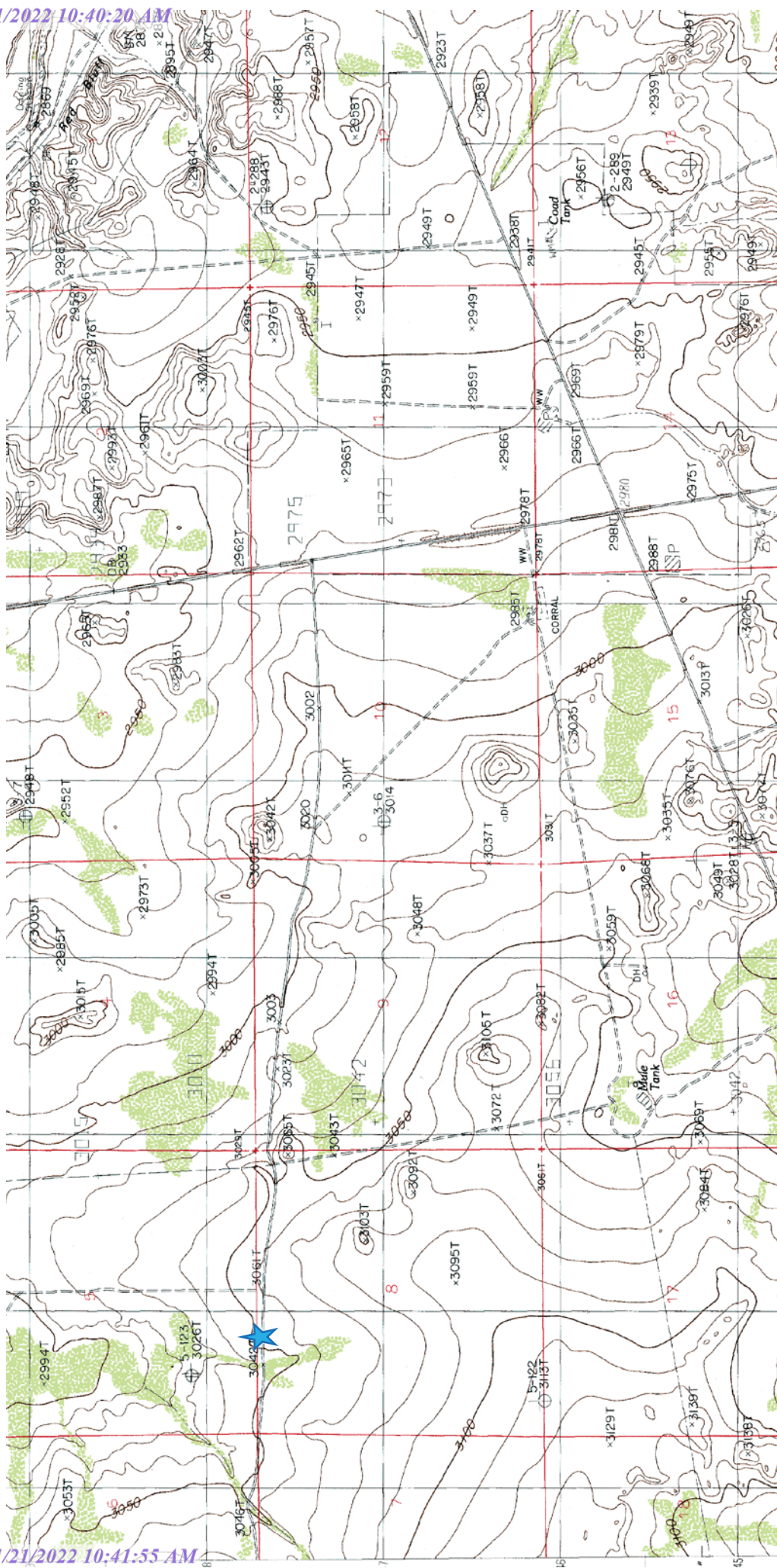
Easting (X): mtrs Northing (Y): mtrs

~~ Please keep screen open to copy UTM values for Reports. ~~

COG, SRO State Com #48H



COG, SRO State Com #48H



Laboratory Analytical Results Summary
SRO State Com #48H

Analyte	Method	Sample Date	T1 @ SURFACE	T1 @ 1'	T1 @ 2'	T1 @ 3'	T1 @ 4'	T1 @ 6'	T1 @ 8'	T1 @ 10'	T1 @ 12'	T1 @ 14'	T1 @ 18'	T1 @ 24'
Benzene	EPA 8021B		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			<0.00337	<0.00337	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Toluene	EPA 8021B		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			<0.00935	0.0158	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	EPA 8021B		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			<0.00337	<0.00337	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
m,p-Xylenes	EPA 8021B		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			<0.0187	0.0379	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
o-Xylene	EPA 8021B		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			<0.00935	0.0169	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total Xylenes	EPA 8021B		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			<0.150	0.0548	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total BTEX	EPA 8021B		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			<0.300	0.0706	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Chloride	EPA300/300.1		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			11000	12200	16800	14600	15400	6140	1290	271	28.3	98	163	163
GRO, C6-C10	SW8015 Mod		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			<15.0	<15.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
DRO, C10-C28	SW8015 Mod		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			<15.0	<15.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total TPH	SW8015 Mod		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			<15.0	<15.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Analyte	Method	Sample Date	T2 @ SURFACE	T2 @ 1'	T2 @ 2'	T2 @ 3'	T2 @ 4'	T2 @ 6'	T2 @ 8'	T2 @ 10'	T2 @ 12'	T2 @ 14'	T2 @ 19'	T2 @ 24'
Benzene	EPA 8021B		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			<0.00388	<0.00380	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Toluene	EPA 8021B		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			<0.00388	0.00567	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	EPA 8021B		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			<0.00388	<0.00380	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
m,p-Xylenes	EPA 8021B		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			<0.00775	<0.00760	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
o-Xylene	EPA 8021B		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			<0.00388	<0.00380	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total Xylenes	EPA 8021B		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			<0.00388	<0.00380	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total BTEX	EPA 8021B		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			<0.00388	0.00567	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Chloride	EPA300/300.1		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			9730	11900	9720	8500	13900	9170	1350	6.48	<25.0	<49.7	<49.7	<49.7
GRO, C6-C10	SW8015 Mod		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			<14.9	<15.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
DRO, C10-C28	SW8015 Mod		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			<14.9	<15.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total TPH	SW8015 Mod		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			<14.9	<15.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Analyte	Method	Sample Date	T3 @ SURFACE	T3 @ 1'	T3 @ 2'	T3 @ 3'	T3 @ 4'	T3 @ 6'	T3 @ 8'	T3 @ 10'	T3 @ 17'	T3 @ 22'
Benzene	EPA 8021B		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			<0.00319	<0.00201	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Toluene	EPA 8021B		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			<0.00319	<0.00201	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	EPA 8021B		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			<0.00319	<0.00201	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
m,p-Xylenes	EPA 8021B		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			<0.00639	<0.00402	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
o-Xylene	EPA 8021B		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			<0.00319	<0.00201	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total Xylenes	EPA 8021B		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			<0.00319	<0.00201	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total BTEX	EPA 8021B		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			<0.00319	<0.00201	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Chloride	EPA300/300.1		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			29000	649	23	1130	<24.9	<24.9	<24.9	<24.9	209	209
GRO, C6-C10	SW8015 Mod		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			<15.0	<15.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
DRO, C10-C28	SW8015 Mod		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			132	<15.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total TPH	SW8015 Mod		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			132	<15.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Analyte	Method	Sample Date	T4 @ SURFACE	T4 @ 1'	T4 @ 2'	T4 @ 3'	T4 @ 4'	T4 @ 6'	T4 @ 11'	T4 @ 16'
Benzene	EPA 8021B		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			<0.00199	<0.00198	n/a	n/a	n/a	n/a	n/a	n/a
Toluene	EPA 8021B		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			<0.00199	<0.00198	n/a	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	EPA 8021B		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			<0.00199	<0.00198	n/a	n/a	n/a	n/a	n/a	n/a
m,p-Xylenes	EPA 8021B		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			<0.00397	<0.00397	n/a	n/a	n/a	n/a	n/a	n/a
o-Xylene	EPA 8021B		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			<0.00199	<0.00198	n/a	n/a	n/a	n/a	n/a	n/a
Total Xylenes	EPA 8021B		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			<0.00199	<0.00198	n/a	n/a	n/a	n/a	n/a	n/a
Total BTEX	EPA 8021B		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			<0.00199	<0.00198	n/a	n/a	n/a	n/a	n/a	n/a
Chloride	EPA300/300.1		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			37.2	<48.9	51.1	<49.5	<24.6	7.83	14.8	271
GRO, C6-C10	SW8015 Mod		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			<15.0	<15.0	n/a	n/a	n/a	n/a	n/a	n/a
DRO, C10-C28	SW8015 Mod		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			<15.0	<15.0	n/a	n/a	n/a	n/a	n/a	n/a
Total TPH	SW8015 Mod		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			<15.0	<15.0	n/a	n/a	n/a	n/a	n/a	n/a

Laboratory Analytical Results Summary
SRO State Com #48H

	Sample	Background @ 5'	Background @ 10'	Background @ 15'	Background @ 20'
Analyte	Method	Date	5/3/17	5/3/17	5/3/17
			mg/Kg	mg/Kg	mg/Kg
Chloride	EPA300/300.1		<49.0	<24.4	<24.6
					47.6

	Sample	North @ Surface	North @ 1'
Analyte	Method	Date	5/3/17
			mg/Kg
Benzene	EPA 8021B		<0.00339
Toluene	EPA 8021B		<0.00339
Ethylbenzene	EPA 8021B		<0.00339
m,p-Xylenes	EPA 8021B		<0.00678
o-Xylene	EPA 8021B		<0.00339
Total Xylenes	EPA 8021B		<0.00339
Total BTEX	EPA 8021B		<0.00339
Chloride	EPA300/300.1		13.7
GRO, C6-C10	SW8015 Mod		<15.0
DRO, C10-C28	SW8015 Mod		<15.0
Total TPH	SW8015 Mod		<15.0

	Sample	East @ Surface	East @ 1'
Analyte	Method	Date	5/3/17
			mg/Kg
Benzene	EPA 8021B		<0.00200
Toluene	EPA 8021B		<0.00200
Ethylbenzene	EPA 8021B		<0.00200
m,p-Xylenes	EPA 8021B		<0.00399
o-Xylene	EPA 8021B		<0.00200
Total Xylenes	EPA 8021B		<0.00200
Total BTEX	EPA 8021B		<0.00200
Chloride	EPA300/300.1		20
GRO, C6-C10	SW8015 Mod		<15.0
DRO, C10-C28	SW8015 Mod		<15.0
Total TPH	SW8015 Mod		<15.0

	Sample	West @ Surface	West @ 1'
Analyte	Method	Date	5/3/17
			mg/Kg
Benzene	EPA 8021B		<0.00199
Toluene	EPA 8021B		<0.00199
Ethylbenzene	EPA 8021B		<0.00199
m,p-Xylenes	EPA 8021B		<0.00398
o-Xylene	EPA 8021B		<0.00199
Total Xylenes	EPA 8021B		<0.00199
Total BTEX	EPA 8021B		<0.00199
Chloride	EPA300/300.1		26.8
GRO, C6-C10	SW8015 Mod		<15.0
DRO, C10-C28	SW8015 Mod		<15.0
Total TPH	SW8015 Mod		<15.0

Laboratory Analytical Results Summary
SRO State Com #48H

Analyte	Method	Sample Date	SP1 @ 1'	SP1 @ 3'	SP1 @ 6'	SP1 @ 9'	SP1 @ 12'	SP1 @ 16'	SP1 @ 18'
			mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Benzene	BTEX 8021B		<0.050	n/a	n/a	n/a	n/a	n/a	n/a
Toluene	BTEX 8021B		<0.050	n/a	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	BTEX 8021B		<0.050	n/a	n/a	n/a	n/a	n/a	n/a
Total Xylenes	BTEX 8021B		<0.150	n/a	n/a	n/a	n/a	n/a	n/a
Total BTEX	BTEX 8021B		<0.300	n/a	n/a	n/a	n/a	n/a	n/a
Chloride	SM4500Cl-B		9800	8800	6100	8900	9800	4400	5920
GRO	TPH 8015M		<10.0	n/a	n/a	n/a	n/a	n/a	n/a
DRO	TPH 8015M		<10.0	n/a	n/a	n/a	n/a	n/a	n/a
EXT DRO	TPH 8015M		<10.0	n/a	n/a	n/a	n/a	n/a	n/a

Analyte	Method	Sample Date	SP2 @ 1'	SP2 @ 3'	SP2 @ 6'	SP2 @ 9'	SP2 @ 12'	SP2 @ 16'	SP2 @ 18'
			mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Chloride	SM4500Cl-B		10700	8700	6800	7600	11400	2200	1280

Analyte	Method	Sample Date	SP3 @ 1'	SP3 @ 3'	SP3 @ 6'	SP3 @ 9'	SP3 @ 12'	SP3 @ 16'	SP3 @ 18'
			mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Benzene	BTEX 8021B		<0.050	n/a	n/a	n/a	n/a	n/a	n/a
Toluene	BTEX 8021B		<0.050	n/a	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	BTEX 8021B		<0.050	n/a	n/a	n/a	n/a	n/a	n/a
Total Xylenes	BTEX 8021B		<0.150	n/a	n/a	n/a	n/a	n/a	n/a
Total BTEX	BTEX 8021B		<0.300	n/a	n/a	n/a	n/a	n/a	n/a
Chloride	SM4500Cl-B		11200	10800	9000	3200	565	400	368
GRO	TPH 8015M		<10.0	n/a	n/a	n/a	n/a	n/a	n/a
DRO	TPH 8015M		<10.0	n/a	n/a	n/a	n/a	n/a	n/a
EXT DRO	TPH 8015M		<10.0	n/a	n/a	n/a	n/a	n/a	n/a

Analyte	Method	Sample Date	SP4 @ 1'	SP4 @ 3'	SP4 @ 6'	SP4 @ 9'	SP4 @ 12'	SP4 @ 16'	SP4 @ 18'
			mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Chloride	SM4500Cl-B		38400	1570	7300	8300	6200	5300	4100

Analyte	Method	Sample Date	SP5 @ 1'	SP5 @ 3'	SP5 @ 6'	SP5 @ 9'	SP5 @ 12'	SP5 @ 16'	SP5 @ 18'
			mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Benzene	BTEX 8021B		<0.050	n/a	n/a	n/a	n/a	n/a	n/a
Toluene	BTEX 8021B		<0.050	n/a	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	BTEX 8021B		<0.050	n/a	n/a	n/a	n/a	n/a	n/a
Total Xylenes	BTEX 8021B		<0.150	n/a	n/a	n/a	n/a	n/a	n/a
Total BTEX	BTEX 8021B		<0.300	n/a	n/a	n/a	n/a	n/a	n/a
Chloride	SM4500Cl-B		34800	1840	7000	8000	6400	5900	5500
GRO	TPH 8015M		<10.0	n/a	n/a	n/a	n/a	n/a	n/a
DRO	TPH 8015M		11.8	n/a	n/a	n/a	n/a	n/a	n/a
EXT DRO	TPH 8015M		<10.0	n/a	n/a	n/a	n/a	n/a	n/a

Analyte	Method	Sample Date	SOUTH @ SURFACE
			mg/Kg
Benzene	BTEX 8021B		<0.050
Toluene	BTEX 8021B		<0.050
Ethylbenzene	BTEX 8021B		<0.050
Total Xylenes	BTEX 8021B		<0.150
Total BTEX	BTEX 8021B		<0.300
Chloride	SM4500Cl-B		32
GRO	TPH 8015M		<10.0
DRO	TPH 8015M		<10.0
EXT DRO	TPH 8015M		<10.0

Laboratory Analytical Results Summary
SRO State Com #48H

	Sample ID	SB1 @ 20'	SB1 @ 25'	SB1 @ 30'	SB1 @ 35'
Analyte	Method	Date	10/10/17	10/10/17	10/10/17
		mg/kg	mg/kg	mg/kg	mg/kg
Chloride	SM4500C1-B	304	48	48	48

	Sample ID	SB2 @ 20'	SB2 @ 25'	SB2 @ 30'	SB2 @ 35'
Analyte	Method	Date	10/10/17	10/10/17	10/10/17
		mg/kg	mg/kg	mg/kg	mg/kg
Chloride	SM4500C1-B	4320	48	48	16

	Sample ID	SB3 @ 20'	SB3 @ 25'	SB3 @ 30'	SB3 @ 35'
Analyte	Method	Date	10/10/17	10/10/17	10/10/17
		mg/kg	mg/kg	mg/kg	mg/kg
Chloride	SM4500C1-B	8260	320	208	240

	Sample ID	SB4 @ 20'	SB4 @ 25'	SB4 @ 30'
Analyte	Method	Date	10/10/17	10/10/17
		mg/kg	mg/kg	mg/kg
Chloride	SM4500C1-B	240	112	160

	Sample ID	SB5 @ 20'	SB5 @ 25'	SB5 @ 30'	SB5 @ 35'
Analyte	Method	Date	10/10/17	10/10/17	10/10/17
		mg/kg	mg/kg	mg/kg	mg/kg
Chloride	SM4500C1-B	352	192	160	208



Certificate of Analysis Summary 552580
COG Operating LLC, Artesia, NM
Project Name: SRO STATE COM #48H

Received by OCD: 11/21/2022 10:40:20 AM

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Date Received in Lab: Fri May-05-17 11:00 am
Report Date: 15-MAY-17
Project Manager: Liz Givens

Project Id: Aaron Lieb
Contact: SRO STATE COM #48H
Project Location:

<i>Analysis Requested</i>	<i>Lab Id:</i>	<i>Field Id:</i>	<i>Depth:</i>	<i>Matrix:</i>	<i>Sampled:</i>	<i>552580-001</i>	<i>552580-002</i>	<i>552580-003</i>	<i>552580-004</i>	<i>552580-005</i>	<i>552580-006</i>
	<i>Extracted:</i>										
	<i>Analyzed:</i>										
	<i>Units/RL:</i>										
BTEX by EPA 8021B	Benzene	May-08-17 16:00	May-09-17 12:07	SOIL	May-03-17 09:30	mg/kg	1 ft	2 ft	3 ft	4 ft	6 ft
		May-08-17 16:00	May-09-17 12:07	SOIL	May-03-17 09:30	RL	SOIL	SOIL	SOIL	SOIL	SOIL
		May-08-17 16:00	May-09-17 12:07	SOIL	May-03-17 09:30	mg/kg	1 ft	2 ft	3 ft	4 ft	6 ft
		May-08-17 16:00	May-09-17 12:07	SOIL	May-03-17 09:30	RL	SOIL	SOIL	SOIL	SOIL	SOIL
		May-08-17 16:00	May-09-17 12:07	SOIL	May-03-17 09:30	mg/kg	1 ft	2 ft	3 ft	4 ft	6 ft
		May-08-17 16:00	May-09-17 12:07	SOIL	May-03-17 09:30	RL	SOIL	SOIL	SOIL	SOIL	SOIL
Inorganic Anions by EPA 300/300.1	Toluene	May-08-17 16:00	May-09-17 12:07	SOIL	May-03-17 09:30	mg/kg	1 ft	2 ft	3 ft	4 ft	6 ft
		May-08-17 16:00	May-09-17 12:07	SOIL	May-03-17 09:30	RL	SOIL	SOIL	SOIL	SOIL	SOIL
	Ethylbenzene	May-08-17 16:00	May-09-17 12:07	SOIL	May-03-17 09:30	mg/kg	1 ft	2 ft	3 ft	4 ft	6 ft
		May-08-17 16:00	May-09-17 12:07	SOIL	May-03-17 09:30	RL	SOIL	SOIL	SOIL	SOIL	SOIL
	m,p-Xylenes	May-08-17 16:00	May-09-17 12:07	SOIL	May-03-17 09:30	mg/kg	1 ft	2 ft	3 ft	4 ft	6 ft
		May-08-17 16:00	May-09-17 12:07	SOIL	May-03-17 09:30	RL	SOIL	SOIL	SOIL	SOIL	SOIL
Chloride	o-Xylene	May-08-17 16:00	May-09-17 12:07	SOIL	May-03-17 09:30	mg/kg	1 ft	2 ft	3 ft	4 ft	6 ft
		May-08-17 16:00	May-09-17 12:07	SOIL	May-03-17 09:30	RL	SOIL	SOIL	SOIL	SOIL	SOIL
	Total Xylenes	May-08-17 16:00	May-09-17 12:07	SOIL	May-03-17 09:30	mg/kg	1 ft	2 ft	3 ft	4 ft	6 ft
		May-08-17 16:00	May-09-17 12:07	SOIL	May-03-17 09:30	RL	SOIL	SOIL	SOIL	SOIL	SOIL
	Total BTEX	May-08-17 16:00	May-09-17 12:07	SOIL	May-03-17 09:30	mg/kg	1 ft	2 ft	3 ft	4 ft	6 ft
		May-08-17 16:00	May-09-17 12:07	SOIL	May-03-17 09:30	RL	SOIL	SOIL	SOIL	SOIL	SOIL
TPH By SW8015 Mod	Chloride	May-15-17 08:00	May-15-17 09:26	SOIL	May-03-17 09:30	mg/kg	1 ft	2 ft	3 ft	4 ft	6 ft
		May-15-17 08:00	May-15-17 09:26	SOIL	May-03-17 09:30	RL	SOIL	SOIL	SOIL	SOIL	SOIL
		May-15-17 08:00	May-15-17 09:26	SOIL	May-03-17 09:30	mg/kg	1 ft	2 ft	3 ft	4 ft	6 ft
		May-15-17 08:00	May-15-17 09:26	SOIL	May-03-17 09:30	RL	SOIL	SOIL	SOIL	SOIL	SOIL
		May-15-17 08:00	May-15-17 09:26	SOIL	May-03-17 09:30	mg/kg	1 ft	2 ft	3 ft	4 ft	6 ft
		May-15-17 08:00	May-15-17 09:26	SOIL	May-03-17 09:30	RL	SOIL	SOIL	SOIL	SOIL	SOIL
C6-C10 Gasoline Range Hydrocarbons	Chloride	May-15-17 08:00	May-15-17 09:26	SOIL	May-03-17 09:30	mg/kg	1 ft	2 ft	3 ft	4 ft	6 ft
		May-15-17 08:00	May-15-17 09:26	SOIL	May-03-17 09:30	RL	SOIL	SOIL	SOIL	SOIL	SOIL
		May-15-17 08:00	May-15-17 09:26	SOIL	May-03-17 09:30	mg/kg	1 ft	2 ft	3 ft	4 ft	6 ft
		May-15-17 08:00	May-15-17 09:26	SOIL	May-03-17 09:30	RL	SOIL	SOIL	SOIL	SOIL	SOIL
		May-15-17 08:00	May-15-17 09:26	SOIL	May-03-17 09:30	mg/kg	1 ft	2 ft	3 ft	4 ft	6 ft
		May-15-17 08:00	May-15-17 09:26	SOIL	May-03-17 09:30	RL	SOIL	SOIL	SOIL	SOIL	SOIL
C10-C28 Diesel Range Hydrocarbons	Chloride	May-15-17 08:00	May-15-17 09:26	SOIL	May-03-17 09:30	mg/kg	1 ft	2 ft	3 ft	4 ft	6 ft
		May-15-17 08:00	May-15-17 09:26	SOIL	May-03-17 09:30	RL	SOIL	SOIL	SOIL	SOIL	SOIL
		May-15-17 08:00	May-15-17 09:26	SOIL	May-03-17 09:30	mg/kg	1 ft	2 ft	3 ft	4 ft	6 ft
		May-15-17 08:00	May-15-17 09:26	SOIL	May-03-17 09:30	RL	SOIL	SOIL	SOIL	SOIL	SOIL
		May-15-17 08:00	May-15-17 09:26	SOIL	May-03-17 09:30	mg/kg	1 ft	2 ft	3 ft	4 ft	6 ft
		May-15-17 08:00	May-15-17 09:26	SOIL	May-03-17 09:30	RL	SOIL	SOIL	SOIL	SOIL	SOIL
Total TPH	Chloride	May-15-17 08:00	May-15-17 09:26	SOIL	May-03-17 09:30	mg/kg	1 ft	2 ft	3 ft	4 ft	6 ft
		May-15-17 08:00	May-15-17 09:26	SOIL	May-03-17 09:30	RL	SOIL	SOIL	SOIL	SOIL	SOIL
		May-15-17 08:00	May-15-17 09:26	SOIL	May-03-17 09:30	mg/kg	1 ft	2 ft	3 ft	4 ft	6 ft
		May-15-17 08:00	May-15-17 09:26	SOIL	May-03-17 09:30	RL	SOIL	SOIL	SOIL	SOIL	SOIL
		May-15-17 08:00	May-15-17 09:26	SOIL	May-03-17 09:30	mg/kg	1 ft	2 ft	3 ft	4 ft	6 ft
		May-15-17 08:00	May-15-17 09:26	SOIL	May-03-17 09:30	RL	SOIL	SOIL	SOIL	SOIL	SOIL

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Brandi Ritcherson

Brandi Ritcherson
Project Manager



Certificate of Analysis Summary 552580

COG Operating LLC, Artesia, NM

Project Name: SRO STATE COM #48H



Project Id:
Contact: Aaron Lieb
Project Location: SRO STATE COM #48H

Date Received in Lab: Fri May-05-17 11:00 am
Report Date: 15-MAY-17
Project Manager: Liz Givens

Analysis Requested	Lab Id:	552580-007	552580-008	552580-009	552580-010	552580-011	552580-012
	Field Id:	T1-8'	T1-10'	T1-12'	T1-14'	T1-18'	T1-24'
	Depth:	8 ft	10 ft	12 ft	14 ft	18 ft	24 ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Inorganic Anions by EPA 300/300.1	Sampled:	May-03-17 09:47	May-03-17 09:50	May-03-17 09:52	May-03-17 09:54	May-03-17 09:57	May-03-17 09:58
	Extracted:	May-13-17 15:00	May-13-17 15:00	May-13-17 15:00	May-13-17 15:00	May-13-17 15:00	May-13-17 15:00
	Analyzed:	May-13-17 19:21	May-13-17 19:28	May-13-17 19:36	May-13-17 19:43	May-13-17 19:51	May-13-17 20:14
	Units/RL:	mg/kg RL 6140 99.4	mg/kg RL 1290 48.7	mg/kg RL 271 24.9	mg/kg RL 28.3 4.89	mg/kg RL 98.0 4.93	mg/kg RL 163 4.88
Chloride							

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Brandi Ritcherson

Brandi Ritcherson
Project Manager



Certificate of Analysis Summary 552580

COG Operating LLC, Artesia, NM

Project Name: SRO STATE COM #48H

Received by OCD: 11/21/2022 10:40:20 AM

Page 20 of 154

Date Received in Lab: Fri May-05-17 11:00 am
Report Date: 15-MAY-17
Project Manager: Liz Givens

Project Id: Aaron Lieb
Contact: SRO STATE COM #48H
Project Location:

Analysis Requested	Lab Id:	552580-013	552580-014	552580-015	552580-016	552580-017	552580-018
	Field Id:	T2- SURF	T2- 1'	T2- 2'	T2- 3'	T2- 4'	T2- 6'
	Depth:		1 ft	2 ft	3 ft	4 ft	6 ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	May-03-17 10:05	May-03-17 10:10	May-03-17 10:13	May-03-17 10:15	May-03-17 10:17	May-03-17 10:20
BTEX by EPA 8021B	Extracted:	May-08-17 16:00	May-08-17 16:00				
	Analyzed:	May-09-17 10:13	May-09-17 10:29				
	Units/RL:	mg/kg RL	mg/kg RL				
	Benzene	<0.00388 0.00388	<0.00380 0.00380				
	Toluene	<0.00388 0.00388	0.00567 0.00380				
	Ethylbenzene	<0.00388 0.00388	<0.00380 0.00380				
	m,p-Xylenes	<0.00775 0.00775	<0.00760 0.00760				
Inorganic Anions by EPA 300/300.1	Extracted:	May-13-17 15:00	May-13-17 15:00	May-13-17 15:00	May-13-17 15:00	May-13-17 15:00	May-13-17 15:00
	Analyzed:	May-13-17 20:21	May-13-17 20:44	May-13-17 20:52	May-13-17 20:59	May-13-17 21:07	May-13-17 21:14
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Chloride	9730 99.4	11900 99.6	9720 98.8	8500 97.8	13900 249	13300 100
	Extracted:	May-08-17 15:00	May-08-17 15:00				
	Analyzed:	May-08-17 21:23	May-08-17 21:43				
	Units/RL:	mg/kg RL	mg/kg RL				
TPH By SW8015 Mod	C6-C10 Gasoline Range Hydrocarbons	<14.9 14.9	<15.0 15.0				
	C10-C28 Diesel Range Hydrocarbons	<14.9 14.9	<15.0 15.0				
	Total TPH	<14.9 14.9	<15.0 15.0				

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Brandi Ritcherson

Brandi Ritcherson
Project Manager



Certificate of Analysis Summary 552580
COG Operating LLC, Artesia, NM
Project Name: SRO STATE COM #48H



Project Id:
Contact: Aaron Lieb
Project Location: SRO STATE COM #48H

Date Received in Lab: Fri May-05-17 11:00 am
Report Date: 15-MAY-17
Project Manager: Liz Givens

Analysis Requested	Lab Id:	552580-019	552580-020	552580-021	552580-022	552580-023	552580-024
	Field Id:	T2- 8'	T2- 10'	T2- 12'	T2- 14'	T2- 19'	T2- 24'
	Depth:	8 ft	10 ft	12 ft	14 ft	19 ft	24 ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Inorganic Anions by EPA 300/300.1	Sampled:	May-03-17 10:22	May-03-17 10:25	May-03-17 10:30	May-03-17 10:35	May-03-17 10:37	May-03-17 10:40
	Extracted:	May-13-17 15:00	May-13-17 15:00	May-14-17 13:00	May-14-17 13:00	May-14-17 13:00	May-14-17 13:00
	Analyzed:	May-13-17 21:22	May-13-17 21:30	May-14-17 15:16	May-14-17 14:53	May-14-17 15:24	May-14-17 15:31
Chloride	Units/RL:	mg/kg RL 9170 97.1	mg/kg RL 1180 24.9	mg/kg RL 1350 24.8	mg/kg RL 6.48 4.94	mg/kg RL <25.0 25.0	mg/kg RL <49.7 49.7

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Brandi Ritcherson

Brandi Ritcherson
Project Manager



Certificate of Analysis Summary 552580
COG Operating LLC, Artesia, NM
Project Name: SRO STATE COM #48H

Received by OCD: 11/21/2022 10:40:20 AM

Page 22 of 154

Date Received in Lab: Fri May-05-17 11:00 am
Report Date: 15-MAY-17
Project Manager: Liz Givens

Project Id: Aaron Lieb
Contact: SRO STATE COM #48H
Project Location:

<i>Analysis Requested</i>	<i>Lab Id:</i>	552580-025	552580-026	552580-027	552580-028	552580-029	552580-030
	<i>Field Id:</i>	T3-SURF	T3-1'	T3-2'	T3-3'	T3-4'	T3-6'
	<i>Depth:</i>		1 ft	2 ft	3 ft	4 ft	6 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	May-03-17 10:55	May-03-17 11:00	May-03-17 11:03	May-03-17 11:05	May-03-17 11:08	May-03-17 11:10
BTEX by EPA 8021B	<i>Extracted:</i>	May-08-17 09:00	May-08-17 09:00				
	<i>Analyzed:</i>	May-09-17 01:31	May-09-17 01:47				
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL				
	Benzene	<0.00319 0.00319	<0.00201 0.00201				
	Toluene	<0.00319 0.00319	<0.00201 0.00201				
	Ethylbenzene	<0.00319 0.00319	<0.00201 0.00201				
	m,p-Xylenes	<0.00639 0.00639	<0.00402 0.00402				
Inorganic Anions by EPA 300/300.1	o-Xylene	<0.00319 0.00319	<0.00201 0.00201				
	Total Xylenes	<0.00319 0.00319	<0.00201 0.00201				
	Total BTEX	<0.00319 0.00319	<0.00201 0.00201				
	<i>Extracted:</i>	May-14-17 13:00	May-14-17 13:00	May-14-17 13:00	May-14-17 13:00	May-14-17 13:00	May-14-17 13:00
	<i>Analyzed:</i>	May-14-17 15:39	May-14-17 16:02	May-14-17 16:09	May-14-17 16:17	May-14-17 16:24	May-14-17 16:32
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Chloride	29000 250	649 4.94	23.0 4.97	1130 50.0	<24.9 24.9	<24.9 24.9
TPH By SW8015 Mod	<i>Extracted:</i>	May-08-17 15:00	May-08-17 15:00				
	<i>Analyzed:</i>	May-08-17 22:02	May-08-17 22:22				
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL				
	C6-C10 Gasoline Range Hydrocarbons	<15.0 15.0	<15.0 15.0				
C10-C28 Diesel Range Hydrocarbons		132 15.0	<15.0 15.0				
Total TPH		132 15.0	<15.0 15.0				

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Brandi Ritcherson

Brandi Ritcherson
Project Manager



Certificate of Analysis Summary 552580

COG Operating LLC, Artesia, NM

Project Name: SRO STATE COM #48H



Project Id: Aaron Lieb
Contact: SRO STATE COM #48H
Project Location:

Date Received in Lab: Fri May-05-17 11:00 am
Report Date: 15-MAY-17
Project Manager: Liz Givens

<i>Analysis Requested</i>		<i>Lab Id:</i>	<i>Field Id:</i>	<i>Depth:</i>	<i>Matrix:</i>	<i>Sampled:</i>	552580-031	552580-032	552580-033	552580-034	552580-035	552580-036
BTEX by EPA 8021B		<i>Extracted:</i>										
		<i>Analyzed:</i>										
		<i>Units/RL:</i>										
Benzene												
Toluene												
Ethylbenzene												
m,p-Xylenes												
o-Xylene												
Total Xylenes												
Total BTEX												
Inorganic Anions by EPA 300/300.1		<i>Extracted:</i>										
		<i>Analyzed:</i>										
		<i>Units/RL:</i>										
Chloride												
TPH By SW8015 Mod		<i>Extracted:</i>										
		<i>Analyzed:</i>										
		<i>Units/RL:</i>										
C6-C10 Gasoline Range Hydrocarbons												
C10-C28 Diesel Range Hydrocarbons												
Total TPH												

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Brandi Ritcherson

Brandi Ritcherson
Project Manager



Certificate of Analysis Summary 552580

COG Operating LLC, Artesia, NM

Project Name: SRO STATE COM #48H



Project Id:
Contact: Aaron Lieb
Project Location: SRO STATE COM #48H

Date Received in Lab: Fri May-05-17 11:00 am
Report Date: 15-MAY-17
Project Manager: Liz Givens

<i>Analysis Requested</i>	<i>Lab Id:</i>	552580-037	552580-038	552580-039	552580-040	552580-041	552580-042
	<i>Field Id:</i>	T4-2'	T4-3'	T4-4'	T4-6'	T4-11'	T4-16'
	<i>Depth:</i>	2 ft	3 ft	4 ft	6 ft	11 ft	16 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Inorganic Anions by EPA 300/300.1	<i>Sampled:</i>	May-03-17 12:45	May-03-17 12:50	May-03-17 12:55	May-03-17 12:58	May-03-17 01:05	May-03-17 01:10
	<i>Extracted:</i>	May-14-17 13:00	May-14-17 13:00	May-14-17 13:00	May-14-17 13:00	May-14-17 13:30	May-14-17 13:30
	<i>Analyzed:</i>	May-14-17 17:56	May-14-17 18:03	May-14-17 18:11	May-14-17 18:18	May-14-17 19:04	May-14-17 19:27
	<i>Units/RL:</i>	mg/kg RL 51.1 49.9	mg/kg RL <49.5 49.5	mg/kg RL <24.6 24.6	mg/kg RL 7.83 4.92	mg/kg RL 14.8 4.99	mg/kg RL 271 4.92
Chloride							

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Brandi Ritcherson

Brandi Ritcherson
Project Manager

Analytical Report 552580

for
COG Operating LLC

Project Manager: Aaron Lieb

SRO STATE COM #48H

15-MAY-17

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
Oklahoma (9218)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400)

Xenco-San Antonio: Texas (T104704534)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)

Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)



15-MAY-17

Project Manager: **Aaron Lieb**

COG Operating LLC

2407 Pecos Avenue

Artesia, NM 88210

Reference: XENCO Report No(s): **552580**

SRO STATE COM #48H

Project Address: SRO STATE COM #48H

Aaron Lieb:

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) 552580. 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. 552580 will be filed for 60 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,

A handwritten signature in black ink that reads 'Brandi Ritcherson'.

Brandi Ritcherson

Project Manager

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Sample Cross Reference 552580

COG Operating LLC, Artesia, NM

SRO STATE COM #48H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
T1-SURF	S	05-03-17 09:30	N/A	552580-001
T1-1'	S	05-03-17 09:35	- 1 ft	552580-002
T1-2'	S	05-03-17 09:37	- 2 ft	552580-003
T1-3'	S	05-03-17 09:40	- 3 ft	552580-004
T1-4'	S	05-03-17 09:42	- 4 ft	552580-005
T1-6'	S	05-03-17 09:45	- 6 ft	552580-006
T1-8'	S	05-03-17 09:47	- 8 ft	552580-007
T1-10'	S	05-03-17 09:50	- 10 ft	552580-008
T1-12'	S	05-03-17 09:52	- 12 ft	552580-009
T1-14'	S	05-03-17 09:54	- 14 ft	552580-010
T1-18'	S	05-03-17 09:57	- 18 ft	552580-011
T1-24'	S	05-03-17 09:58	- 24 ft	552580-012
T2- SURF	S	05-03-17 10:05	N/A	552580-013
T2- 1'	S	05-03-17 10:10	- 1 ft	552580-014
T2- 2'	S	05-03-17 10:13	- 2 ft	552580-015
T2- 3'	S	05-03-17 10:15	- 3 ft	552580-016
T2- 4'	S	05-03-17 10:17	- 4 ft	552580-017
T2- 6'	S	05-03-17 10:20	- 6 ft	552580-018
T2- 8'	S	05-03-17 10:22	- 8 ft	552580-019
T2- 10'	S	05-03-17 10:25	- 10 ft	552580-020
T2- 12'	S	05-03-17 10:30	- 12 ft	552580-021
T2- 14'	S	05-03-17 10:35	- 14 ft	552580-022
T2- 19'	S	05-03-17 10:37	- 19 ft	552580-023
T2- 24'	S	05-03-17 10:40	- 24 ft	552580-024
T3-SURF	S	05-03-17 10:55	N/A	552580-025
T3-1'	S	05-03-17 11:00	- 1 ft	552580-026
T3-2'	S	05-03-17 11:03	- 2 ft	552580-027
T3-3'	S	05-03-17 11:05	- 3 ft	552580-028
T3-4'	S	05-03-17 11:08	- 4 ft	552580-029
T3-6'	S	05-03-17 11:10	- 6 ft	552580-030
T3-8'	S	05-03-17 11:45	- 8 ft	552580-031
T3-10'	S	05-03-17 11:50	- 10 ft	552580-032
T3-17'	S	05-03-17 11:55	- 17 ft	552580-033
T3-22'	S	05-03-17 12:35	- 22 ft	552580-034
T4-SURF	S	05-03-17 12:40	N/A	552580-035
T4-1'	S	05-03-17 12:42	- 1 ft	552580-036
T4-2'	S	05-03-17 12:45	- 2 ft	552580-037
T4-3'	S	05-03-17 12:50	- 3 ft	552580-038
T4-4'	S	05-03-17 12:55	- 4 ft	552580-039
T4-6'	S	05-03-17 12:58	- 6 ft	552580-040
T4-11'	S	05-03-17 01:05	- 11 ft	552580-041
T4-16'	S	05-03-17 01:10	- 16 ft	552580-042

**CASE NARRATIVE****Client Name: COG Operating LLC****Project Name: SRO STATE COM #48H**

Project ID:
Work Order Number(s): 552580

Report Date: 15-MAY-17
Date Received: 05/05/2017

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3016772 BTEX by EPA 8021B

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

Batch: LBA-3017044 BTEX by EPA 8021B

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

Batch: LBA-3017191 Inorganic Anions by EPA 300/300.1

Lab Sample ID 552580-011 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 552580-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016, -017, -018, -019, -020.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3017230 Inorganic Anions by EPA 300/300.1

Lab Sample ID 552582-005 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 552580-041, -042.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.



Certificate of Analytical Results 552580

 COG Operating LLC, Artesia, NM
 SRO STATE COM #48H

 Sample Id: T1-SURF
 Lab Sample Id: 552580-001

 Matrix: Soil
 Date Collected: 05.03.17 09.30

Date Received: 05.05.17 11.00

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.15.17 08.00

Basis: Wet Weight

Seq Number: 3017191

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	11000	97.5	mg/kg	05.15.17 09.26		20

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 05.08.17 15.00

Basis: Wet Weight

Seq Number: 3016765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	05.08.17 20.06	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	<15.0	15.0	mg/kg	05.08.17 20.06	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.08.17 20.06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	05.08.17 20.06	
o-Terphenyl	84-15-1	108	%	70-135	05.08.17 20.06	

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 05.08.17 16.00

Basis: Wet Weight

Seq Number: 3017044

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00935	0.00935	mg/kg	05.09.17 12.07	U	1
Toluene	108-88-3	<0.00935	0.00935	mg/kg	05.09.17 12.07	U	1
Ethylbenzene	100-41-4	<0.00935	0.00935	mg/kg	05.09.17 12.07	U	1
m,p-Xylenes	179601-23-1	<0.0187	0.0187	mg/kg	05.09.17 12.07	U	1
o-Xylene	95-47-6	<0.00935	0.00935	mg/kg	05.09.17 12.07	U	1
Total Xylenes	1330-20-7	<0.00935	0.00935	mg/kg	05.09.17 12.07	U	1
Total BTEX		<0.00935	0.00935	mg/kg	05.09.17 12.07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	96	%	80-120	05.09.17 12.07	
1,4-Difluorobenzene	540-36-3	91	%	80-120	05.09.17 12.07	



Certificate of Analytical Results 552580

 COG Operating LLC, Artesia, NM
 SRO STATE COM #48H

Sample Id: T1-1' Matrix: Soil Date Received: 05.05.17 11.00
 Lab Sample Id: 552580-002 Date Collected: 05.03.17 09.35 Sample Depth: 1 ft
 Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
 Tech: MGO % Moisture:
 Analyst: MGO Date Prep: 05.13.17 15.00 Basis: Wet Weight
 Seq Number: 3017191

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12200	97.7	mg/kg	05.13.17 18.27		20

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 05.08.17 15.00 Basis: Wet Weight
 Seq Number: 3016765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	05.08.17 20.25	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	<15.0	15.0	mg/kg	05.08.17 20.25	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.08.17 20.25	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	101	%	70-135	05.08.17 20.25		
o-Terphenyl	84-15-1	104	%	70-135	05.08.17 20.25		

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
 Tech: ALJ % Moisture:
 Analyst: ALJ Date Prep: 05.08.17 09.00 Basis: Wet Weight
 Seq Number: 3016772

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00337	0.00337	mg/kg	05.09.17 00.43	U	1
Toluene	108-88-3	0.0158	0.00337	mg/kg	05.09.17 00.43		1
Ethylbenzene	100-41-4	<0.00337	0.00337	mg/kg	05.09.17 00.43	U	1
m,p-Xylenes	179601-23-1	0.0379	0.00673	mg/kg	05.09.17 00.43		1
o-Xylene	95-47-6	0.0169	0.00337	mg/kg	05.09.17 00.43		1
Total Xylenes	1330-20-7	0.0548	0.00337	mg/kg	05.09.17 00.43		1
Total BTEX		0.0706	0.00337	mg/kg	05.09.17 00.43		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	89	%	80-120	05.09.17 00.43		
1,4-Difluorobenzene	540-36-3	98	%	80-120	05.09.17 00.43		



Certificate of Analytical Results 552580

COG Operating LLC, Artesia, NM
SRO STATE COM #48H

Sample Id: T1-2' Matrix: Soil Date Received: 05.05.17 11.00
Lab Sample Id: 552580-003 Date Collected: 05.03.17 09.37 Sample Depth: 2 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.13.17 15.00 Basis: Wet Weight
Seq Number: 3017191

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	16800	250	mg/kg	05.13.17 18.35		50



Certificate of Analytical Results 552580

COG Operating LLC, Artesia, NM
SRO STATE COM #48HSample Id: T1-3'
Lab Sample Id: 552580-004Matrix: Soil
Date Collected: 05.03.17 09.40Date Received: 05.05.17 11.00
Sample Depth: 3 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.13.17 15.00

Basis: Wet Weight

Seq Number: 3017191

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	14600	247	mg/kg	05.13.17 18.43		50



Certificate of Analytical Results 552580

COG Operating LLC, Artesia, NM
SRO STATE COM #48H

Sample Id: T1-4' Matrix: Soil Date Received: 05.05.17 11.00
Lab Sample Id: 552580-005 Date Collected: 05.03.17 09.42 Sample Depth: 4 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.13.17 15.00 Basis: Wet Weight
Seq Number: 3017191

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	14800	249	mg/kg	05.13.17 18.50		50



Certificate of Analytical Results 552580

COG Operating LLC, Artesia, NM
SRO STATE COM #48HSample Id: T1-6'
Lab Sample Id: 552580-006Matrix: Soil
Date Collected: 05.03.17 09.45Date Received: 05.05.17 11.00
Sample Depth: 6 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.13.17 15.00

Basis: Wet Weight

Seq Number: 3017191

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	15400	249	mg/kg	05.13.17 19.13		50



Certificate of Analytical Results 552580

COG Operating LLC, Artesia, NM
SRO STATE COM #48HSample Id: T1-8'
Lab Sample Id: 552580-007Matrix: Soil
Date Collected: 05.03.17 09.47Date Received: 05.05.17 11.00
Sample Depth: 8 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.13.17 15.00

Basis: Wet Weight

Seq Number: 3017191

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6140	99.4	mg/kg	05.13.17 19.21		20



Certificate of Analytical Results 552580

COG Operating LLC, Artesia, NM
SRO STATE COM #48HSample Id: T1-10'
Lab Sample Id: 552580-008Matrix: Soil
Date Collected: 05.03.17 09.50Date Received: 05.05.17 11.00
Sample Depth: 10 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.13.17 15.00

Basis: Wet Weight

Seq Number: 3017191

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1290	48.7	mg/kg	05.13.17 19.28		10



Certificate of Analytical Results 552580

COG Operating LLC, Artesia, NM
SRO STATE COM #48HSample Id: T1-12'
Lab Sample Id: 552580-009Matrix: Soil
Date Collected: 05.03.17 09.52Date Received: 05.05.17 11.00
Sample Depth: 12 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.13.17 15.00

Basis: Wet Weight

Seq Number: 3017191

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	271	24.9	mg/kg	05.13.17 19.36		5



Certificate of Analytical Results 552580

COG Operating LLC, Artesia, NM
SRO STATE COM #48HSample Id: T1-14'
Lab Sample Id: 552580-010Matrix: Soil
Date Collected: 05.03.17 09.54Date Received: 05.05.17 11.00
Sample Depth: 14 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.13.17 15.00

Basis: Wet Weight

Seq Number: 3017191

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	28.3	4.89	mg/kg	05.13.17 19.43		1



Certificate of Analytical Results 552580

COG Operating LLC, Artesia, NM
SRO STATE COM #48HSample Id: T1-18'
Lab Sample Id: 552580-011Matrix: Soil
Date Collected: 05.03.17 09.57Date Received: 05.05.17 11.00
Sample Depth: 18 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.13.17 15.00

Basis: Wet Weight

Seq Number: 3017191

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	98.0	4.93	mg/kg	05.13.17 19.51		1



Certificate of Analytical Results 552580

COG Operating LLC, Artesia, NM
SRO STATE COM #48HSample Id: T1-24'
Lab Sample Id: 552580-012Matrix: Soil
Date Collected: 05.03.17 09.58Date Received: 05.05.17 11.00
Sample Depth: 24 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.13.17 15.00

Basis: Wet Weight

Seq Number: 3017191

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	163	4.88	mg/kg	05.13.17 20.14		1



Certificate of Analytical Results 552580

 COG Operating LLC, Artesia, NM
 SRO STATE COM #48H

 Sample Id: T2- SURF
 Lab Sample Id: 552580-013

 Matrix: Soil
 Date Collected: 05.03.17 10.05

Date Received: 05.05.17 11.00

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.13.17 15.00

Basis: Wet Weight

Seq Number: 3017191

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9730	99.4	mg/kg	05.13.17 20.21		20

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 05.08.17 15.00

Basis: Wet Weight

Seq Number: 3016765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<14.9	14.9	mg/kg	05.08.17 21.23	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	<14.9	14.9	mg/kg	05.08.17 21.23	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	05.08.17 21.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	05.08.17 21.23	
o-Terphenyl	84-15-1	104	%	70-135	05.08.17 21.23	

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 05.08.17 16.00

Basis: Wet Weight

Seq Number: 3017044

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00388	0.00388	mg/kg	05.09.17 10.13	U	1
Toluene	108-88-3	<0.00388	0.00388	mg/kg	05.09.17 10.13	U	1
Ethylbenzene	100-41-4	<0.00388	0.00388	mg/kg	05.09.17 10.13	U	1
m,p-Xylenes	179601-23-1	<0.00775	0.00775	mg/kg	05.09.17 10.13	U	1
o-Xylene	95-47-6	<0.00388	0.00388	mg/kg	05.09.17 10.13	U	1
Total Xylenes	1330-20-7	<0.00388	0.00388	mg/kg	05.09.17 10.13	U	1
Total BTEX		<0.00388	0.00388	mg/kg	05.09.17 10.13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	86	%	80-120	05.09.17 10.13	
1,4-Difluorobenzene	540-36-3	88	%	80-120	05.09.17 10.13	



Certificate of Analytical Results 552580

 COG Operating LLC, Artesia, NM
 SRO STATE COM #48H

Sample Id: T2- 1' Matrix: Soil Date Received: 05.05.17 11.00
 Lab Sample Id: 552580-014 Date Collected: 05.03.17 10.10 Sample Depth: 1 ft
 Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
 Tech: MGO % Moisture:
 Analyst: MGO Date Prep: 05.13.17 15.00 Basis: Wet Weight
 Seq Number: 3017191

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	11900	99.6	mg/kg	05.13.17 20.44		20

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 05.08.17 15.00 Basis: Wet Weight
 Seq Number: 3016765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	05.08.17 21.43	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	<15.0	15.0	mg/kg	05.08.17 21.43	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.08.17 21.43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	05.08.17 21.43	
o-Terphenyl	84-15-1	103	%	70-135	05.08.17 21.43	

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
 Tech: ALJ % Moisture:
 Analyst: ALJ Date Prep: 05.08.17 16.00 Basis: Wet Weight
 Seq Number: 3017044

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00380	0.00380	mg/kg	05.09.17 10.29	U	1
Toluene	108-88-3	0.00567	0.00380	mg/kg	05.09.17 10.29		1
Ethylbenzene	100-41-4	<0.00380	0.00380	mg/kg	05.09.17 10.29	U	1
m,p-Xylenes	179601-23-1	<0.00760	0.00760	mg/kg	05.09.17 10.29	U	1
o-Xylene	95-47-6	<0.00380	0.00380	mg/kg	05.09.17 10.29	U	1
Total Xylenes	1330-20-7	<0.00380	0.00380	mg/kg	05.09.17 10.29	U	1
Total BTEX		0.00567	0.00380	mg/kg	05.09.17 10.29		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	115	%	80-120	05.09.17 10.29	
1,4-Difluorobenzene	540-36-3	118	%	80-120	05.09.17 10.29	



Certificate of Analytical Results 552580

COG Operating LLC, Artesia, NM
SRO STATE COM #48HSample Id: T2- 2'
Lab Sample Id: 552580-015Matrix: Soil
Date Collected: 05.03.17 10.13Date Received: 05.05.17 11.00
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.13.17 15.00

Basis: Wet Weight

Seq Number: 3017191

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9720	98.8	mg/kg	05.13.17 20.52		20



Certificate of Analytical Results 552580

COG Operating LLC, Artesia, NM
SRO STATE COM #48HSample Id: T2- 3'
Lab Sample Id: 552580-016Matrix: Soil
Date Collected: 05.03.17 10.15Date Received: 05.05.17 11.00
Sample Depth: 3 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.13.17 15.00

Basis: Wet Weight

Seq Number: 3017191

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8500	97.8	mg/kg	05.13.17 20.59		20



Certificate of Analytical Results 552580

COG Operating LLC, Artesia, NM
SRO STATE COM #48HSample Id: T2- 4'
Lab Sample Id: 552580-017Matrix: Soil
Date Collected: 05.03.17 10.17Date Received: 05.05.17 11.00
Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.13.17 15.00

Basis: Wet Weight

Seq Number: 3017191

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	13900	249	mg/kg	05.13.17 21.07		50



Certificate of Analytical Results 552580

COG Operating LLC, Artesia, NM
SRO STATE COM #48HSample Id: T2- 6'
Lab Sample Id: 552580-018Matrix: Soil
Date Collected: 05.03.17 10.20Date Received: 05.05.17 11.00
Sample Depth: 6 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.13.17 15.00

Basis: Wet Weight

Seq Number: 3017191

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	13300	100	mg/kg	05.13.17 21.14		20



Certificate of Analytical Results 552580

COG Operating LLC, Artesia, NM
SRO STATE COM #48HSample Id: T2- 8'
Lab Sample Id: 552580-019Matrix: Soil
Date Collected: 05.03.17 10.22Date Received: 05.05.17 11.00
Sample Depth: 8 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.13.17 15.00

Basis: Wet Weight

Seq Number: 3017191

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9170	97.1	mg/kg	05.13.17 21.22		20



Certificate of Analytical Results 552580

COG Operating LLC, Artesia, NM
SRO STATE COM #48HSample Id: T2- 10'
Lab Sample Id: 552580-020Matrix: Soil
Date Collected: 05.03.17 10.25Date Received: 05.05.17 11.00
Sample Depth: 10 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.13.17 15.00

Basis: Wet Weight

Seq Number: 3017191

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1180	24.9	mg/kg	05.13.17 21.30		5



Certificate of Analytical Results 552580

COG Operating LLC, Artesia, NM
SRO STATE COM #48HSample Id: T2- 12'
Lab Sample Id: 552580-021Matrix: Soil
Date Collected: 05.03.17 10.30Date Received: 05.05.17 11.00
Sample Depth: 12 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.14.17 13.00

Basis: Wet Weight

Seq Number: 3017234

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1350	24.8	mg/kg	05.14.17 15.16		5



Certificate of Analytical Results 552580

COG Operating LLC, Artesia, NM
SRO STATE COM #48HSample Id: T2- 14'
Lab Sample Id: 552580-022Matrix: Soil
Date Collected: 05.03.17 10.35Date Received: 05.05.17 11.00
Sample Depth: 14 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.14.17 13.00

Basis: Wet Weight

Seq Number: 3017234

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.48	4.94	mg/kg	05.14.17 14.53		1



Certificate of Analytical Results 552580

COG Operating LLC, Artesia, NM
SRO STATE COM #48HSample Id: T2- 19'
Lab Sample Id: 552580-023Matrix: Soil
Date Collected: 05.03.17 10.37Date Received: 05.05.17 11.00
Sample Depth: 19 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.14.17 13.00

Basis: Wet Weight

Seq Number: 3017234

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<25.0	25.0	mg/kg	05.14.17 15.24	U	5



Certificate of Analytical Results 552580

COG Operating LLC, Artesia, NM
SRO STATE COM #48HSample Id: T2- 24'
Lab Sample Id: 552580-024Matrix: Soil
Date Collected: 05.03.17 10.40Date Received: 05.05.17 11.00
Sample Depth: 24 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.14.17 13.00

Basis: Wet Weight

Seq Number: 3017234

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<49.7	49.7	mg/kg	05.14.17 15.31	U	10



Certificate of Analytical Results 552580

COG Operating LLC, Artesia, NM
SRO STATE COM #48H

Sample Id: **T3-SURF**
 Lab Sample Id: 552580-025

Matrix: Soil
 Date Collected: 05.03.17 10.55

Date Received: 05.05.17 11.00

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.14.17 13.00

Basis: Wet Weight

Seq Number: 3017234

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	29000	250	mg/kg	05.14.17 15.39		50

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 05.08.17 15.00

Basis: Wet Weight

Seq Number: 3016765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	05.08.17 22.02	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	132	15.0	mg/kg	05.08.17 22.02		1
Total TPH	PHC635	132	15.0	mg/kg	05.08.17 22.02		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	05.08.17 22.02	
o-Terphenyl	84-15-1	103	%	70-135	05.08.17 22.02	

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 05.08.17 09.00

Basis: Wet Weight

Seq Number: 3016772

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00319	0.00319	mg/kg	05.09.17 01.31	U	1
Toluene	108-88-3	<0.00319	0.00319	mg/kg	05.09.17 01.31	U	1
Ethylbenzene	100-41-4	<0.00319	0.00319	mg/kg	05.09.17 01.31	U	1
m,p-Xylenes	179601-23-1	<0.00639	0.00639	mg/kg	05.09.17 01.31	U	1
o-Xylene	95-47-6	<0.00319	0.00319	mg/kg	05.09.17 01.31	U	1
Total Xylenes	1330-20-7	<0.00319	0.00319	mg/kg	05.09.17 01.31	U	1
Total BTEX		<0.00319	0.00319	mg/kg	05.09.17 01.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	117	%	80-120	05.09.17 01.31	
1,4-Difluorobenzene	540-36-3	116	%	80-120	05.09.17 01.31	



Certificate of Analytical Results 552580

 COG Operating LLC, Artesia, NM
 SRO STATE COM #48H

Sample Id: T3-1' Matrix: Soil Date Received: 05.05.17 11.00
 Lab Sample Id: 552580-026 Date Collected: 05.03.17 11.00 Sample Depth: 1 ft
 Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
 Tech: MGO % Moisture:
 Analyst: MGO Date Prep: 05.14.17 13.00 Basis: Wet Weight
 Seq Number: 3017234

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	649	4.94	mg/kg	05.14.17 16.02		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 05.08.17 15.00 Basis: Wet Weight
 Seq Number: 3016765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	05.08.17 22.22	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	<15.0	15.0	mg/kg	05.08.17 22.22	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.08.17 22.22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	05.08.17 22.22	
o-Terphenyl	84-15-1	96	%	70-135	05.08.17 22.22	

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
 Tech: ALJ % Moisture:
 Analyst: ALJ Date Prep: 05.08.17 09.00 Basis: Wet Weight
 Seq Number: 3016772

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	05.09.17 01.47	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	05.09.17 01.47	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	05.09.17 01.47	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	05.09.17 01.47	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	05.09.17 01.47	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	05.09.17 01.47	U	1
Total BTEX		<0.00201	0.00201	mg/kg	05.09.17 01.47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	89	%	80-120	05.09.17 01.47	
1,4-Difluorobenzene	540-36-3	102	%	80-120	05.09.17 01.47	



Certificate of Analytical Results 552580

COG Operating LLC, Artesia, NM
SRO STATE COM #48H

Sample Id: T3-2' Matrix: Soil Date Received: 05.05.17 11.00
Lab Sample Id: 552580-027 Date Collected: 05.03.17 11.03 Sample Depth: 2 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.14.17 13.00 Basis: Wet Weight
Seq Number: 3017234

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	23.0	4.97	mg/kg	05.14.17 16.09		1



Certificate of Analytical Results 552580

COG Operating LLC, Artesia, NM
SRO STATE COM #48H

Sample Id: T3-3' Matrix: Soil Date Received: 05.05.17 11.00
Lab Sample Id: 552580-028 Date Collected: 05.03.17 11.05 Sample Depth: 3 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.14.17 13.00 Basis: Wet Weight
Seq Number: 3017234

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1130	50.0	mg/kg	05.14.17 16.17		10



Certificate of Analytical Results 552580

COG Operating LLC, Artesia, NM
SRO STATE COM #48HSample Id: T3-4'
Lab Sample Id: 552580-029Matrix: Soil
Date Collected: 05.03.17 11.08Date Received: 05.05.17 11.00
Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.14.17 13.00

Basis: Wet Weight

Seq Number: 3017234

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<24.9	24.9	mg/kg	05.14.17 16.24	U	5



Certificate of Analytical Results 552580

COG Operating LLC, Artesia, NM
SRO STATE COM #48H

Sample Id: T3-6' Matrix: Soil Date Received: 05.05.17 11.00
Lab Sample Id: 552580-030 Date Collected: 05.03.17 11.10 Sample Depth: 6 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.14.17 13.00 Basis: Wet Weight
Seq Number: 3017234

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<24.9	24.9	mg/kg	05.14.17 16.32	U	5



Certificate of Analytical Results 552580

COG Operating LLC, Artesia, NM
SRO STATE COM #48H

Sample Id: T3-8' Matrix: Soil Date Received: 05.05.17 11.00
Lab Sample Id: 552580-031 Date Collected: 05.03.17 11.45 Sample Depth: 8 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.14.17 13.00 Basis: Wet Weight
Seq Number: 3017234

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<24.9	24.9	mg/kg	05.14.17 17.02	U	5



Certificate of Analytical Results 552580

COG Operating LLC, Artesia, NM
SRO STATE COM #48H

Sample Id: T3-10' Matrix: Soil Date Received: 05.05.17 11.00
Lab Sample Id: 552580-032 Date Collected: 05.03.17 11.50 Sample Depth: 10 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.14.17 13.00 Basis: Wet Weight
Seq Number: 3017234

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<24.9	24.9	mg/kg	05.14.17 17.10	U	5



Certificate of Analytical Results 552580

COG Operating LLC, Artesia, NM
SRO STATE COM #48H

Sample Id: T3-17' Matrix: Soil Date Received: 05.05.17 11.00
Lab Sample Id: 552580-033 Date Collected: 05.03.17 11.55 Sample Depth: 17 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.14.17 13.00 Basis: Wet Weight
Seq Number: 3017234

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	209	4.92	mg/kg	05.14.17 16.40		1



Certificate of Analytical Results 552580

COG Operating LLC, Artesia, NM
SRO STATE COM #48H

Sample Id: T3-22' Matrix: Soil Date Received: 05.05.17 11.00
Lab Sample Id: 552580-034 Date Collected: 05.03.17 12.35 Sample Depth: 22 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.14.17 13.00 Basis: Wet Weight
Seq Number: 3017234

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	209	4.94	mg/kg	05.14.17 17.33		1



Certificate of Analytical Results 552580

COG Operating LLC, Artesia, NM
SRO STATE COM #48H

Sample Id: **T4-SURF**
Lab Sample Id: 552580-035

Matrix: Soil
Date Collected: 05.03.17 12.40

Date Received: 05.05.17 11.00

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MGO

Analyst: MGO

Seq Number: 3017234

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Date Prep: 05.14.17 13.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	37.2	4.92	mg/kg	05.14.17 17.40		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3016765

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Date Prep: 05.08.17 15.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	05.08.17 22.41	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	<15.0	15.0	mg/kg	05.08.17 22.41	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.08.17 22.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	05.08.17 22.41	
o-Terphenyl	84-15-1	95	%	70-135	05.08.17 22.41	

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3016772

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Date Prep: 05.08.17 09.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	05.09.17 02.03	U	1
Toluene	108-88-3	0.00334	0.00199	mg/kg	05.09.17 02.03		1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	05.09.17 02.03	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	05.09.17 02.03	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	05.09.17 02.03	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	05.09.17 02.03	U	1
Total BTEX		0.00334	0.00199	mg/kg	05.09.17 02.03		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	85	%	80-120	05.09.17 02.03	
1,4-Difluorobenzene	540-36-3	102	%	80-120	05.09.17 02.03	



Certificate of Analytical Results 552580

 COG Operating LLC, Artesia, NM
 SRO STATE COM #48H

Sample Id: T4-1' Matrix: Soil Date Received: 05.05.17 11.00
 Lab Sample Id: 552580-036 Date Collected: 05.03.17 12.42 Sample Depth: 1 ft
 Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
 Tech: MGO % Moisture:
 Analyst: MGO Date Prep: 05.14.17 13.00 Basis: Wet Weight
 Seq Number: 3017234

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<48.9	48.9	mg/kg	05.14.17 17.48	U	10

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 05.08.17 15.00 Basis: Wet Weight
 Seq Number: 3016765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	05.08.17 23.00	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	<15.0	15.0	mg/kg	05.08.17 23.00	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.08.17 23.00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	05.08.17 23.00	
o-Terphenyl	84-15-1	96	%	70-135	05.08.17 23.00	

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
 Tech: ALJ % Moisture:
 Analyst: ALJ Date Prep: 05.08.17 09.00 Basis: Wet Weight
 Seq Number: 3016772

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	05.09.17 02.19	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	05.09.17 02.19	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	05.09.17 02.19	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	05.09.17 02.19	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	05.09.17 02.19	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	05.09.17 02.19	U	1
Total BTEX		<0.00198	0.00198	mg/kg	05.09.17 02.19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	104	%	80-120	05.09.17 02.19	
4-Bromofluorobenzene	460-00-4	87	%	80-120	05.09.17 02.19	



Certificate of Analytical Results 552580

COG Operating LLC, Artesia, NM
SRO STATE COM #48HSample Id: T4-2'
Lab Sample Id: 552580-037Matrix: Soil
Date Collected: 05.03.17 12.45Date Received: 05.05.17 11.00
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.14.17 13.00

Basis: Wet Weight

Seq Number: 3017234

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	51.1	49.9	mg/kg	05.14.17 17.56		10



Certificate of Analytical Results 552580

COG Operating LLC, Artesia, NM
SRO STATE COM #48HSample Id: T4-3'
Lab Sample Id: 552580-038Matrix: Soil
Date Collected: 05.03.17 12.50Date Received: 05.05.17 11.00
Sample Depth: 3 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.14.17 13.00

Basis: Wet Weight

Seq Number: 3017234

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<49.5	49.5	mg/kg	05.14.17 18.03	U	10



Certificate of Analytical Results 552580

COG Operating LLC, Artesia, NM
SRO STATE COM #48HSample Id: T4-4'
Lab Sample Id: 552580-039Matrix: Soil
Date Collected: 05.03.17 12.55Date Received: 05.05.17 11.00
Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.14.17 13.00

Basis: Wet Weight

Seq Number: 3017234

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<24.6	24.6	mg/kg	05.14.17 18.11	U	5



Certificate of Analytical Results 552580

COG Operating LLC, Artesia, NM
SRO STATE COM #48HSample Id: T4-6'
Lab Sample Id: 552580-040Matrix: Soil
Date Collected: 05.03.17 12.58Date Received: 05.05.17 11.00
Sample Depth: 6 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.14.17 13.00

Basis: Wet Weight

Seq Number: 3017234

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7.83	4.92	mg/kg	05.14.17 18.18		1



Certificate of Analytical Results 552580

COG Operating LLC, Artesia, NM
SRO STATE COM #48H

Sample Id: T4-11' Matrix: Soil Date Received: 05.05.17 11.00
Lab Sample Id: 552580-041 Date Collected: 05.03.17 01.05 Sample Depth: 11 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.14.17 13.30 Basis: Wet Weight
Seq Number: 3017230

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	14.8	4.99	mg/kg	05.14.17 19.04		1



Certificate of Analytical Results 552580

COG Operating LLC, Artesia, NM
SRO STATE COM #48HSample Id: T4-16'
Lab Sample Id: 552580-042Matrix: Soil
Date Collected: 05.03.17 01.10Date Received: 05.05.17 11.00
Sample Depth: 16 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.14.17 13.30

Basis: Wet Weight

Seq Number: 3017230

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	271	4.92	mg/kg	05.14.17 19.27		1



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 **SQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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COG Operating LLC
SRO STATE COM #48H

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3017191

Matrix: Solid

Prep Method: E300P

MB Sample Id: 724544-1-BLK

LCS Sample Id: 724544-1-BKS

Date Prep: 05.13.17

LCSD Sample Id: 724544-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	241	96	245	98	90-110	2	20	mg/kg	05.13.17 17:06	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3017234

Matrix: Solid

Prep Method: E300P

MB Sample Id: 724549-1-BLK

LCS Sample Id: 724549-1-BKS

Date Prep: 05.14.17

LCSD Sample Id: 724549-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	252	101	255	102	90-110	1	20	mg/kg	05.14.17 14:38	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3017230

Matrix: Solid

Prep Method: E300P

MB Sample Id: 724559-1-BLK

LCS Sample Id: 724559-1-BKS

Date Prep: 05.14.17

LCSD Sample Id: 724559-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	255	102	253	101	90-110	1	20	mg/kg	05.14.17 18:49	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3017191

Matrix: Soil

Prep Method: E300P

Parent Sample Id: 552580-011

MS Sample Id: 552580-011 S

Date Prep: 05.13.17

MSD Sample Id: 552580-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	98.0	247	347	101	348	101	90-110	0	20	mg/kg	05.13.17 19:59	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3017234

Matrix: Soil

Prep Method: E300P

Parent Sample Id: 552580-022

MS Sample Id: 552580-022 S

Date Prep: 05.14.17

MSD Sample Id: 552580-022 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	6.48	247	258	102	255	101	90-110	1	20	mg/kg	05.14.17 15:01	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3017234

Matrix: Soil

Prep Method: E300P

Parent Sample Id: 552580-033

MS Sample Id: 552580-033 S

Date Prep: 05.14.17

MSD Sample Id: 552580-033 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	209	246	457	101	456	100	90-110	0	20	mg/kg	05.14.17 16:47	



COG Operating LLC
SRO STATE COM #48H

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3017230

Matrix: Soil

Prep Method: E300P

Parent Sample Id: 552580-041

MS Sample Id: 552580-041 S

Date Prep: 05.14.17

MSD Sample Id: 552580-041 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	14.8	250	299	114	289	110	90-110	3	20	mg/kg	05.14.17 19:12	X

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3017230

Matrix: Soil

Prep Method: E300P

Parent Sample Id: 552582-005

MS Sample Id: 552582-005 S

Date Prep: 05.14.17

MSD Sample Id: 552582-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	26.8	244	311	116	296	110	90-110	5	20	mg/kg	05.14.17 20:58	X

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3017191

Matrix: Soil

Prep Method: E300P

Parent Sample Id: 552580-001

MS Sample Id: 552580-001 S

Date Prep: 05.15.17

MSD Sample Id: 552580-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	11000	244	10700	0	10600	0	90-110	1	20	mg/kg	05.15.17 09:34	X

Analytical Method: TPH By SW8015 Mod

Seq Number: 3016765

Matrix: Solid

Prep Method: TX1005P

MB Sample Id: 724267-1-BLK

LCS Sample Id: 724267-1-BKS

Date Prep: 05.08.17

LCSD Sample Id: 724267-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	1170	117	1170	117	70-135	0	35	mg/kg	05.08.17 16:14	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	1100	110	1120	112	70-135	2	35	mg/kg	05.08.17 16:14	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	109		115		120		70-135	%	05.08.17 16:14
o-Terphenyl	118		116		115		70-135	%	05.08.17 16:14



COG Operating LLC
SRO STATE COM #48H

Analytical Method: TPH By SW8015 Mod

Seq Number: 3016765

Parent Sample Id: 552561-001

Matrix: Soil

MS Sample Id: 552561-001 S

Prep Method: TX1005P

Date Prep: 05.08.17

MSD Sample Id: 552561-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
C6-C10 Gasoline Range Hydrocarbons	18.9	999	1030	101	986	97	70-135	4	35	mg/kg	05.08.17 18:13	
C10-C28 Diesel Range Hydrocarbons	110	999	1140	103	1140	103	70-135	0	35	mg/kg	05.08.17 18:13	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	107		97		70-135	%	05.08.17 18:13
o-Terphenyl	103		85		70-135	%	05.08.17 18:13

Analytical Method: BTEX by EPA 8021B

Seq Number: 3016772

MB Sample Id: 724253-1-BLK

Matrix: Solid

LCS Sample Id: 724253-1-BKS

Prep Method: SW5030B

Date Prep: 05.08.17

LCSD Sample Id: 724253-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0994	0.0954	96	0.0967	97	70-130	1	35	mg/kg	05.08.17 19:22	
Toluene	<0.00199	0.0994	0.0995	100	0.111	111	70-130	11	35	mg/kg	05.08.17 19:22	
Ethylbenzene	<0.00199	0.0994	0.0915	92	0.0937	94	71-129	2	35	mg/kg	05.08.17 19:22	
m,p-Xylenes	<0.00398	0.199	0.180	90	0.182	91	70-135	1	35	mg/kg	05.08.17 19:22	
o-Xylene	<0.00199	0.0994	0.0944	95	0.0975	98	71-133	3	35	mg/kg	05.08.17 19:22	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	119		101		104		80-120	%	05.08.17 19:22
4-Bromofluorobenzene	110		101		103		80-120	%	05.08.17 19:22

Analytical Method: BTEX by EPA 8021B

Seq Number: 3017044

MB Sample Id: 724323-1-BLK

Matrix: Solid

LCS Sample Id: 724323-1-BKS

Prep Method: SW5030B

Date Prep: 05.08.17

LCSD Sample Id: 724323-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0942	94	0.0942	94	70-130	0	35	mg/kg	05.09.17 07:15	
Toluene	<0.00200	0.0998	0.0964	97	0.101	101	70-130	5	35	mg/kg	05.09.17 07:15	
Ethylbenzene	<0.00200	0.0998	0.0938	94	0.0898	90	71-129	4	35	mg/kg	05.09.17 07:15	
m,p-Xylenes	<0.00399	0.200	0.186	93	0.186	93	70-135	0	35	mg/kg	05.09.17 07:15	
o-Xylene	<0.00200	0.0998	0.0996	100	0.103	103	71-133	3	35	mg/kg	05.09.17 07:15	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		97		101		80-120	%	05.09.17 07:15
4-Bromofluorobenzene	92		85		106		80-120	%	05.09.17 07:15



COG Operating LLC
SRO STATE COM #48H

Analytical Method: BTEX by EPA 8021B

Seq Number: 3016772

Parent Sample Id: 552561-001

Matrix: Soil

MS Sample Id: 552561-001 S

Prep Method: SW5030B

Date Prep: 05.08.17

MSD Sample Id: 552561-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0743	74	0.0770	76	70-130	4	35	mg/kg	05.08.17 19:54	
Toluene	<0.00202	0.101	0.0704	70	0.0884	88	70-130	23	35	mg/kg	05.08.17 19:54	
Ethylbenzene	0.00751	0.101	0.0627	55	0.0780	70	71-129	22	35	mg/kg	05.08.17 19:54	X
m,p-Xylenes	0.0417	0.202	0.151	54	0.162	60	70-135	7	35	mg/kg	05.08.17 19:54	X
o-Xylene	0.0179	0.101	0.0868	68	0.0875	69	71-133	1	35	mg/kg	05.08.17 19:54	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	120		118		80-120	%	05.08.17 19:54
4-Bromofluorobenzene	116		112		80-120	%	05.08.17 19:54

Analytical Method: BTEX by EPA 8021B

Seq Number: 3017044

Parent Sample Id: 552582-003

Matrix: Soil

MS Sample Id: 552582-003 S

Prep Method: SW5030B

Date Prep: 05.08.17

MSD Sample Id: 552582-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0725	73	0.0485	48	70-130	40	35	mg/kg	05.09.17 07:47	XF
Toluene	<0.00200	0.0998	0.0639	64	0.0348	34	70-130	59	35	mg/kg	05.09.17 07:47	XF
Ethylbenzene	<0.00200	0.0998	0.0539	54	0.0289	29	71-129	60	35	mg/kg	05.09.17 07:47	XF
m,p-Xylenes	<0.00399	0.200	0.105	53	0.0505	25	70-135	70	35	mg/kg	05.09.17 07:47	XF
o-Xylene	<0.00200	0.0998	0.0597	60	0.0353	35	71-133	51	35	mg/kg	05.09.17 07:47	XF

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	112		91		80-120	%	05.09.17 07:47
4-Bromofluorobenzene	105		95		80-120	%	05.09.17 07:47



Setting the Standard since 1990
Stafford, Texas (281-240-4200)
Dallas Texas (214-902-0300)

CHAIN OF CUSTODY

Page 4 of 5

San Antonio, Texas (210-509-3334)
Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

www.xenco.com

Xenco Quote #

Xenco Job #

552580

Matrix Codes

W = Water
S = Soil/Sediment
GW = Ground Water
DW = Drinking Water
P = Product
SW = Surface water
SL = Sludge
OW = Ocean/Sea Water
WI = Wipe
O = Oil
WW = Waste Water
A = Air

Client / Reporting Information

Company Name / Branch:

COG Operating LLC

Company Address:

2407 PECOS Avenue Artesia NM 88210

Email: alleh@concho.com dneel2@concho.com rhaskell@concho.com

Phone No: 575-748-1553

Project Contact: Aaron Lieb

Samplers Name: Aaron Lieb

Project Information

Project Name/Number:

SRO STATE COM #48H

Project Location:

SRO STATE COM #

Invoice To: COG Operating LLC
Attn: Robert McNeill
600 W. Illinois
Midland TX 79701

PO Number:

No. Field ID / Point of Collection

No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Number of preserved bottles	Analytical Information	Matrix Codes
1	T1 - Surf	1	5/3/17	9:30am	S	1										X TPH	
2	T1 - 1'	1		9:35am		1										X BTEX	
3	T1 - 2'	2		9:37am		1										X Chloride	
4	T1 - 3'	3		9:40am		1										X	
5	T1 - 4'	4		9:42am		1										X	
6	T1 - 6'	6		9:45am		1										X	
7	T1 - 8'	8		9:47am		1										X	
8	T1 - 10'	10		9:50am		1										X	
9	T1 - 12'	12		9:52am		1										X	
10	T1 - 14'	14		9:54am		1										X	

Notes:

Turnaround Time (Business days)

Data Deliverable Information

Notes:

Field Comments

Same Day TAT

5 Day TAT

Level II Std QC

Level IV (Full Data Pkg / raw data)

Next Day EMERGENCY

7 Day TAT

Level III Std QC+ Forms

TRRP Level IV

2 Day EMERGENCY

Contract TAT

Level 3 (CLP Forms)

UST / RG -411

3 Day EMERGENCY

TRRP Checklist

TAT Starts Day received by Lab, if received by 5:00 pm

FED-EX / UPS: Tracking #

Relinquished by Sampler:

Relinquished By:

Relinquished By:

Relinquished By:

Relinquished By:

Relinquished by:

Relinquished By:

Relinquished By:

Relinquished By:

Relinquished By:

Relinquished by:

Relinquished By:

Relinquished By:

Relinquished By:

Relinquished By:



Setting the Standard since 1990
Stafford, Texas (281-240-4200)
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CHAIN OF CUSTODY

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San Antonio, Texas (210-509-3334)
Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

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Xenco Quote #

Xenco Job #

553580

Matrix Codes

W = Water
S = Soil/Sed/Solid
GW = Ground Water
DW = Drinking Water
P = Product
SW = Surface water
SL = Sludge
OW = Ocean/Sea Water
WI = Wipe
O = Oil
WW = Waste Water
A = Air

Field Comments

TPH
BTEX
Chloride

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
Company Name / Branch: COG Operating LLC Company Address: 2407 PECOS Avenue Artesia NM 88210 Email: alieb@concho.com dneel2@concho.com rhaskell@concho.com Phone No: 575-748-1553 Project Contact: Aaron Lieb Sampler's Name: Aaron Lieb				Project Name/Number: SRO STATE COM #48H Project Location: SRO STATE COM # Invoice To: COG Operating LLC Attn: Robert McNeill 600 W. Illinois Midland TX 79701 PO Number:																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
No.	Field ID / Point of Collection	Collection		Number of preserved bottles							Field Comments																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
		Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4					NaOH	NaHSO4	MEOH	NONE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
1	T1 - 18'	18'	5/3/17	9:57 AM	5	1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			</

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for losses or expenses incurred by the Client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at \$5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.



Setting the Standard since 1990
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CHAIN OF CUSTODY

Page 3 of 5

San Antonio, Texas (210-509-3334)
 Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

www.xenoco.com

Xenoco Quote #

Xenoco Job #

5525800

Matrix Codes

W = Water
 S = Soil/Sed/Solid
 GW = Ground Water
 DW = Drinking Water
 P = Product
 SW = Surface water
 SL = Sludge
 OW = Ocean/Sea Water
 WI = Wipe
 O = Oil
 WW = Waste Water
 A = Air

Field Comments

No. Field ID / Point of Collection

No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	CI	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Notes
1	T2-12'	12	5/3/17	10:30	5	1									TPH
2	T2-14'	14		10:35	1										BTEX
3	T2-19'	19		10:37	1										chloride
4	T2-24'	24		10:40	1										
5	T3-Surf			10:55	1										
6	T3-1'	1		11:00	1										X
7	T3-2'	2		11:03	1										X
8	T3-3'	3		11:05	1										X
9	T3-4'	4		11:08	1										X
10	T3-6'	6		11:10	1										X

Data Deliverable Information

Notes:

Turnaround Time (Business days)

Level II Std QC

FED-EX / UPS: Tracking #

Same Day TAT

5 Day TAT

Level IV (Full Data Pkg raw data)

Next Day EMERGENCY

7 Day TAT

Level III Std QC+ Forms

2 Day EMERGENCY

Contract TAT

Level 3 (CLP Forms)

3 Day EMERGENCY

TAT Starts Day received by Lab, if received by 5:00 pm

TRRP Checklist

Relinquished by Sampler:

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

Received By:

Date Time:

Received By:

Temp: 3.1 IR ID: R-9

Relinquished by:

Date Time:

Received By:

Date Time:

Received By:

Temp: 3.1 IR ID: R-9

Relinquished by:

Date Time:

Received By:

Date Time:

Received By:

Temp: 3.1 IR ID: R-9

Relinquished by:

Date Time:

Received By:

Date Time:

Received By:

Temp: 3.1 IR ID: R-9

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenoco. Its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenoco will be liable only for the cost of samples and shall not assume any responsibility for losses or expenses incurred by the Client if such losses are due to circumstances beyond the control of Xenoco. A minimum charge of \$75 will be applied to each project. Xenoco's liability will be limited to the cost of samples. Any samples received by Xenoco but not analyzed will be invoiced at \$5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.



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San Antonio, Texas (210-509-3334)
Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

CHAIN OF CUSTODY

Page 4 of 5

Client / Reporting Information							Project Information							Xenoco Quote #	Xenoco Job #	Matrix Codes	
Company Name / Branch: COG Operating LLC							Project Name/Number: SRO STATE COM #48H										
Company Address: 2407 PECOS Avenue Artesia NM 88210							Project Location:										
Email: aileen@concho.com dineez@concho.com nashkel@concho.com							Phone No: 575-748-1553										
Project Contact: Aaron Lieb							Invoice To: COG Operating LLC Attn: Robert McNeill 600 W. Illinois Midland TX 79701										
Sampler's Name: Aaron Lieb							PO Number:										
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix bottles	# of HCl	Number of preserved bottles						Analytical Information				
							NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE				
1	T3-8	8	5/3/17	11:45	5	1								TPH			
2	T3-10	10	5/3/17	11:50	1	1								BTEX			
3	T3-17	17	5/3/17	11:55	1	1								chloride			
4	T3-22	22	5/3/17	12:35	1	1											
5	T4-Surf	-	5/3/17	12:40	1	1											
6	T4-1'	1	5/3/17	12:42	1	1											
7	T4-2	2	5/3/17	12:45	1	1											
8	T4-3	3	5/3/17	12:50	1	1											
9	T4-4	4	5/3/17	12:55	1	1											
10	T4-8	6	5/3/17	12:58	1	1											
Turnaround Time (Business days)																Data Deliverable Information	Notes:
<input type="checkbox"/> Same Day TAT			<input type="checkbox"/> 5 Day TAT			<input type="checkbox"/> Level II Std QC			<input type="checkbox"/> Level IV (Full Data Pkg raw date)								
<input type="checkbox"/> Next Day EMERGENCY			<input type="checkbox"/> 7 Day TAT			<input type="checkbox"/> Level III Std QC+ Forms			<input type="checkbox"/> TRRP Level IV								
<input type="checkbox"/> 2 Day EMERGENCY			<input type="checkbox"/> Contract TAT			<input type="checkbox"/> Level 3 (CLP Forms)			<input type="checkbox"/> UST / RG -411								
<input type="checkbox"/> 3 Day EMERGENCY						<input type="checkbox"/> TRRP Checklist											
TAT Starts Day received by lab, if received by 5:00 pm																	
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY																	
Relinquished by Sampler:		Date Time:	Received By:		Date Time:	Relinquished By:		Date Time:	Received By:		Date Time:	Relinquished By:		Date Time:	Received By:		
Relinquished by: [Signature]		5/5/17 am	[Signature]		11:04am	[Signature]		5-5-17	Custody Seal #		4	Preserved where applicable		<input checked="" type="checkbox"/>	Qn Ice		
Relinquished by:		Date Time:	Received By:		Date Time:	Relinquished By:		Date Time:	Received By:		Date Time:	Relinquished By:		Date Time:	Received By:		
Relinquished by:																	
Relinquished by:		Date Time:	Received By:		Date Time:	Relinquished By:		Date Time:	Received By:		Date Time:	Relinquished By:		Date Time:	Received By:		
Relinquished by:																	
Relinquished by:		Date Time:	Received By:		Date Time:	Relinquished By:		Date Time:	Received By:		Date Time:	Relinquished By:		Date Time:	Received By:		
Relinquished by:																	
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Relinquished by:																	
Relinquished by:		Date Time:	Received By:		Date Time:	Relinquished By:		Date Time:	Received By:		Date Time:	Relinquished By:		Date Time:	Received By:		
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Relinquished by:		Date Time:	Received By:		Date Time:	Relinquished By:		Date Time:	Received By:		Date Time:	Relinquished By:		Date Time:	Received By:		
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Setting the Standard since 1990
Stafford, Texas (281-240-4200)
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CHAIN OF CUSTODY

Page 5 of 5

San Antonio, Texas (210-509-3334)
Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

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[illegible]



Client: COG Operating LLC

Date/ Time Received: 05/05/2017 11:00:00 AM

Work Order #: 552580

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R9

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	3.1
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seal present on shipping container/ cooler?	N/A
#5 *Custody Seals intact on shipping container/ cooler?	N/A
#6 Custody Seals intact on sample bottles?	N/A
#7 *Custody Seals Signed and dated?	N/A
#8 *Chain of Custody present?	Yes
#9 Sample instructions complete on Chain of Custody?	Yes
#10 Any missing/extra samples?	No
#11 Chain of Custody signed when relinquished/ received?	Yes
#12 Chain of Custody agrees with sample label(s)?	Yes
#13 Container label(s) legible and intact?	Yes
#14 Sample matrix/ properties agree with Chain of Custody?	Yes
#15 Samples in proper container/ bottle?	Yes
#16 Samples properly preserved?	Yes
#17 Sample container(s) intact?	Yes
#18 Sufficient sample amount for indicated test(s)?	Yes
#19 All samples received within hold time?	Yes
#20 Subcontract of sample(s)?	N/A
#21 VOC samples have zero headspace?	N/A
#22 <2 for all samples preserved with HNO ₃ , HCL, H ₂ SO ₄ ? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	N/A
#23 >10 for all samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH?	N/A

* Must be completed for after-hours delivery of samples prior to placing in the refrigerator

Analyst:

PH Device/Lot#:

Checklist completed by:

Jessica Kramer

Date: 05/08/2017

Checklist reviewed by:

Liz Givens

Date: 05/08/2017



Certificate of Analysis Summary 552581

COG Operating LLC, Artesia, NM

Project Name: SRO STATE COM #48H



Project Id:
Contact: Aaron Lieb
Project Location: SRO STATE COM #48H

Date Received in Lab: Fri May-05-17 11:00 am
Report Date: 15-MAY-17
Project Manager: Liz Givens

<i>Analysis Requested</i>	<i>Lab Id:</i>	<i>Field Id:</i>	<i>Depth:</i>	<i>Matrix:</i>	<i>Sampled:</i>	<i>552581-001</i>	<i>552581-002</i>	<i>552581-003</i>	<i>552581-004</i>
	<i>Extracted:</i>	<i>Analyzed:</i>	<i>Units/RL:</i>						
Inorganic Anions by EPA 300/300.1									
Chloride									

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

Brandi Ritcherson

Brandi Ritcherson
Project Manager

Analytical Report 552581

for
COG Operating LLC

Project Manager: Aaron Lieb

SRO STATE COM #48H

15-MAY-17

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
Oklahoma (9218)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400)
Xenco-San Antonio: Texas (T104704534)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)



15-MAY-17

Project Manager: **Aaron Lieb**

COG Operating LLC

2407 Pecos Avenue

Artesia, NM 88210

Reference: XENCO Report No(s): **552581**

SRO STATE COM #48H

Project Address: SRO STATE COM #48H

Aaron Lieb:

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) 552581. 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. 552581 will be filed for 60 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,

A handwritten signature in black ink that reads 'Brandi Ritcherson'.

Brandi Ritcherson

Project Manager

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**Sample Cross Reference 552581****COG Operating LLC, Artesia, NM**

SRO STATE COM #48H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BG-5'	S	05-03-17 13:30	- 5 ft	552581-001
BG-10'	S	05-03-17 13:35	- 10 ft	552581-002
BG-15'	S	05-03-17 13:40	- 15 ft	552581-003
BG-20'	S	05-03-17 13:45	- 20 ft	552581-004



CASE NARRATIVE

Client Name: COG Operating LLC

Project Name: SRO STATE COM #48H

Project ID:

Work Order Number(s): 552581

Report Date: 15-MAY-17

Date Received: 05/05/2017

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 552581

COG Operating LLC, Artesia, NM
SRO STATE COM #48HSample Id: **BG-5'**
Lab Sample Id: 552581-001Matrix: Soil
Date Collected: 05.03.17 13.30Date Received: 05.05.17 11.00
Sample Depth: 5 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.14.17 13.30

Basis: Wet Weight

Seq Number: 3017230

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<49.0	49.0	mg/kg	05.14.17 19.34	U	10



Certificate of Analytical Results 552581

COG Operating LLC, Artesia, NM
SRO STATE COM #48HSample Id: **BG-10'**
Lab Sample Id: 552581-002Matrix: Soil
Date Collected: 05.03.17 13.35Date Received: 05.05.17 11.00
Sample Depth: 10 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.14.17 13.30

Basis: Wet Weight

Seq Number: 3017230

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<24.4	24.4	mg/kg	05.14.17 19.42	U	5



Certificate of Analytical Results 552581

COG Operating LLC, Artesia, NM
SRO STATE COM #48HSample Id: **BG-15'**
Lab Sample Id: 552581-003Matrix: Soil
Date Collected: 05.03.17 13.40Date Received: 05.05.17 11.00
Sample Depth: 15 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.14.17 13.30

Basis: Wet Weight

Seq Number: 3017230

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<24.6	24.6	mg/kg	05.14.17 19.50	U	5



Certificate of Analytical Results 552581

COG Operating LLC, Artesia, NM
SRO STATE COM #48HSample Id: **BG-20'**
Lab Sample Id: 552581-004Matrix: Soil
Date Collected: 05.03.17 13.45Date Received: 05.05.17 11.00
Sample Depth: 20 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.14.17 13.30

Basis: Wet Weight

Seq Number: 3017230

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	47.6	4.99	mg/kg	05.14.17 20.12		1



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 **SQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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 5332 Blackberry Drive, San Antonio TX 78238
 1211 W Florida Ave, Midland, TX 79701
 2525 W. Huntington Dr. - Suite 102, Tempe AZ 85282

Phone	Fax
(281) 240-4200	(281) 240-4280
(214) 902 0300	(214) 351-9139
(210) 509-3334	(210) 509-3335
(432) 563-1800	(432) 563-1713
(602) 437-0330	



COG Operating LLC
SRO STATE COM #48H

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3017230

Matrix: Solid

Prep Method: E300P

MB Sample Id: 724559-1-BLK

LCS Sample Id: 724559-1-BKS

Date Prep: 05.14.17

LCSD Sample Id: 724559-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	255	102	253	101	90-110	1	20	mg/kg	05.14.17 18:49	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3017230

Matrix: Soil

Prep Method: E300P

Parent Sample Id: 552580-041

MS Sample Id: 552580-041 S

Date Prep: 05.14.17

MSD Sample Id: 552580-041 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	14.8	250	299	114	289	110	90-110	3	20	mg/kg	05.14.17 19:12	X

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3017230

Matrix: Soil

Prep Method: E300P

Parent Sample Id: 552582-005

MS Sample Id: 552582-005 S

Date Prep: 05.14.17

MSD Sample Id: 552582-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	26.8	244	311	116	296	110	90-110	5	20	mg/kg	05.14.17 20:58	X

[illegible]

Notice: Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenico, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenico will be liable only for the cost of samples and shall not assume any responsibility for a loss or expenses incurred by the Client if such losses are due to circumstances beyond the control of Xenico. A minimum charge of \$75 will be applied to each project. Xenico's liability will be limited to the cost of samples. Any samples received by Xenico but not analyzed will be invoiced at \$5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.



Client: COG Operating LLC

Date/ Time Received: 05/05/2017 11:00:00 AM

Work Order #: 552581

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R9

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	3.1
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seal present on shipping container/ cooler?	N/A
#5 *Custody Seals intact on shipping container/ cooler?	N/A
#6 Custody Seals intact on sample bottles?	N/A
#7 *Custody Seals Signed and dated?	N/A
#8 *Chain of Custody present?	Yes
#9 Sample instructions complete on Chain of Custody?	Yes
#10 Any missing/extra samples?	No
#11 Chain of Custody signed when relinquished/ received?	Yes
#12 Chain of Custody agrees with sample label(s)?	Yes
#13 Container label(s) legible and intact?	Yes
#14 Sample matrix/ properties agree with Chain of Custody?	Yes
#15 Samples in proper container/ bottle?	Yes
#16 Samples properly preserved?	Yes
#17 Sample container(s) intact?	Yes
#18 Sufficient sample amount for indicated test(s)?	Yes
#19 All samples received within hold time?	Yes
#20 Subcontract of sample(s)?	N/A
#21 VOC samples have zero headspace?	N/A
#22 <2 for all samples preserved with HNO ₃ , HCL, H ₂ SO ₄ ? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	N/A
#23 >10 for all samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH?	N/A

* Must be completed for after-hours delivery of samples prior to placing in the refrigerator

Analyst:

PH Device/Lot#:

Checklist completed by:

Jessica Kramer

Date: 05/08/2017

Checklist reviewed by:

Liz Givens

Date: 05/08/2017



Certificate of Analysis Summary 552582

COG Operating LLC, Artesia, NM

Project Name: SRO State Com #48H



Date Received in Lab: Fri May-05-17 11:00 am
Report Date: 15-MAY-17
Project Manager: Liz Givens

Project Id: Aaron Lieb
Contact: SRO State Com #48H
Project Location:

Analysis Requested		Lab Id:	Field Id:	Depth:	Matrix:	Sampled:	552582-001	552582-002	552582-003	552582-004	552582-005	552582-006
							North-Surf	North-1'	East-Surf	East-1'	West-Surf	West-1'
							SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
							May-03-17 13:55	May-03-17 13:55	May-03-17 14:05	May-03-17 14:10	May-03-17 14:20	May-03-17 14:25
BTEX by EPA 8021B		Extracted:	May-08-17 09:00				May-08-17 09:00	May-08-17 16:00	May-08-17 16:00	May-08-17 16:00	May-08-17 16:00	May-08-17 16:00
		Analyzed:	May-09-17 02:35				May-09-17 02:35	May-09-17 12:23	May-09-17 08:51	May-09-17 12:40	May-09-17 12:56	May-09-17 13:12
		Units/RL:	mg/kg	RL			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Benzene			<0.00339	0.00339			<0.00339	<0.00201	<0.00200	<0.00202	<0.00199	<0.00200
Toluene			<0.00339	0.00339			<0.00339	<0.00201	<0.00200	<0.00202	<0.00199	<0.00200
Ethylbenzene			<0.00339	0.00339			<0.00339	<0.00201	<0.00200	<0.00202	<0.00199	<0.00200
m,p-Xylenes			<0.00678	0.00678			<0.00678	<0.00402	<0.00399	<0.00404	<0.00398	<0.00399
o-Xylene			<0.00339	0.00339			<0.00339	<0.00201	<0.00200	<0.00202	<0.00199	<0.00200
Total Xylenes			<0.00339	0.00339			<0.00339	<0.00201	<0.00200	<0.00202	<0.00199	<0.00200
Total BTEX			<0.00339	0.00339			<0.00339	<0.00201	<0.00200	<0.00202	<0.00199	<0.00200
Inorganic Anions by EPA 300/300.1		Extracted:	May-14-17 13:30				May-14-17 13:30	May-14-17 13:30	May-14-17 13:30	May-14-17 13:30	May-14-17 13:30	May-14-17 13:30
		Analyzed:	May-14-17 20:20				May-14-17 20:20	May-14-17 20:28	May-14-17 20:35	May-14-17 20:43	May-14-17 20:50	May-14-17 21:13
		Units/RL:	mg/kg	RL			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Chloride			13.7	4.95			<4.93	4.93	20.0	6.90	26.8	<4.99
TPH By SW8015 Mod		Extracted:	May-09-17 07:00				May-09-17 07:00	May-09-17 07:00	May-09-17 07:00	May-09-17 07:00	May-09-17 07:00	May-09-17 07:00
		Analyzed:	May-09-17 08:50				May-09-17 08:50	May-09-17 09:52	May-09-17 10:12	May-09-17 10:32	May-09-17 10:52	May-09-17 11:11
		Units/RL:	mg/kg	RL			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
C6-C10 Gasoline Range Hydrocarbons			<15.0	15.0			<15.0	15.0	<15.0	15.0	<15.0	<15.0
C10-C28 Diesel Range Hydrocarbons			<15.0	15.0			<15.0	15.0	<15.0	15.0	<15.0	<15.0
Total TPH			<15.0	15.0			<15.0	15.0	<15.0	15.0	<15.0	<15.0

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.

Brandi Ritcherson

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

Brandi Ritcherson
Project Manager

Analytical Report 552582

for
COG Operating LLC

Project Manager: Aaron Lieb

SRO State Com #48H

15-MAY-17

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
Oklahoma (9218)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400)
Xenco-San Antonio: Texas (T104704534)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)



15-MAY-17

Project Manager: **Aaron Lieb**

COG Operating LLC

2407 Pecos Avenue

Artesia, NM 88210

Reference: XENCO Report No(s): **552582**

SRO State Com #48H

Project Address: SRO State Com #48H

Aaron Lieb:

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) 552582. 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. 552582 will be filed for 60 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,

A handwritten signature in black ink that reads 'Brandi Ritcherson'.

Brandi Ritcherson

Project Manager

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**Sample Cross Reference 552582****COG Operating LLC, Artesia, NM**

SRO State Com #48H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
North-Surf	S	05-03-17 13:55	N/A	552582-001
North-1'	S	05-03-17 13:55	- 1 ft	552582-002
East-Surf	S	05-03-17 14:05	N/A	552582-003
East-1'	S	05-03-17 14:10	- 1 ft	552582-004
West-Surf	S	05-03-17 14:20	N/A	552582-005
West-1'	S	05-03-17 14:25	- 1 ft	552582-006

**CASE NARRATIVE****Client Name: COG Operating LLC****Project Name: SRO State Com #48H**

Project ID:
Work Order Number(s): 552582

Report Date: 15-MAY-17
Date Received: 05/05/2017

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3016772 BTEX by EPA 8021B

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

Batch: LBA-3017044 BTEX by EPA 8021B

Lab Sample ID 552582-003 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 and Matrix Spike Duplicate. Benzene recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 552582-002, -003, -004, -005, -006.

The Laboratory Control Sample for Toluene, Benzene, m,p-Xylenes, Ethylbenzene, o-Xylene is within laboratory Control Limits, therefore the data was accepted.

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

Benzene, Ethylbenzene, Toluene, 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: 552582-002, -003, -004, -005, -006

Batch: LBA-3017230 Inorganic Anions by EPA 300/300.1

Lab Sample ID 552582-005 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 552582-001, -002, -003, -004, -005, -006.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.



Certificate of Analytical Results 552582

COG Operating LLC, Artesia, NM

SRO State Com #48H

Sample Id: North-Surf

Matrix: Soil

Date Received: 05.05.17 11.00

Lab Sample Id: 552582-001

Date Collected: 05.03.17 13.55

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.14.17 13.30

Basis: Wet Weight

Seq Number: 3017230

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	13.7	4.95	mg/kg	05.14.17 20.20		1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 05.09.17 07.00

Basis: Wet Weight

Seq Number: 3016886

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	05.09.17 08.50	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	<15.0	15.0	mg/kg	05.09.17 08.50	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.09.17 08.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	05.09.17 08.50	
o-Terphenyl	84-15-1	97	%	70-135	05.09.17 08.50	

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 05.08.17 09.00

Basis: Wet Weight

Seq Number: 3016772

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00339	0.00339	mg/kg	05.09.17 02.35	U	1
Toluene	108-88-3	<0.00339	0.00339	mg/kg	05.09.17 02.35	U	1
Ethylbenzene	100-41-4	<0.00339	0.00339	mg/kg	05.09.17 02.35	U	1
m,p-Xylenes	179601-23-1	<0.00678	0.00678	mg/kg	05.09.17 02.35	U	1
o-Xylene	95-47-6	<0.00339	0.00339	mg/kg	05.09.17 02.35	U	1
Total Xylenes	1330-20-7	<0.00339	0.00339	mg/kg	05.09.17 02.35	U	1
Total BTEX		<0.00339	0.00339	mg/kg	05.09.17 02.35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	99	%	80-120	05.09.17 02.35	
1,4-Difluorobenzene	540-36-3	108	%	80-120	05.09.17 02.35	



Certificate of Analytical Results 552582

COG Operating LLC, Artesia, NM

SRO State Com #48H

Sample Id: **North-1'**
 Lab Sample Id: 552582-002

Matrix: Soil
 Date Collected: 05.03.17 13.55

Date Received: 05.05.17 11.00
 Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MGO

Analyst: MGO

Seq Number: 3017230

Date Prep: 05.14.17 13.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.93	4.93	mg/kg	05.14.17 20.28	U	1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3016886

Date Prep: 05.09.17 07.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	05.09.17 09.52	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	<15.0	15.0	mg/kg	05.09.17 09.52	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.09.17 09.52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	05.09.17 09.52	
o-Terphenyl	84-15-1	101	%	70-135	05.09.17 09.52	

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3017044

Date Prep: 05.08.17 16.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	05.09.17 12.23	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	05.09.17 12.23	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	05.09.17 12.23	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	05.09.17 12.23	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	05.09.17 12.23	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	05.09.17 12.23	U	1
Total BTEX		<0.00201	0.00201	mg/kg	05.09.17 12.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	118	%	80-120	05.09.17 12.23	
1,4-Difluorobenzene	540-36-3	112	%	80-120	05.09.17 12.23	



Certificate of Analytical Results 552582

COG Operating LLC, Artesia, NM

SRO State Com #48H

Sample Id: **East-Surf**
 Lab Sample Id: 552582-003

Matrix: Soil
 Date Collected: 05.03.17 14.05

Date Received: 05.05.17 11.00

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.14.17 13.30

Basis: Wet Weight

Seq Number: 3017230

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	20.0	4.87	mg/kg	05.14.17 20.35		1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 05.09.17 07.00

Basis: Wet Weight

Seq Number: 3016886

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	05.09.17 10.12	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	<15.0	15.0	mg/kg	05.09.17 10.12	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.09.17 10.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	05.09.17 10.12	
o-Terphenyl	84-15-1	98	%	70-135	05.09.17 10.12	

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 05.08.17 16.00

Basis: Wet Weight

Seq Number: 3017044

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.09.17 08.51	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.09.17 08.51	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.09.17 08.51	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	05.09.17 08.51	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.09.17 08.51	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.09.17 08.51	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.09.17 08.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	102	%	80-120	05.09.17 08.51	
4-Bromofluorobenzene	460-00-4	86	%	80-120	05.09.17 08.51	



Certificate of Analytical Results 552582

COG Operating LLC, Artesia, NM

SRO State Com #48H

Sample Id: **East-1'**
 Lab Sample Id: 552582-004

Matrix: Soil
 Date Collected: 05.03.17 14.10

Date Received: 05.05.17 11.00
 Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MGO

Analyst: MGO

Seq Number: 3017230

Date Prep: 05.14.17 13.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.90	4.87	mg/kg	05.14.17 20.43		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3016886

Date Prep: 05.09.17 07.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	05.09.17 10.32	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	<15.0	15.0	mg/kg	05.09.17 10.32	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.09.17 10.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	05.09.17 10.32	
o-Terphenyl	84-15-1	100	%	70-135	05.09.17 10.32	

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3017044

Date Prep: 05.08.17 16.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	05.09.17 12.40	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	05.09.17 12.40	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	05.09.17 12.40	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	05.09.17 12.40	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	05.09.17 12.40	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	05.09.17 12.40	U	1
Total BTEX		<0.00202	0.00202	mg/kg	05.09.17 12.40	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	95	%	80-120	05.09.17 12.40	
1,4-Difluorobenzene	540-36-3	107	%	80-120	05.09.17 12.40	



Certificate of Analytical Results 552582



COG Operating LLC, Artesia, NM

SRO State Com #48H

Sample Id: **West-Surf**

Matrix: Soil

Date Received: 05.05.17 11.00

Lab Sample Id: 552582-005

Date Collected: 05.03.17 14.20

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.14.17 13.30

Basis: Wet Weight

Seq Number: 3017230

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	26.8	4.88	mg/kg	05.14.17 20.50		1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 05.09.17 07.00

Basis: Wet Weight

Seq Number: 3016886

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	05.09.17 10.52	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	<15.0	15.0	mg/kg	05.09.17 10.52	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.09.17 10.52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	05.09.17 10.52	
o-Terphenyl	84-15-1	99	%	70-135	05.09.17 10.52	

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 05.08.17 16.00

Basis: Wet Weight

Seq Number: 3017044

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	05.09.17 12.56	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	05.09.17 12.56	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	05.09.17 12.56	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	05.09.17 12.56	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	05.09.17 12.56	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	05.09.17 12.56	U	1
Total BTEX		<0.00199	0.00199	mg/kg	05.09.17 12.56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	102	%	80-120	05.09.17 12.56	
1,4-Difluorobenzene	540-36-3	111	%	80-120	05.09.17 12.56	



Certificate of Analytical Results 552582

COG Operating LLC, Artesia, NM

SRO State Com #48H

Sample Id: **West-1'**
 Lab Sample Id: 552582-006

Matrix: Soil
 Date Collected: 05.03.17 14.25

Date Received: 05.05.17 11.00
 Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MGO

Analyst: MGO

Seq Number: 3017230

Date Prep: 05.14.17 13.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.99	4.99	mg/kg	05.14.17 21.13	U	1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3016886

Date Prep: 05.09.17 07.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	05.09.17 11.11	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	<15.0	15.0	mg/kg	05.09.17 11.11	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.09.17 11.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	05.09.17 11.11	
o-Terphenyl	84-15-1	98	%	70-135	05.09.17 11.11	

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3017044

Date Prep: 05.08.17 16.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.09.17 13.12	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.09.17 13.12	U	1
Ethylbenzene	100-41-4	0.00238	0.00200	mg/kg	05.09.17 13.12		1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	05.09.17 13.12	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.09.17 13.12	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.09.17 13.12	U	1
Total BTEX		0.00238	0.00200	mg/kg	05.09.17 13.12		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	119	%	80-120	05.09.17 13.12	
1,4-Difluorobenzene	540-36-3	118	%	80-120	05.09.17 13.12	



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 **SQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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(602) 437-0330	



COG Operating LLC
SRO State Com #48H

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3017230

Matrix: Solid

Prep Method: E300P

MB Sample Id: 724559-1-BLK

LCS Sample Id: 724559-1-BKS

Date Prep: 05.14.17

LCSD Sample Id: 724559-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	255	102	253	101	90-110	1	20	mg/kg	05.14.17 18:49	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3017230

Matrix: Soil

Prep Method: E300P

Parent Sample Id: 552580-041

MS Sample Id: 552580-041 S

Date Prep: 05.14.17

MSD Sample Id: 552580-041 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	14.8	250	299	114	289	110	90-110	3	20	mg/kg	05.14.17 19:12	X

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3017230

Matrix: Soil

Prep Method: E300P

Parent Sample Id: 552582-005

MS Sample Id: 552582-005 S

Date Prep: 05.14.17

MSD Sample Id: 552582-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	26.8	244	311	116	296	110	90-110	5	20	mg/kg	05.14.17 20:58	X

Analytical Method: TPH By SW8015 Mod

Seq Number: 3016886

Matrix: Solid

Prep Method: TX1005P

MB Sample Id: 724310-1-BLK

LCS Sample Id: 724310-1-BKS

Date Prep: 05.09.17

LCSD Sample Id: 724310-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	958	96	973	97	70-135	2	35	mg/kg	05.09.17 08:07	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	983	98	946	95	70-135	4	35	mg/kg	05.09.17 08:07	

Surrogate

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	99		98		102		70-135	%	05.09.17 08:07
o-Terphenyl	106		94		100		70-135	%	05.09.17 08:07



COG Operating LLC
SRO State Com #48H

Analytical Method: TPH By SW8015 Mod

Seq Number: 3016886

Parent Sample Id: 552582-001

Matrix: Soil

MS Sample Id: 552582-001 S

Prep Method: TX1005P

Date Prep: 05.09.17

MSD Sample Id: 552582-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	970	97	959	96	70-135	1	35	mg/kg	05.09.17 09:11	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	960	96	954	96	70-135	1	35	mg/kg	05.09.17 09:11	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	97		95		70-135	%	05.09.17 09:11
o-Terphenyl	96		89		70-135	%	05.09.17 09:11

Analytical Method: BTEX by EPA 8021B

Seq Number: 3016772

MB Sample Id: 724253-1-BLK

Matrix: Solid

LCS Sample Id: 724253-1-BKS

Prep Method: SW5030B

Date Prep: 05.08.17

LCSD Sample Id: 724253-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0994	0.0954	96	0.0967	97	70-130	1	35	mg/kg	05.08.17 19:22	
Toluene	<0.00199	0.0994	0.0995	100	0.111	111	70-130	11	35	mg/kg	05.08.17 19:22	
Ethylbenzene	<0.00199	0.0994	0.0915	92	0.0937	94	71-129	2	35	mg/kg	05.08.17 19:22	
m,p-Xylenes	<0.00398	0.199	0.180	90	0.182	91	70-135	1	35	mg/kg	05.08.17 19:22	
o-Xylene	<0.00199	0.0994	0.0944	95	0.0975	98	71-133	3	35	mg/kg	05.08.17 19:22	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	119		101		104		80-120	%	05.08.17 19:22
4-Bromofluorobenzene	110		101		103		80-120	%	05.08.17 19:22

Analytical Method: BTEX by EPA 8021B

Seq Number: 3017044

MB Sample Id: 724323-1-BLK

Matrix: Solid

LCS Sample Id: 724323-1-BKS

Prep Method: SW5030B

Date Prep: 05.08.17

LCSD Sample Id: 724323-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0942	94	0.0942	94	70-130	0	35	mg/kg	05.09.17 07:15	
Toluene	<0.00200	0.0998	0.0964	97	0.101	101	70-130	5	35	mg/kg	05.09.17 07:15	
Ethylbenzene	<0.00200	0.0998	0.0938	94	0.0898	90	71-129	4	35	mg/kg	05.09.17 07:15	
m,p-Xylenes	<0.00399	0.200	0.186	93	0.186	93	70-135	0	35	mg/kg	05.09.17 07:15	
o-Xylene	<0.00200	0.0998	0.0996	100	0.103	103	71-133	3	35	mg/kg	05.09.17 07:15	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		97		101		80-120	%	05.09.17 07:15
4-Bromofluorobenzene	92		85		106		80-120	%	05.09.17 07:15



COG Operating LLC
SRO State Com #48H

Analytical Method: BTEX by EPA 8021B

Seq Number: 3016772

Parent Sample Id: 552561-001

Matrix: Soil

MS Sample Id: 552561-001 S

Prep Method: SW5030B

Date Prep: 05.08.17

MSD Sample Id: 552561-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0743	74	0.0770	76	70-130	4	35	mg/kg	05.08.17 19:54	
Toluene	<0.00202	0.101	0.0704	70	0.0884	88	70-130	23	35	mg/kg	05.08.17 19:54	
Ethylbenzene	0.00751	0.101	0.0627	55	0.0780	70	71-129	22	35	mg/kg	05.08.17 19:54	X
m,p-Xylenes	0.0417	0.202	0.151	54	0.162	60	70-135	7	35	mg/kg	05.08.17 19:54	X
o-Xylene	0.0179	0.101	0.0868	68	0.0875	69	71-133	1	35	mg/kg	05.08.17 19:54	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	120		118		80-120	%	05.08.17 19:54
4-Bromofluorobenzene	116		112		80-120	%	05.08.17 19:54

Analytical Method: BTEX by EPA 8021B

Seq Number: 3017044

Parent Sample Id: 552582-003

Matrix: Soil

MS Sample Id: 552582-003 S

Prep Method: SW5030B

Date Prep: 05.08.17

MSD Sample Id: 552582-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0725	73	0.0485	48	70-130	40	35	mg/kg	05.09.17 07:47	XF
Toluene	<0.00200	0.0998	0.0639	64	0.0348	34	70-130	59	35	mg/kg	05.09.17 07:47	XF
Ethylbenzene	<0.00200	0.0998	0.0539	54	0.0289	29	71-129	60	35	mg/kg	05.09.17 07:47	XF
m,p-Xylenes	<0.00399	0.200	0.105	53	0.0505	25	70-135	70	35	mg/kg	05.09.17 07:47	XF
o-Xylene	<0.00200	0.0998	0.0597	60	0.0353	35	71-133	51	35	mg/kg	05.09.17 07:47	XF

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	112		91		80-120	%	05.09.17 07:47
4-Bromofluorobenzene	105		95		80-120	%	05.09.17 07:47



Setting the Standard since 1990
 Stafford, Texas (281-240-4200)
 Dallas Texas (214-902-0300)

CHAIN OF CUSTODY

Page 1 of 1

San Antonio, Texas (210-509-3334)
 Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

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Xenco Quote #

Xenco Job #

552582

Client / Reporting Information				Project Information				Analytical Information		Matrix Codes					
Company Name / Branch: COG Operating LLC Company Address: 2407 PECOS Avenue Artesia NM 88210				Project Name/Number: SRO STATE COM #48H Project Location: SRO STATE COM #											
Email: alieb@concho.com Phone No: 575-748-1553 dneel12@concho.com naskell@concho.com				Invoice To: COG Operating LLC Attn: Robert McNeill 600 W. Illinois Midland TX 79701											
Project Contact: Aaron Lieb				PO Number:											
Sampler's Name: Aaron Lieb															
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCI	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Field Comments
1	North - Surf	Surf	5/31/17	11:55pm	S	1									TPH
2	North - 1'	1'													BTEX
3															Chloride
4	East - Surf	Surf		2:05		1									X
5	East - 1'	1'		2:10pm		1									X
6															X
7	West - Surf	Surf		2:20		1									X
8	West - 1'	1'		2:25pm		1									X
9															X
10															
Turnaround Time (Business days)															
Data Deliverable Information															
Notes:															
<input type="checkbox"/> Same Day TAT <input type="checkbox"/> 5 Day TAT <input type="checkbox"/> Level II Std QC <input type="checkbox"/> Level IV (Full Data Pkg raw data) <input type="checkbox"/> Next Day EMERGENCY <input type="checkbox"/> 7 Day TAT <input type="checkbox"/> Level III Std QC+ Forms <input type="checkbox"/> TRRP Level IV <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> Contract TAT <input type="checkbox"/> Level 3 (CLP Forms) <input type="checkbox"/> UST / RG -411 <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> TRRP Checklist															
TAT Starts Day received by Lab, if received by 5:00 pm															
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY															
FED-EX / UPS: Tracking #															
Relinquished by Sampler:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:		Date Time:	
1		5/31/17		11:00 AM		11:00 AM		5-5-17		2		5/31/17		11:00 AM	
Relinquished by:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:		Date Time:	
3		5/31/17		11:00 AM		11:00 AM		5-5-17		4		5/31/17		11:00 AM	
Relinquished by:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:		Date Time:	
5		5/31/17		11:00 AM		11:00 AM		5-5-17		6		5/31/17		11:00 AM	
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Client: COG Operating LLC

Date/ Time Received: 05/05/2017 11:00:00 AM

Work Order #: 552582

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R9

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	3.1
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seal present on shipping container/ cooler?	N/A
#5 *Custody Seals intact on shipping container/ cooler?	N/A
#6 Custody Seals intact on sample bottles?	N/A
#7 *Custody Seals Signed and dated?	N/A
#8 *Chain of Custody present?	Yes
#9 Sample instructions complete on Chain of Custody?	Yes
#10 Any missing/extra samples?	No
#11 Chain of Custody signed when relinquished/ received?	Yes
#12 Chain of Custody agrees with sample label(s)?	Yes
#13 Container label(s) legible and intact?	Yes
#14 Sample matrix/ properties agree with Chain of Custody?	Yes
#15 Samples in proper container/ bottle?	Yes
#16 Samples properly preserved?	Yes
#17 Sample container(s) intact?	Yes
#18 Sufficient sample amount for indicated test(s)?	Yes
#19 All samples received within hold time?	Yes
#20 Subcontract of sample(s)?	N/A
#21 VOC samples have zero headspace?	N/A
#22 <2 for all samples preserved with HNO ₃ , HCL, H ₂ SO ₄ ? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	N/A
#23 >10 for all samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH?	N/A

* Must be completed for after-hours delivery of samples prior to placing in the refrigerator

Analyst:

PH Device/Lot#:

Checklist completed by:

Jessica Kramer

Date: 05/08/2017

Checklist reviewed by:

Liz Givens

Date: 05/08/2017



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

September 07, 2017

Cliff Brunson

BBC International, Inc.

P.O. Box 805

Hobbs, NM 88241

RE: SRO STATE COM #48H

Enclosed are the results of analyses for samples received by the laboratory on 08/31/17 16:34.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

BBC International, Inc.
 Cliff Brunson
 P.O. Box 805
 Hobbs NM, 88241
 Fax To: (575) 397-0397

Received:	08/31/2017	Sampling Date:	08/25/2017
Reported:	09/07/2017	Sampling Type:	Soil
Project Name:	SRO STATE COM #48H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - MALAGA		

Sample ID: SP1 @ 1 (H702335-01)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/05/2017	ND	1.93	96.6	2.00	0.458	
Toluene*	<0.050	0.050	09/05/2017	ND	1.93	96.6	2.00	0.872	
Ethylbenzene*	<0.050	0.050	09/05/2017	ND	2.06	103	2.00	0.713	
Total Xylenes*	<0.150	0.150	09/05/2017	ND	6.13	102	6.00	0.591	
Total BTX	<0.300	0.300	09/05/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	9800	16.0	09/06/2017	ND	448	112	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	09/05/2017	ND	185	92.4	200	3.24	
DRO >C10-C28	<10.0	10.0	09/05/2017	ND	186	92.8	200	2.95	
EXT DRO >C28-C36	<10.0	10.0	09/05/2017	ND					

Surrogate: 1-Chlorooctane 95.3 % 28.3-164

Surrogate: 1-Chlorooctadecane 94.8 % 34.7-157

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

BBC International, Inc.
 Cliff Brunson
 P.O. Box 805
 Hobbs NM, 88241
 Fax To: (575) 397-0397

Received:	08/31/2017	Sampling Date:	08/25/2017
Reported:	09/07/2017	Sampling Type:	Soil
Project Name:	SRO STATE COM #48H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - MALAGA		

Sample ID: SP1 @ 3 (H702335-02)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	8800	16.0	09/06/2017	ND	448	112	400	3.64	

Sample ID: SP1 @ 6 (H702335-03)

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	6100	16.0	09/06/2017	ND	448	112	400	3.64	

Sample ID: SP1 @ 9 (H702335-04)

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	8900	16.0	09/06/2017	ND	448	112	400	3.64		

Sample ID: SP1 @ 12 (H702335-05)

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	9800	16.0	09/06/2017	ND	448	112	400	3.64		

Sample ID: SP1 @ 16 (H702335-06)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	4400	16.0	09/06/2017	ND	448	112	400	3.64	

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Analytical Results For:

BBC International, Inc.
 Cliff Brunson
 P.O. Box 805
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 Fax To: (575) 397-0397

Received:	08/31/2017	Sampling Date:	08/25/2017
Reported:	09/07/2017	Sampling Type:	Soil
Project Name:	SRO STATE COM #48H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - MALAGA		

Sample ID: SP1 @ 18 (H702335-07)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	5920	16.0	09/06/2017	ND	448	112	400	3.64		

Sample ID: SP2 @ 1 (H702335-08)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	10700	16.0	09/06/2017	ND	448	112	400	3.64		

Sample ID: SP2 @ 3 (H702335-09)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	8700	16.0	09/06/2017	ND	448	112	400	3.64		

Sample ID: SP2 @ 6 (H702335-10)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	6800	16.0	09/06/2017	ND	416	104	400	3.77	QM-07	

Sample ID: SP2 @ 9 (H702335-11)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	7600	16.0	09/06/2017	ND	416	104	400	3.77		

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Analytical Results For:

BBC International, Inc.
 Cliff Brunson
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 Fax To: (575) 397-0397

Received:	08/31/2017	Sampling Date:	08/28/2017
Reported:	09/07/2017	Sampling Type:	Soil
Project Name:	SRO STATE COM #48H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - MALAGA		

Sample ID: SP2 @ 12 (H702335-12)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	11400	16.0	09/06/2017	ND	416	104	400	3.77		

Sample ID: SP2 @ 16 (H702335-13)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2200	16.0	09/06/2017	ND	416	104	400	3.77		

Sample ID: SP2 @ 18 (H702335-14)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1280	16.0	09/06/2017	ND	416	104	400	3.77		

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Analytical Results For:

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Received:	08/31/2017	Sampling Date:	08/28/2017
Reported:	09/07/2017	Sampling Type:	Soil
Project Name:	SRO STATE COM #48H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - MALAGA		

Sample ID: SP3 @ 1 (H702335-15)

BTX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/06/2017	ND	1.82	90.8	2.00	0.313		
Toluene*	<0.050	0.050	09/06/2017	ND	1.83	91.3	2.00	0.0863		
Ethylbenzene*	<0.050	0.050	09/06/2017	ND	1.94	97.0	2.00	0.633		
Total Xylenes*	<0.150	0.150	09/06/2017	ND	5.78	96.3	6.00	0.918		
Total BTX	<0.300	0.300	09/06/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.4 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	11200	16.0	09/07/2017	ND	416	104	400	3.77		

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	09/05/2017	ND	185	92.4	200	3.24	
DRO >C10-C28	<10.0	10.0	09/05/2017	ND	186	92.8	200	2.95	
EXT DRO >C28-C36	<10.0	10.0	09/05/2017	ND					

Surrogate: 1-Chlorooctane 84.2 % 28.3-164

Surrogate: 1-Chlorooctadecane 92.4 % 34.7-157

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Analytical Results For:

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 P.O. Box 805
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 Fax To: (575) 397-0397

Received:	08/31/2017	Sampling Date:	08/28/2017
Reported:	09/07/2017	Sampling Type:	Soil
Project Name:	SRO STATE COM #48H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - MALAGA		

Sample ID: SP3 @ 3 (H702335-16)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	10800	16.0	09/07/2017	ND	416	104	400	3.77		

Sample ID: SP3 @ 6 (H702335-17)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	9000	16.0	09/07/2017	ND	416	104	400	3.77	

Sample ID: SP3 @ 9 (H702335-18)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	3200	16.0	09/07/2017	ND	416	104	400	3.77		

Sample ID: SP3 @ 12 (H702335-19)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	656	16.0	09/07/2017	ND	416	104	400	3.77		

Sample ID: SP3 @ 16 (H702335-20)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	400	16.0	09/07/2017	ND	416	104	400	3.77	

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Analytical Results For:

BBC International, Inc.
 Cliff Brunson
 P.O. Box 805
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 Fax To: (575) 397-0397

Received:	08/31/2017	Sampling Date:	08/28/2017
Reported:	09/07/2017	Sampling Type:	Soil
Project Name:	SRO STATE COM #48H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - MALAGA		

Sample ID: SP3 @ 18 (H702335-21)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	368	16.0	09/07/2017	ND	416	104	400	3.77		

Sample ID: SP4 @ 1 (H702335-22)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	38400	16.0	09/07/2017	ND	416	104	400	3.77		

Sample ID: SP4 @ 3 (H702335-23)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1570	16.0	09/07/2017	ND	416	104	400	3.77		

Sample ID: SP4 @ 6 (H702335-24)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	7300	16.0	09/07/2017	ND	416	104	400	3.77		

Sample ID: SP4 @ 9 (H702335-25)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	8300	16.0	09/07/2017	ND	416	104	400	3.77		

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Analytical Results For:

BBC International, Inc.
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 Hobbs NM, 88241
 Fax To: (575) 397-0397

Received: 08/31/2017
 Reported: 09/07/2017
 Project Name: SRO STATE COM #48H
 Project Number: NONE GIVEN
 Project Location: COG - MALAGA

Sampling Date: 08/28/2017
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP4 @ 12 (H702335-26)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	6200	16.0	09/07/2017	ND	416	104	400	3.77		

Sample ID: SP4 @ 16 (H702335-27)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	5300	16.0	09/07/2017	ND	416	104	400	3.77		

Sample ID: SP4 @ 18 (H702335-28)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	4100	16.0	09/07/2017	ND	416	104	400	3.77		

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Analytical Results For:

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 Fax To: (575) 397-0397

Received:	08/31/2017	Sampling Date:	08/28/2017
Reported:	09/07/2017	Sampling Type:	Soil
Project Name:	SRO STATE COM #48H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - MALAGA		

Sample ID: SP5 @ 1 (H702335-29)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/06/2017	ND	1.82	90.8	2.00	0.313	
Toluene*	<0.050	0.050	09/06/2017	ND	1.83	91.3	2.00	0.0863	
Ethylbenzene*	<0.050	0.050	09/06/2017	ND	1.94	97.0	2.00	0.633	
Total Xylenes*	<0.150	0.150	09/06/2017	ND	5.78	96.3	6.00	0.918	
Total BTX	<0.300	0.300	09/06/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.5 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	34800	16.0	09/07/2017	ND	416	104	400	3.77		

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	09/05/2017	ND	185	92.4	200	3.24	
DRO >C10-C28	11.8	10.0	09/05/2017	ND	186	92.8	200	2.95	
EXT DRO >C28-C36	<10.0	10.0	09/05/2017	ND					

Surrogate: 1-Chlorooctane 92.6 % 28.3-164

Surrogate: 1-Chlorooctadecane 98.5 % 34.7-157

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 Fax To: (575) 397-0397

Received:	08/31/2017	Sampling Date:	08/28/2017
Reported:	09/07/2017	Sampling Type:	Soil
Project Name:	SRO STATE COM #48H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - MALAGA		

Sample ID: SP5 @ 3 (H702335-30)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1840	16.0	09/07/2017	ND	416	104	400	3.77		

Sample ID: SP5 @ 6 (H702335-31)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	7000	16.0	09/07/2017	ND	416	104	400	3.77		

Sample ID: SP5 @ 9 (H702335-32)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	8000	16.0	09/07/2017	ND	416	104	400	3.77		

Sample ID: SP5 @ 12 (H702335-33)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	6400	16.0	09/07/2017	ND	416	104	400	3.77		

Sample ID: SP5 @ 16 (H702335-34)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	5900	16.0	09/07/2017	ND	416	104	400	3.77		

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Received:	08/31/2017	Sampling Date:	08/28/2017
Reported:	09/07/2017	Sampling Type:	Soil
Project Name:	SRO STATE COM #48H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - MALAGA		

Sample ID: SP5 @ 18 (H702335-35)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	5500	16.0	09/07/2017	ND	416	104	400	3.77		

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Celey D. Keene, Lab Director/Quality Manager



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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:	08/31/2017	Sampling Date:	08/28/2017
Reported:	09/07/2017	Sampling Type:	Soil
Project Name:	SRO STATE COM #48H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - MALAGA		

Sample ID: SOUTH @ SURFACE (H702335-36)

BTX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/06/2017	ND	1.82	90.8	2.00	0.313		
Toluene*	<0.050	0.050	09/06/2017	ND	1.83	91.3	2.00	0.0863		
Ethylbenzene*	<0.050	0.050	09/06/2017	ND	1.94	97.0	2.00	0.633		
Total Xylenes*	<0.150	0.150	09/06/2017	ND	5.78	96.3	6.00	0.918		
Total BTX	<0.300	0.300	09/06/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.2 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	09/07/2017	ND	416	104	400	3.77		

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	09/05/2017	ND	185	92.4	200	3.24	
DRO >C10-C28	<10.0	10.0	09/05/2017	ND	186	92.8	200	2.95	
EXT DRO >C28-C36	<10.0	10.0	09/05/2017	ND					

Surrogate: 1-Chlorooctane 91.5 % 28.3-164

Surrogate: 1-Chlorooctadecane 92.8 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

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Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
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

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A handwritten signature in cursive script, appearing to read "C. D. Keene", written in black ink.

Celey D. Keene, Lab Director/Quality Manager



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Corrected $+1.23^{\circ}\text{C}$

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



ARDINAL LABORATORIES

101 East Marland, Hobbs, NM 88240

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: BBC International, Inc. Project Manager: Cliff Brunson Address: P.O. Box 805 City: Hobbs Phone #: 575-397-6388 Project #:		State: NM Zip: 88241 Attn: Address: City: State: Zip: Phone #: Fax #:		P.O. #: Company: COG Attn: Address: City: State: Zip: Phone #: Fax #:	
Project Name: SPO State Con #40H Project Location: M21292 Sample Name: 1.0		FOR LAB USE ONLY			
Lab I.D. H760835		Sample I.D. SP209		DATE 8-28-05	
11 12 13 14 15 16 17 18 19 20		1/2 1/6 1/8 SP301 3 6 9 12 16		8:28 9:25 9:57 10:15 10:17 10:20 10:40 11:00 11:15 11:39	
(G)RAB OR (C)OMP. # CONTAINERS GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER : ACID/BASE: ICE / COOL OTHER :		MATRIX PRESERV SAMPLING		TPH Extended BTEX CL	
Relinquished By: Cliff Brunson Date: 8-31-17 Time: 4:34		Received By: Haley Curshaw Date: Time:		REMARKS:	
Delivered By: (Circle One) Sampler - UPS - Bus - Other:		Sample Condition Cool, Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		CHECKED BY: (Initials) HC	



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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

5/4

Company Name: BBC International, Inc.		BILL TO		ANALYSIS REQUEST																									
Project Manager: Cliff Brunson		P.O. #:		Company:																									
Address: P.O. Box 805		Attn:		Address:																									
City: Hobbs		State: NM		City:																									
Phone #: 575-397-6388		Fax #: 575-397-0397		State:																									
Project #:		Project Owner: COC		Zip:																									
Project Name: SPO State Cor #404		City:		State:																									
Project Location: 12622		Phone #:		Zip:																									
Sample Name: 1.0		Fax #:		Phone #:																									
FOR LAB USE ONLY		PRESERV		SAMPLING																									
Lab I.D.		(G)RAB OR (C)OMP.		# CONTAINERS		MATRIX		DATE		TIME																			
Sample I.D.		GROUNDWATER		WASTEWATER		SOIL		OIL		SLUDGE		OTHER :		ACID/BASE:		ICE / COOL		OTHER :											
4102335		SP30/0		SP40/0		SP50/0		SP60/0		SP70/0		SP80/0		SP90/0		SP100/0		SP110/0		SP120/0									
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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: BBC International, Inc.		BILL TO		ANALYSIS REQUEST																																					
Project Manager: Cliff Brunson		P.O. #:																																							
Address: P.O. Box 805		Company:																																							
City: Hobbs		Attn:																																							
State: NM Zip: 88241		Address:																																							
Phone #: 575-397-6388 Fax #: 575-397-0397		City:																																							
Project #:		State:																																							
Project Name: SPO State Com 40H		Zip:																																							
Project Location: M1292		Phone #:																																							
Sampler Name: L.O.		Fax #:																																							
FOR LAB USE ONLY																																									
Lab I.D.		Sample I.D.		(G)RAB OR (C)OMP.		# CONTAINERS		GROUNDWATER		WASTEWATER		SOIL		OIL		SLUDGE		OTHER :		ACID/BASE:		ICE / COOL		OTHER :		DATE		TIME													
H702335		SP506		G-1		1		X		X		X		X		X		X		X		X		X		X		X		X											
31		9		G-1		1		X		X		X		X		X		X		X		X		X		X		X		X											
32		12		G-1		1		X		X		X		X		X		X		X		X		X		X		X		X											
33		16		G-1		1		X		X		X		X		X		X		X		X		X		X		X		X											
34		18		G-1		1		X		X		X		X		X		X		X		X		X		X		X		X											
35		18		G-1		1		X		X		X		X		X		X		X		X		X		X		X		X											
36		South of SCL		G-1		1		X		X		X		X		X		X		X		X		X		X		X		X											
PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal regardless of whether such claim is based upon any of the above stated reasons or otherwise.														Relinquished By: Jeff Daniels		Time: 3/1/17		Received By: Holly Lubbers		Time: 4:34		Date: 3/1/17		Sample Condition		Checked By: HC															
Relinquished By:		Time:		Received By:		Time:		Date:		Sample Condition		Checked By:																													
Delivered By: (Circle One)		-2.6°C/-2.35°C		Cool		Intact		Yes		No		Yes		No																											
Sampler - UPS - Bus - Other:		-2.6°C/-2.35°C		Cool		Intact		Yes		No		Yes		No																											
† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476																																									
Corrected +.85°C																																									
REMARKS:																																									
Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No																																									
Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No																																									
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PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

October 19, 2017

Cliff Brunson

BBC International, Inc.

P.O. Box 805

Hobbs, NM 88241

RE: SRO STATE COM #48H

Enclosed are the results of analyses for samples received by the laboratory on 10/13/17 13:33.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

BBC International, Inc.
 Cliff Brunson
 P.O. Box 805
 Hobbs NM, 88241
 Fax To: (575) 397-0397

Received:	10/13/2017	Sampling Date:	10/10/2017
Reported:	10/19/2017	Sampling Type:	Soil
Project Name:	SRO STATE COM #48H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - MALAGA, EDDY CO NM		

Sample ID: SB1 @ 20 (H702780-01)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	304	16.0	10/17/2017	ND	416	104	400	3.77	

Sample ID: SB1 @ 25 (H702780-02)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	10/17/2017	ND	416	104	400	3.77	

Sample ID: SB1 @ 30 (H702780-03)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	10/17/2017	ND	416	104	400	3.77	

Sample ID: SB1 @ 35 (H702780-04)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	10/17/2017	ND	416	104	400	3.77	

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

BBC International, Inc.
 Cliff Brunson
 P.O. Box 805
 Hobbs NM, 88241
 Fax To: (575) 397-0397

Received: 10/13/2017
 Reported: 10/19/2017
 Project Name: SRO STATE COM #48H
 Project Number: NONE GIVEN
 Project Location: COG - MALAGA, EDDY CO NM

Sampling Date: 10/10/2017
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SB2 @ 20 (H702780-05)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	4320	16.0	10/17/2017	ND	416	104	400	3.77		

Sample ID: SB2 @ 25 (H702780-06)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	10/17/2017	ND	416	104	400	3.77		

Sample ID: SB2 @ 30 (H702780-07)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	10/17/2017	ND	416	104	400	3.77		

Sample ID: SB2 @ 35 (H702780-08)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	10/17/2017	ND	416	104	400	3.77	

Sample ID: SB3 @ 20 (H702780-09)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	8260	16.0	10/17/2017	ND	416	104	400	3.77		

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

BBC International, Inc.
 Cliff Brunson
 P.O. Box 805
 Hobbs NM, 88241
 Fax To: (575) 397-0397

Received:	10/13/2017	Sampling Date:	10/10/2017
Reported:	10/19/2017	Sampling Type:	Soil
Project Name:	SRO STATE COM #48H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - MALAGA, EDDY CO NM		

Sample ID: SB3 @ 25 (H702780-10)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	320	16.0	10/17/2017	ND	416	104	400	3.77		

Sample ID: SB3 @ 30 (H702780-11)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	208	16.0	10/18/2017	ND	416	104	400	3.77		

Sample ID: SB3 @ 35 (H702780-12)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	240	16.0	10/18/2017	ND	416	104	400	3.77		

Sample ID: SB4 @ 20 (H702780-13)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	240	16.0	10/18/2017	ND	416	104	400	3.77		

Sample ID: SB4 @ 25 (H702780-14)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	112	16.0	10/18/2017	ND	416	104	400	3.77		

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

BBC International, Inc.
 Cliff Brunson
 P.O. Box 805
 Hobbs NM, 88241
 Fax To: (575) 397-0397

Received:	10/13/2017	Sampling Date:	10/10/2017
Reported:	10/19/2017	Sampling Type:	Soil
Project Name:	SRO STATE COM #48H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - MALAGA, EDDY CO NM		

Sample ID: SB4 @ 30 (H702780-15)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	160	16.0	10/18/2017	ND	416	104	400	3.77		

Sample ID: SB5 @ 20 (H702780-16)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	352	16.0	10/18/2017	ND	432	108	400	3.64		

Sample ID: SB5 @ 25 (H702780-17)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	192	16.0	10/18/2017	ND	432	108	400	3.64		

Sample ID: SB5 @ 30 (H702780-18)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	160	16.0	10/18/2017	ND	432	108	400	3.64		

Sample ID: SB5 @ 35 (H702780-19)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	208	16.0	10/18/2017	ND	432	108	400	3.64		

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Celey D. Keene, Lab Director/Quality Manager

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

Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
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

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A handwritten signature in black ink, appearing to read "Celey D. Keene", is written over a horizontal line.

Celey D. Keene, Lab Director/Quality Manager



ARDINAL LABORATORIES

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

BILL TO

ANALYSIS REQUEST

Company Name: BBC International, Inc.		P.O. #:	
Project Manager: Cliff Brunson		Company: <i>Scmp</i>	
Address: P.O. Box 805		Attn:	
City: Hobbs		Address:	
Phone #: 575-397-6388		City:	
Fax #: 575-397-0397		State:	
Project Owner: <i>COG</i>		Zip:	
Project #: <i>SRD State Com #4844</i>		Phone #:	
Project Location: <i>Eddy County</i>		Fax #:	
Sampler Name: <i>Jeff Drnelovs</i>		DATE	
FOR LAB USE ONLY		TIME	
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS
<i>H702780</i>	<i>5B1020</i>	<input checked="" type="checkbox"/>	<i>1</i>
<i>1</i>	<i>5B1025</i>	<input checked="" type="checkbox"/>	<i>1</i>
<i>2</i>	<i>5B1030</i>	<input checked="" type="checkbox"/>	<i>1</i>
<i>3</i>	<i>5B1035</i>	<input checked="" type="checkbox"/>	<i>1</i>
<i>4</i>	<i>5B2020</i>	<input checked="" type="checkbox"/>	<i>1</i>
<i>5</i>	<i>5B2025</i>	<input checked="" type="checkbox"/>	<i>1</i>
<i>6</i>	<i>5B2030</i>	<input checked="" type="checkbox"/>	<i>1</i>
<i>7</i>	<i>5B2035</i>	<input checked="" type="checkbox"/>	<i>1</i>
<i>8</i>	<i>5B3020</i>	<input checked="" type="checkbox"/>	<i>1</i>
<i>9</i>	<i>5B3025</i>	<input checked="" type="checkbox"/>	<i>1</i>
<i>10</i>	<i>5B3025</i>	<input checked="" type="checkbox"/>	<i>1</i>
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Retinquished By: <i>Jeff Drnelovs</i>		TIME	
Date: <i>10-13-17</i>		TIME	
Received By: <i>Julie Drnelovs</i>		TIME	
Date: <i>10-13-17</i>		TIME	
Delivered By: (Circle One) <i>1.1c</i>		TIME	
Sampler - UPS - Bus - Other: <i>1.35c</i>		TIME	
Sample Condition		CHECKED BY: <i>Julie Drnelovs</i>	
Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/>		(Initials)	
Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/>		<i>10-13-17</i>	
REMARKS:		Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Add'l Phone #:	
		Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Add'l Fax #:	

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

#75 corrected to .35c



ARDINAL LABORATORIES

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: BBC International, Inc.		P.O. #:		BILL TO														
Project Manager: Cliff Brunson		Company: <i>Sc...</i>		ANALYSIS REQUEST														
Address: P.O. Box 805		Attn:																
City: Hobbs		Address:																
Phone #: 575-397-6388		City:																
Project #:		State: NM																
Project Name: <i>5 RO State com # 48H</i>		Zip: 88241																
Project Location: <i>Eddy County</i>		Phone #:																
Sampler Name: <i>Jeff Ornelas</i>		Fax #:																
FOR LAB USE ONLY																		
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX					PRESERV	SAMPLING								
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME				
<i>#702780</i>	<i>5B30030</i>	<i>G</i>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>							<i>10/10/17</i>	<i>11:30</i>	<i>✓</i>			
	<i>11 5B30030</i>	<i>G</i>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>							<i>11:31</i>	<i>✓</i>				
	<i>12 5B30035</i>	<i>G</i>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>							<i>12:22</i>	<i>✓</i>				
	<i>13 5B30020</i>	<i>G</i>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>							<i>12:33</i>	<i>✓</i>				
	<i>14 5B30025</i>	<i>G</i>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>							<i>12:51</i>	<i>✓</i>				
	<i>15 5B30030</i>	<i>G</i>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>							<i>11:11</i>	<i>✓</i>				
	<i>16 5B30020</i>	<i>G</i>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>							<i>11:22</i>	<i>✓</i>				
	<i>17 5B30025</i>	<i>G</i>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>							<i>11:37</i>	<i>✓</i>				
	<i>18 5B30030</i>	<i>G</i>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>							<i>2:15</i>	<i>✓</i>				
	<i>19 5B30035</i>	<i>G</i>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>												
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Reinquisitioned By:		Date:	Received By:	REMARKS:														
<i>Jeff Ornelas</i>		Time:	<i>Julie Brunson</i>															
Reinquisitioned By:		Date:	Received By:															
<i>Julie Brunson</i>		<i>10/13/17</i>	<i>Julie Brunson</i>															
Delivered By: (Circle One)		Time:	Sample Condition	CHECKED BY:														
<i>1:1c / .35c</i>		<i>1:33</i>	<input checked="" type="checkbox"/> Cool <input checked="" type="checkbox"/> Intact	<i>Julie Brunson</i>														
Sampler - UPS - Bus - Other:		Phone Result:	Fax Result:	ADD'l Phone #:														
<i>10-#75</i>		<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<i>10-#75</i>														

From: Bratcher, Mike, EMNRD
To: [Cliff Brunson](#)
Cc: [Weaver, Crystal, EMNRD](#); [Becky Haskell](#); [Ken Swinney](#); [Jennifer Gilkey](#); [Kathy Purvis](#)
Subject: RE: COG SRO State Com #48 (2RP-4182) - Delineation Workplan
Date: Thursday, February 22, 2018 8:09:26 AM

RE: COG * SRO St Com 48H * **2RP-4182** * DOR: 4/21/2017

Cliff,

After consultation with Ms. Weaver, and re-examining the data and remediation proposal, the proposal is approved as submitted. Please advise once remedial activities have been scheduled.

Thank you,

Mike Bratcher
NMOCD District 2
811 South First Street
Artesia, NM 88210
575-748-1283 Ext 108

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations.

From: Cliff Brunson [mailto:cbrunson@bbcinternational.com]
Sent: Wednesday, November 22, 2017 2:08 PM
To: Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Amber Groves <agroves@slo.state.nm.us>
Cc: Weaver, Crystal, EMNRD <Crystal.Weaver@state.nm.us>; Becky Haskell <rhaskell@concho.com>; Ken Swinney <kswinney@bbcinternational.com>; Jennifer Gilkey <jgilkey@bbcinternational.com>; Kathy Purvis <kathy@bbcinternational.com>
Subject: COG SRO State Com #48 (2RP-4182) - Delineation Workplan

Mike and Amber,

Please find the attached Delineation Workplan and remediation proposal for the COG SRO State Com #48 (2RP-4182). COG is requesting that you review this plan and is looking forward to both the OCD's and SLO's approval.

If you have any questions, please let me know.

Thanks, Cliff

Cliff P. Brunson, CEI, CRS
President
BBC International, Inc.
World-Wide Environmental Specialists
Mailing Address:
P. O. Box 805
Hobbs, NM 88241-0805 USA
Shipping Address:
1324 W. Marland St.
Hobbs, NM 88240 USA
Phone: (575) 397-6388
Fax: (575) 397-0397
E-Mail: cbrunson@bbcinternational.com



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From: Naranjo, Mark
To: ["Cliff Brunson"](#); [Honea, Tammy](#)
Cc: ["Becky Haskell"](#); [DeAnn Grant](#); ["Dakota Neel"](#); ["Sheldon Hitchcock"](#); ["Ken Swinney"](#); ["Jennifer Gilkey"](#); ["Kathy Purvis"](#)
Subject: RE: COG SRO State Com #48 (2RP-4182) - Delineation Workplan
Date: Monday, March 19, 2018 5:03:43 PM

The NMSLO approves the work plan.

From: Cliff Brunson [mailto:cbrunson@bbcinternational.com]
Sent: Monday, March 19, 2018 1:25 PM
To: Naranjo, Mark <MNaranjo@slo.state.nm.us>
Cc: 'Becky Haskell' <rhaskell@concho.com>; DeAnn Grant <agrant@concho.com>; 'Dakota Neel' <DNeel2@concho.com>; 'Sheldon Hitchcock' <SLHitchcock@concho.com>; 'Ken Swinney' <kswinney@bbcinternational.com>; 'Jennifer Gilkey' <jgilkey@bbcinternational.com>; 'Kathy Purvis' <kathy@bbcinternational.com>
Subject: FW: COG SRO State Com #48 (2RP-4182) - Delineation Workplan

Mark,

As you can see from the email chain below, the attached plan was submitted to the SLO and OCD on November 22, 2017 and the OCD approved the plan on February 22, 2018. If you would please review the plan and issue an approval via email, it would be greatly appreciated. If you have any questions, please contact either myself or Becky Haskell with COG.

Thanks, Cliff

Cliff P. Brunson, CEI, CRS
 President
 BBC International, Inc.
 World-Wide Environmental Specialists
 Mailing Address:
 P. O. Box 805
 Hobbs, NM 88241-0805 USA
 Shipping Address:
 1324 W. Marland St.
 Hobbs, NM 88240 USA
 Phone: (575) 397-6388
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From: Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>
Sent: Thursday, February 22, 2018 8:09 AM
To: Cliff Brunson <cbrunson@bbcinternational.com>
Cc: Weaver, Crystal, EMNRD <Crystal.Weaver@state.nm.us>; Becky Haskell <rhaskell@concho.com>; Ken Swinney <kswinney@bbcinternational.com>; Jennifer Gilkey <jgilkey@bbcinternational.com>; Kathy Purvis <kathy@bbcinternational.com>
Subject: RE: COG SRO State Com #48 (2RP-4182) - Delineation Workplan

RE: COG * SRO St Com 48H * **2RP-4182** * DOR: 4/21/2017

Cliff,

After consultation with Ms. Weaver, and re-examining the data and remediation proposal, the proposal is approved as submitted. Please advise once remedial activities have been scheduled.

Thank you,

Mike Bratcher
NMOCD District 2
811 South First Street
Artesia, NM 88210
575-748-1283 Ext 108

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From: Cliff Brunson [mailto:cbrunson@bbcinternational.com]
Sent: Wednesday, November 22, 2017 2:08 PM
To: Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Amber Groves <agroves@slo.state.nm.us>
Cc: Weaver, Crystal, EMNRD <Crystal.Weaver@state.nm.us>; Becky Haskell <rhaskell@concho.com>; Ken Swinney <kswinney@bbcinternational.com>; Jennifer Gilkey <jgilkey@bbcinternational.com>; Kathy Purvis <kathy@bbcinternational.com>
Subject: COG SRO State Com #48 (2RP-4182) - Delineation Workplan

Mike and Amber,

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If you have any questions, please let me know.

Thanks, Cliff

Cliff P. Brunson, CEI, CRS
President
BBC International, Inc.
World-Wide Environmental Specialists
Mailing Address:
P. O. Box 805
Hobbs, NM 88241-0805 USA
Shipping Address:
1324 W. Marland St.
Hobbs, NM 88240 USA
Phone: (575) 397-6388
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Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
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CONDITIONS

Action 160409

CONDITIONS

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	Action Type: [IM-SD] Incident File Support Doc (ENV) (IM-BNF)

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