

Hall, Brittany, EMNRD

From: Price, Henryetta <hprice@blm.gov>
Sent: Thursday, June 7, 2018 6:18 PM
To: Sheldon Hitchcock
Cc: Bratcher, Mike, EMNRD; Weaver, Crystal, EMNRD; Robert McNeill; Rebecca Haskell; Dakota Neel; DeAnn Grant
Subject: Re: [EXTERNAL] (Closure Letter) Burch Keely Water Flood Satellite C (30-015-02971) 12-22-2016 (2RP-4052)

**** External email. Use caution. ****

Closure report accepted and approved. Thank you!

Henryetta Price

Environmental Protection Specialist
Bureau Of Land Management

[Hprice@blm.gov](mailto:hprice@blm.gov)

Phone 575-234-5951

Cell 575-706-2780

Fax 575-234-5927

*** Lesser Prairie Chicken (LPC) timing stipulations are in effect 1 Mar- 15 June annually.

*** Tis the season for African Rue. Please do a 360 scan around your well locations and lease roads.

The **BLM acceptance/approval does not** relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that may pose a threat to groundwater, surface water, human health or the environment or if the location fails to reclaim properly. In such an event that the location does not revegetate, or future issues with contaminants are encountered, the operator will be asked to address the issues until the contaminant issues are fully mitigated and the location is successfully reclaimed. In addition, BLM approval does not relieve the operator of responsibility for compliance with any other federal, state or local laws/regulations.

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On Thu, Jun 7, 2018 at 11:26 AM, Sheldon Hitchcock <SLHitchcock@concho.com> wrote:

Mr. Bratcher/Ms. Price,

Please find the attached closure report for the Burch Keely Water Flood Satellite C release that occurred on December 22, 2016. If you have any questions or concerns please do not hesitate to contact me.

Thank you,

Sheldon L. Hitchcock

HSE Coordinator

COG Operating LLC

2407 Pecos Avenue | Artesia, NM 88210
Cell: 575-703-6475 | Office: 575-746-2010

slhitchcock@concho.com



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[Sheldon L. Hitchcock]
[HSE Coordinator]

June 7, 2018

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

Henryetta Price
Bureau of Land Management, CFO
620 E. Green Street
Carlsbad, NM 88220

Re: Closure Letter
Burch Keely Water Flood Satellite C
API #: 30-015-02971
RP#: 2RP-4052
Unit Letter H Section 13, Township 17S, Range 29E
Eddy County, NM

Mr. Bratcher/Ms. Price

COG Operating, LLC (COG) is pleased to submit for your consideration the following closure report for the Burch Keely Water Flood Satellite C. This release occurred on December 22, 2016. Following the release an assessment of impacted soils was conducted. A remediation work plan was submitted to and subsequently approved by the New Mexico Oil Conservation Division (NMOCD) and Bureau of Land Management (BLM). A copy of the approved work plan is attached in appendix V.

BACKGROUND

The Burch Keely Water Flood Satellite C release is located in Unit Letter H, Section 13, Township 17 South and Range 29 East in Eddy County, New Mexico. More specifically the latitude and longitude for this release are 32.836181 North and -104.022354 West.

On December 22, 2017, a buried flowline failed resulting in the release of approximately fifteen (15) barrels (bbls) of oil and twenty-five (25) bbls of produced water. A vacuum truck was dispatched to recover freestanding fluids. Approximately ten (10) bbls of Oil and twenty (20) bbls of produced water were recovered.

On March 8, 2018, remediation activities began in accordance with the approved work plan. The analytical results from the NMOCD and BLM stipulated confirmation soil sampling activities are summarized in the table below. A site diagram of the excavated area is presented in appendix I.

June 7, 2018

GROUNDWATER AND SITE RANKING

According to the New Mexico Office of the State Engineer (NMOSE) groundwater in the project vicinity is approximately seventy-six (76) feet below ground surface (BGS) (Appendix II). No water well or surface water was observed within one-thousand (1,000) feet of the release site. Therefore the site ranking for this release is ten (10) based on the following:

Depth to groundwater	50-100-feet
Distance to surface water body	>1000-feet
Wellhead Protection Area	>1000-feet

CONFIRMATION SOIL SAMPLING RESULTS

Sample ID	Sample Date	Chloride (mg/kg)
T-1 E Sidewall	03/05/18 08:00	13.5
T-1 W Sidewall	03/06/18 08:05	6.92
T-1 S./T-2 N.	03/07/18 08:10	<5.00
T-2 E. Sidewall	03/08/18 08:15	<4.99
T-2 W. Sidewall	03/09/18 08:20	<5.00
T-2 S./ T-3 N.	03/09/18 08:25	589
T-3 E. Sidewall	03/09/18 08:30	27.3
T-3 W. Sidewall	03/09/18 08:35	23.7
T-3 S./ T-5 N.	03/09/18 08:40	<5.00
T-5 E. Sidewall	03/09/18 08:45	18.4
T-5 W. Sidewall	03/05/18 08:50	22.6
T-5 S./ T-4 N.	03/06/18 08:55	<4.99
T-4 E. Sidewall	03/07/18 09:00	<5.00
T-4 W. Sidewall	03/08/18 09:05	<4.99
T-4 S. Sidewall	03/09/18 09:10	<5.00

June 7, 2018

REMEDIAL ACTIONS

- The impacted area in the vicinity of sample location T-1 was excavated to a depth of one (1) foot BGS.
- The impacted area in the vicinity of sample location T-2 was excavated to a depth of two (2) feet BGS.
- The impacted area in the vicinity of sample locations T-3 and T-4 were excavated to a depth of three (3) feet BGS.
- The impacted area in the vicinity of sample location T-5 was excavated to a depth of four (4) feet BGS.
- All of the excavated material was hauled to an NMOCD approved solid waste disposal facility.
- Confirmation soil samples were collected from the sidewalls of the excavation and at the borders between the varying excavation depths per NMOCD and BLM stipulations. See Appendix VI for the complete laboratory reports and chain-of-custody forms.
- A 20-mil poly liner was installed at the bottom of the excavation in the area of T-5 to encapsulate the remaining chloride impacts.
- The excavation was backfilled with top soil, contoured to match the surrounding terrain and seeded with BLM #1 seed mixture.

June 7, 2018

CLOSURE REQUEST

COG Operating, LLC respectfully requests that the New Mexico Oil Conservation Division and Bureau of Land Management grant closure approval for the Burch Keely Water Flood Satellite C incident that occurred on December 22, 2016.

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

Sincerely,



Sheldon L. Hitchcock
HSE Coordinator
slhitchcock@concho.com

Enclosed:

- Appendix I: Site Diagram
- Appendix II: Groundwater Data
- Appendix III: Initial C-141 (Copy)
- Appendix IV: Final C-141
- Appendix V: Work Plan (Copy)
- Appendix VII: Analytical Reports and Chain-of-Custody Forms

APPENDIX I

Burch Keely Satellite C



APPENDIX II



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

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

(R=POD has been replaced, O=orphaned, 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	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
RA 11914 POD1			ED	2	4	2	20	17S	30E	594801	3632002	3613	85	80	5
RA 11807 POD1			ED	1	2	3	22	17S	29E	587360	3631585	4628	131	76	55

Average Depth to Water: **78 feet**

Minimum Depth: **76 feet**

Maximum Depth: **80 feet**

Record Count: 2

Basin/County Search:

County: Eddy

UTMNAD83 Radius Search (in meters):

Easting (X): 591543

Northing (Y): 3633566

Radius: 5000

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.

6/7/18 9:40 AM

Page 1 of 1

WATER COLUMN/ AVERAGE
DEPTH TO WATER

APPENDIX III

NM OIL CONSERVATION

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

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

Form C-141
Revised August 8, 2011

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

Release Notification and Corrective Action

NAB1700438955 OPERATOR ☒ Initial Report ☐ Final Report

Name of Company: COG Operating LLC <i>229137</i>	Contact: Robert McNeill
Address: 600 West Illinois Avenue, Midland TX 79701	Telephone No. 432-683-7443
Facility Name: Burch Keely Water Flood Satellite C	Facility Type: Flowline

Surface Owner: Federal	Mineral Owner:	API No. 30-015-02971
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LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
H	13	17S	29E	1980	North	735	East	Eddy

Latitude 32.8364334 Longitude 104.0220566

NATURE OF RELEASE

Type of Release: Oil and Produced Water	Volume of Release: 15bbls Oil & 25bbls PW	Volume Recovered: 10bbls Oil & 20bbls PW
Source of Release: Flowline	Date and Hour of Occurrence: December 22, 2016 7:00 am	Date and Hour of Discovery: December 22, 2016 7:00 am
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Mr. Bratcher - NMOCD / Ms. Tucker - BLM	
By Whom? Dakota Neel	Date and Hour: December 22, 2016 3:08 pm	
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.*

The release was caused by a flowline leak on a buried flowline. The old flowline was abandoned and installed a new line.

Describe Area Affected and Cleanup Action Taken.*

The release was within a pasture. A vacuum truck was dispatched to remove all freestanding fluids. Concho will have the spill area sampled to delineate any possible impact from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation activities.

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>Crystal Weene</i>	
Title: Senior HSE Coordinator	Approval Date: <i>11/4/17</i>	Expiration Date: <i>N/A</i>
E-mail Address: <i>rhaskell@concho.com</i>	Conditions of Approval: <i>see attached</i>	Attached <input checked="" type="checkbox"/>
Date: 12/28/2016 Phone: 432-683-7443		

* Attach Additional Sheets If Necessary

APP 4052

APPENDIX IV

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources
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 (OGRID# 229137)	Contact: Robert McNeill
Address: 600 West Illinois Avenue, Midland TX 79701	Telephone No.: 432-683-7443
Facility Name: Burch Keely Water Flood Satellite C	Facility Type: Flowline
Surface Owner: BLM	Mineral Owner: API No.: 30-015-02971

LOCATION OF RELEASE

Unit Letter H	Section 13	Township 17S	Range 29E	Feet from the 	North/South Line 	Feet from the 	East/West Line 	County Eddy
-------------------------	----------------------	------------------------	---------------------	--------------------------	-----------------------------	--------------------------	---------------------------	-----------------------

Latitude: 32.8364334 Longitude: -104.0220566 NAD83

NATURE OF RELEASE

Type of Release: Oil and Produced Water	Volume of Release: 15bbls Oil & 25bbls PW	Volume Recovered: 10bbls Oil & 20bbls PW
Source of Release: Flowline	Date and Hour of Occurrence: 12/22/2016	Date and Hour of Discovery: 12/22/2016 7:00am
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 Shelly Tucker-BLM	
By Whom? Dakota Neel	Date and Hour: 12/22/2016 3:08pm	
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.*		
The release was caused by the failure of a buried flowline. The damaged section of flowline was replaced.		
Describe Area Affected and Cleanup Action Taken.*		
The release occurred within the pasture. Following site assessment activities a remediation work plan was drafted and subsequently approved by NMOCD and BLM. Remediation of the affected area was carried out in accordance with the approved work plan.		
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>Sheldon Hitchcock</i>		OIL CONSERVATION DIVISION Approved by Environmental Specialist: <i>Ashley Maxwell</i>
Printed Name: Sheldon L. Hitchcock		
Title: HSE Coordinator	Approval Date: 4/28/2023	Expiration Date:
E-mail Address: slhitchcock@concho.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 6/7/2018	Phone: 575-746-2010	

* Attach Additional Sheets If Necessary

APPENDIX V



REMEDIATION WORK PLAN

Property:

**Concho Operating, LLC.
Burch Keely Water Flood Satellite C
Eddy County, New Mexico
Unit Letter "H", Section 13, Township 17 South, Range 29 East
Latitude 32.8364334, Longitude -104.0220566
2RP-4052**

September 2017

Prepared for:

**Concho Operating, LLC.
600 West Illinois Avenue
Midland, TX 79701
Attn: Mrs. Rebecca Haskell**

Prepared by:

Ryan Reich
Environmental Project Manager

Jack Zimmerman, P.G., C.P.G
Senior Geologist

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APPENDICES

Appendix A

- Figure 1 – Site Vicinity Map
- Figure 2 – Topography Map
- Figure 3 – Release Footprint Map
- Figure 4 – Trench and Soil Bore Locations Map
- Figure 5 – Proposed Excavated Depths Map

Appendix B

- Table 1 – Soil Analytical Summary Table

Appendix C

- Laboratory Analysis and Chain-of-Custody

Appendix D

- Initial C-141

WORK PLAN

**Concho Operating, LLC.
Burch Keely Water Flood Satellite C
Eddy County, New Mexico
Unit Letter "H", Section 13, Township 17 South, Range 29 East
Latitude 32.8364334, Longitude -104.0220566
2RP-4052**

September 2017

1.0 INTRODUCTION

1.1 Site Description & Background

American Safety Services Inc. (ASSI) has prepared this Work Plan for the Concho Operating, LLC. (COG) Burch Keely Water Flood Satellite C (referred to hereinafter as the "Site" or "subject Site"). This Work Plan is based upon the interpretation of the data collected by ASSI.

The Burch Keely Water Flood Satellite C is located in Unit Letter "H", Section 13, Township 17 South, Range 29 East, Eddy County, New Mexico (GPS 32.8364334, -104.0220566).

Remedial actions were conducted by ASSI in accordance with New Mexico Energy, Minerals, and Natural Resources Department (EMNRD), Oil Conservation Division (NMOCD) rules (*NMAC 19.15.29 Release Notification*) and the *NMOCD Guidelines for Remediation of Leaks, Spills and Releases* as guidance.

1.2 Project Objective

The objective of the Work Plan is to present documentation of the activities that were performed to date and to request an effective means to remediate the Site.

1.3 Standard of Care

ASSI's services are performed in accordance with standards provided by a firm rendering the same or similar services in the area during the same time period. ASSI makes no warranties, express or implied, as to the services performed hereunder. Additionally, ASSI does not warranty the work of third parties supplying information used in the report (e.g. laboratories, regulatory agencies, or other third parties). This scope of services will be performed in accordance with the scope of work agreed with the client.

1.4 Reliance

This report has been prepared for the exclusive use of COG, and any authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the Site) is prohibited without the express written authorization of COG and ASSI. Any unauthorized distribution or reuse is at the sole risk of COG. Notwithstanding the foregoing, reliance by authorized parties will be subject to the terms, conditions and limitations stated in the proposal, the report, and ASSI's Agreement. The limitation of liability defined in the agreement is the aggregate limit of ASSI's liability to the client.

2.0 SITE RANKING & PROPOSED REMEDIAL ACTION GOALS

The Site is subject to regulatory oversight by the NMOCD. To address activities related to releases, the NMOCD utilizes the *Guidelines for Remediation of Leaks, Spills and Releases* as guidance, in addition to the NMOCD rules, specifically NMAC 19.15.29 *Release Notification*. These documents establish investigation and abatement action requirements for sites subject to reporting and/or corrective action.

In accordance with the NMOCD's *Guidelines for Remediation of Leaks, Spills and Releases*, ASSI utilized the general site characteristics to determine the appropriate "ranking" for the Site. The ranking criteria and associated scoring are provided in the table below:

Ranking Criteria			Ranking Score
Depth to Groundwater	<50 feet	20	0
	50 to 99 feet	10	
	>100 feet	0	
Wellhead Protection Area, <1,000 feet from a water source, or; <200 feet from private domestic water source.	Yes	20	0
	No	0	
Distance to Surface Water Body	<200 feet	20	0
	200 to 1,000 feet	10	
	>1,000 feet	0	
Total Ranking Score			0

Based on ASSI's evaluation of the scoring criteria, the Site would have a Total Ranking Score of 0. This ranking is based on the following:

- The depth to the initial groundwater-bearing zone is 150 – 200 feet at the Site.
- The impacted area is greater than 200 feet from a private domestic water source.
- Distance to the nearest surface water body is greater than 1,000 ft.

Based on a Total Ranking Score of 0, cleanup goals for soils remaining in place include: 10 milligrams per kilogram (mg/Kg) for Benzene, 50 mg/Kg for Total Benzene, Toluene, Ethylbenzene, and Xylene (BTEX), 5,000 mg/Kg for Total Petroleum Hydrocarbons (TPH), and 600 mg/Kg for Chloride.

Figures 1 and 2 show the location of COG's Burch Keely Water Flood Satellite C facility in Eddy County, New Mexico and surrounding topography.

3.0 INITIAL RESPONSE & ACTIVITIES

3.1 Initial Response

On January 9, 2017, COG and GCI Construction personnel collected samples by means of trenching using mechanical means (i.e., backhoe tractor) in an effort to vertically delineate existing Total Petroleum Hydrocarbon (TPH) and Chloride in soil. Sampling activities were in response to a reportable release directly to the ground that occurred on December 22, 2016. Fifteen (15) barrels (bbls) of crude oil and twenty-five (25) bbls of produced water was released caused by a leak on a buried flowline. Ten (10) bbls of crude oil and twenty (20) bbls of produced water were recovered. The release impacted approximately seven thousand (7000) square feet of pasture area (Figure 3).

3.2 Trenching activities

The January 9th sampling event achieved vertical delineation at sample locations T1, T2, T3, T4, and T5 for TPH only. Vertical delineation for existing Chloride in soil was achieved at sample locations T1, T2, T3, and T4. However, at sample location T5 vertical delineation was not achieved (Table 1).

Additional samples were collected at location T5 on April 20th in a second attempt to vertically delineate existing Chloride in soil. COG and GCI Construction personnel utilized mechanical means (i.e., track—excavator) to collect samples at depths below sixteen (16) feet below ground surface (bgs). The ending depth was twenty-six and one-half (26.5) feet bgs. Vertical delineation was, once again, not achieved (Table 1).

3.3 Drilling Activities

On July 27th ASSI and COG personnel along with Scarborough Drilling, utilizing air rotary drilling techniques, continued vertical delineation efforts below twenty-six and one-half (26.5) feet bgs at location T5. Mr. Ryan Reich, an ASSI environmental professional, was present to document onsite activities (written and photographic).

One (1) soil boring (i.e., Soil Bore 1 @ T5), were advanced to vertically delineate Chloride below twenty-six and one-half (26.5) feet bgs with proximity to location T5. A total of five (5) samples were collected from Soil Bore 1 @ T5 and were analyzed for Chloride only (Table 1).

While drilling operations were ongoing, discrete samples were collected from Soil Bore 1 @ T5 at the following depths: 30', 40', 50', 60', and 65', bgs. Vertical delineation was achieved at a depth of fifty (50) feet bgs. However, drilling/sampling activities continued

an additional fifteen (15) feet — to a depth of sixty-five (65) feet bgs. This action confirmed a downward trend in Chloride concentration levels as depth increased.

Soil was field screened for Chloride utilizing electro conductivity during drilling operations. Soil boring locations are shown on Figure 4.

3.4 Soil Sampling Analytical Results

Analytical results were compared to the NMOCD *Guidelines for Remediation of Leaks, Spills and Releases* (Section VI A. Contaminated Soils) and show TPH and Chloride exceedances exist in soil above the NMOCD clean-up goals as discussed in Section 2.0 at sample locations. In the area of T1, Chloride was below regulatory guidelines, vertical delineation for TPH was achieved at two (2) feet bgs with a concentration of 18.5 mg/kg. In the area of T2, TPH was below regulatory guidelines, vertical delineation of Chloride was achieved at a depth of six (6) feet bgs with a concentration of 560 mg/kg. In the area of T3, TPH was below regulatory guidelines, vertical delineation of Chloride was achieved at a depth of four (4) feet with a concentration level of 48.0 mg/kg. In the area of T4, TPH was below regulatory guidelines, vertical delineation of Chloride was achieved at four (4) feet bgs with a concentration of 64.0 mg/kg. In the area of Soil Bore-1 @ T5 (T5), TPH was below regulatory guidelines, vertical delineation of Chloride was achieved at a depth of fifty (50) feet bgs with a concentration of 511.79 mg/Kg. All sample locations meet the NMOCD clean-up goal criteria.

4.0 LABORATORY ANALYTICAL METHODS

The samples were analyzed for TPH GRO/DRO utilizing EPA method SW-846 8015, BTEX using EPA method SW-846 8021B, and Chloride utilizing EPA method SW-846 300.1. Copies of the laboratory analysis are provided in Appendix D.

Soil was collected in laboratory prepared glassware, placed on ice, and packed in a cooler. The sample coolers and completed chain-of-custody forms were relinquished to Cardinal Laboratories in Hobbs New Mexico for the January 9th sampling event and to Xenco Laboratories in Midland, Texas for the April 20th and July 31st sampling events (Table 1).

Figure 4 shows the approximate location of the sampling (i.e., Soil Bore and Trench) locations.

5.0 WORK PLAN

Based upon the data collected and the work completed by ASSI, the constituents of concern (COC) (i.e., TPH and Chloride) has been vertically delineated at all the sample locations. Furthermore, laboratory analysis shows that COC concentrations are below the NMOCD clean-up goals (Table 1).

Based on the analytical data presented in Table 1, COG and ASSI propose to complete a removal action of the impacted material.

Figure 5 shows the excavation areas and proposed excavation depths based on analytical results. Locations of these areas are in relation to pertinent land features and general Site boundaries, which is included in Appendix A.

Excavations, as part of the proposed removal action, are as follows: specifically, in the area of T1, excavate to one (1) foot bgs, in the area of T2, excavate to two (2) feet bgs, for areas T3 and T4, excavate to three (3) feet bgs, and at Soil Bore 1 @ T5 (i.e. area of T5) excavate to four (4) feet bgs. Additionally, at location T5, a liner will be installed (approved 20 mil material thickness) at the bottom of the excavated area prior to backfilling. All material will be excavated (i.e., removed) by mechanical means, be temporarily stockpiled onsite and subsequently removed (hailed away) offsite to a proper disposal facility under appropriate manifest.

Prior to beginning backfilling operations, sidewall samples will be collected from each excavation in their prospective cardinal direction for Chloride only and submitted for laboratory analysis. The excavated areas will be backfilled to grade with clean imported material and the surface grade contoured to the surrounding landscape.

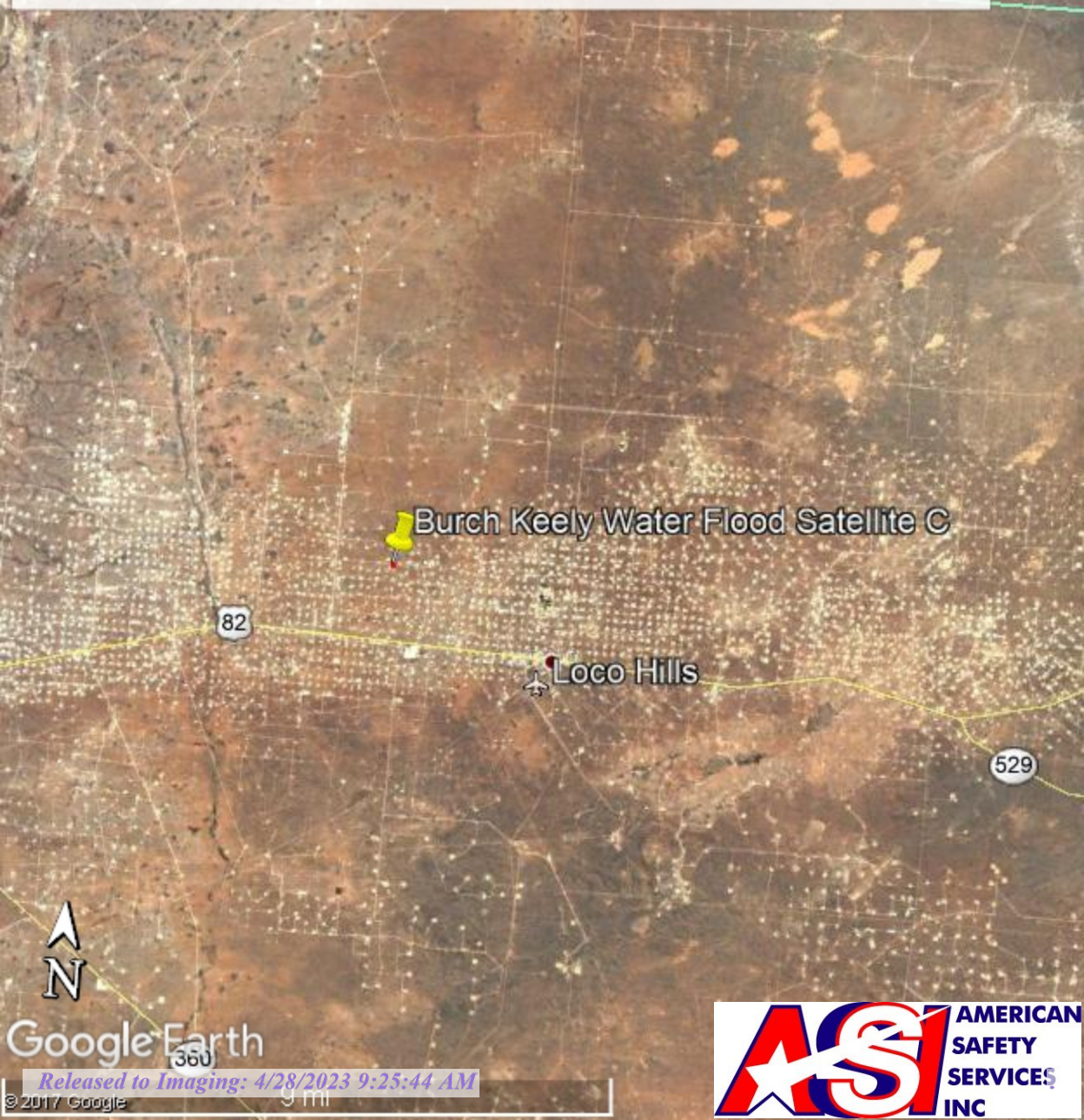


APPENDIX A

Figures

COG - Burch Keely Unit Water Flood Satellite C

Figure 1



COG - Burch Keely Unit Water Flood Satellite C

Figure 2

Legend



Burch Keely Water Flood Satellite C



COG - Burch Keely Unit Water Flood Satellite C

Figure 3

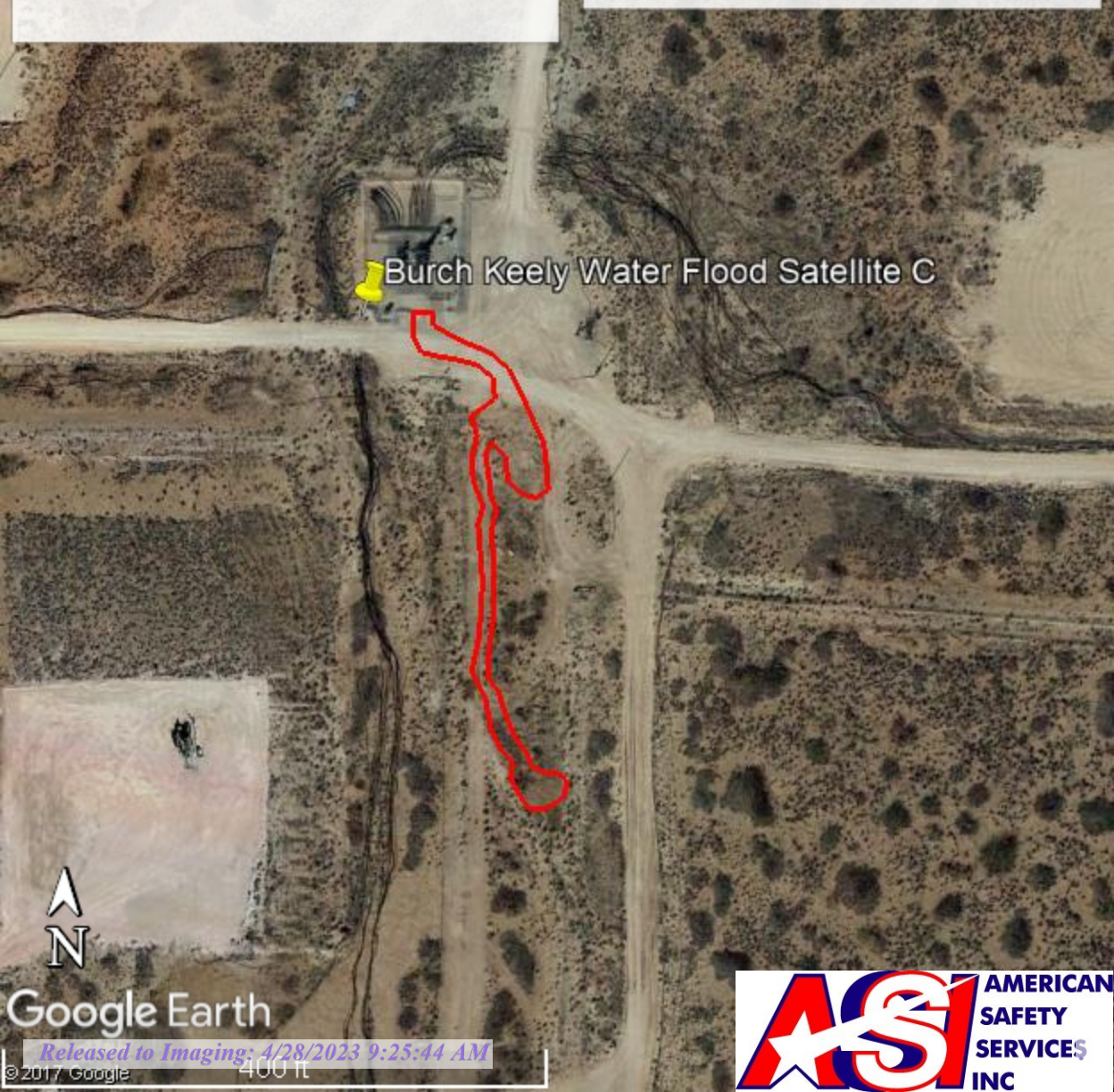
Legend



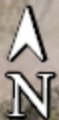
BKU Sat. C Release Footprint



Burch Keely Water Flood Satellite C



Burch Keely Water Flood Satellite C



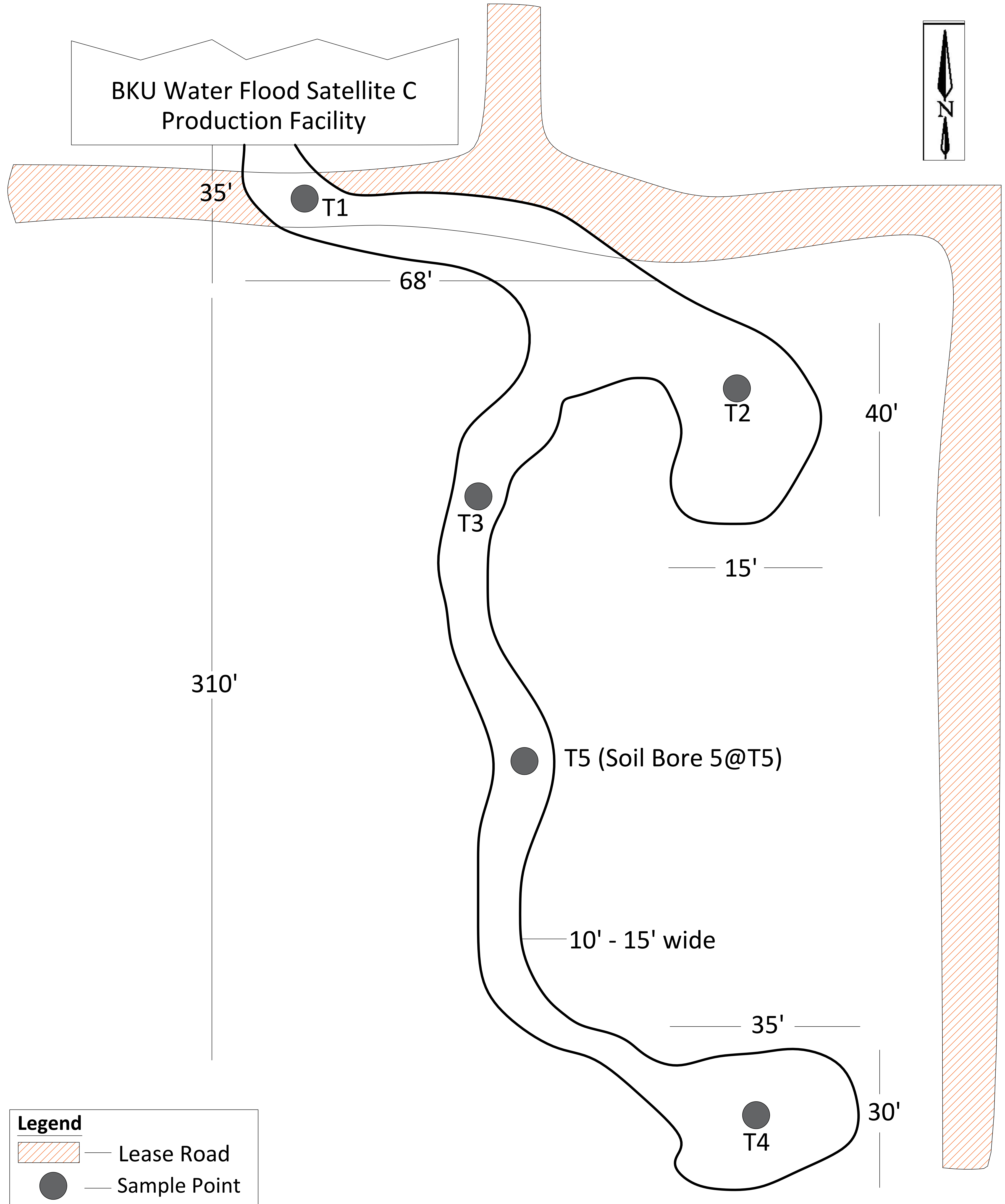
Google Earth

Released to Imaging: 4/28/2023 9:25:44 AM

© 2017 Google

400 ft





Legend

- Lease Road
- Sample Point

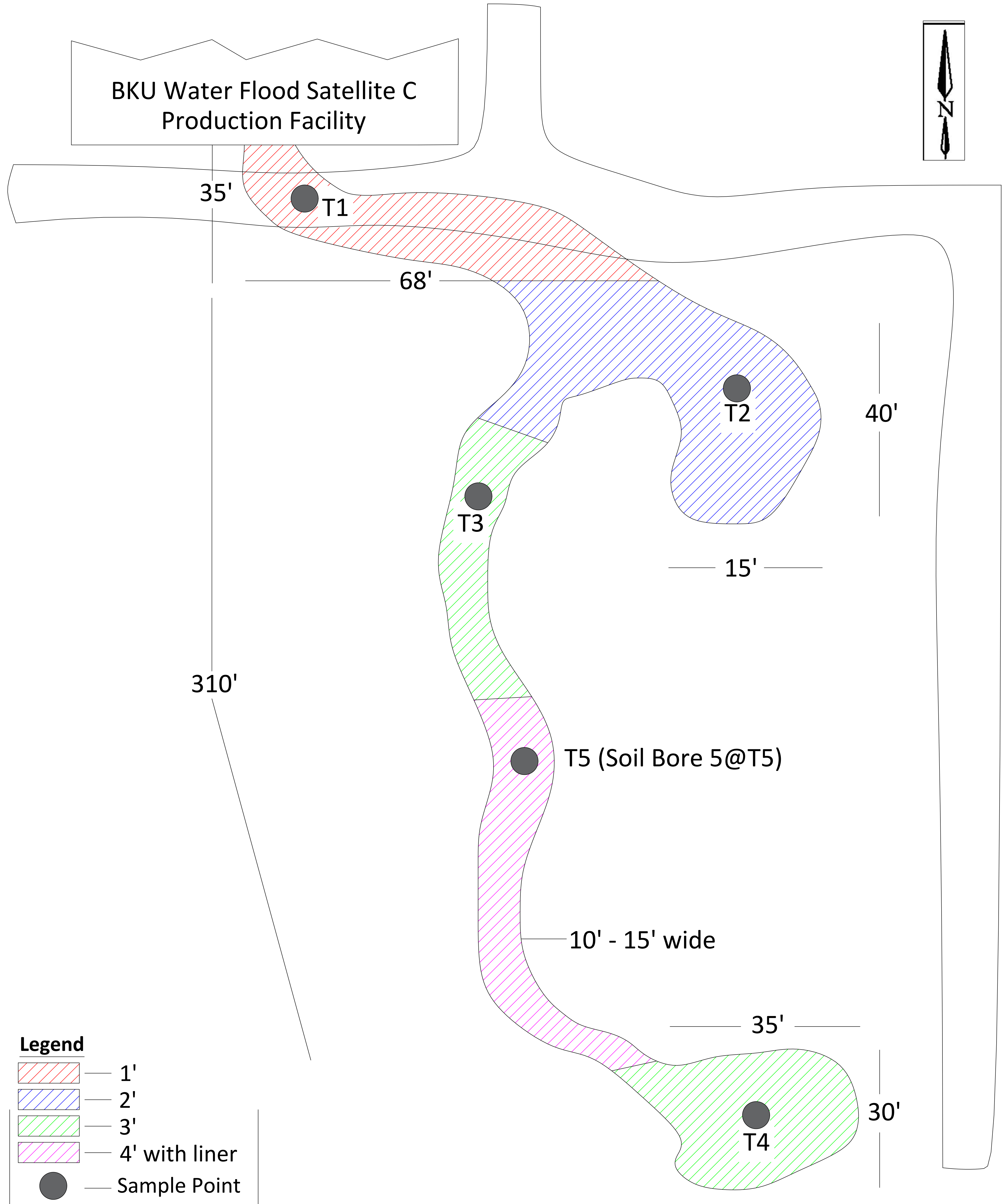
**Concho Operating, LLC. -
BKU Water Flood Satellite C**
Eddy County, New Mexico
32.8364N, -104.0220W



**AMERICAN
SAFETY
SERVICES
INC**

American Safety Services, Inc
8715 Andrews Hwy
Odessa, TX 79765
Phone: (432) 552-7625

FIGURE 4
Trench and Soil Bore
Locations



**Concho Operating, LLC. -
BKU Water Flood Satellite C**
Eddy County, New Mexico
32.8364N, -104.0220W



American Safety Services, Inc
8715 Andrews Hwy
Odessa, TX 79765
Phone: (432) 552-7625

FIGURE 5
Excavation Depths



APPENDIX B

Table 1

TABLE 1 Summary of Delineation Sampling Analytical Results Concentrations of Benzene, BTEX, TPH & Chloride in Soil Concho Operating, LLC Burch Keely Water Flood Satellite C Eddy, New Mexico NMOCD REF: 2RP-4052												
SAMPLE LOCATION	SAMPLE DEPTH (bgs)	SAMPLE DATE	SOIL STATUS	8021B					8015M			300.0
				BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYLBENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)	TOTAL BTEX (mg/Kg)	GRO (mg/Kg)	DRO (mg/Kg)	Total TPH (mg/Kg)	CHLORIDE (mg/Kg)
NMOCD - Guidelines for Remediation of Leaks, Spills and Releases				10	NE	NE	NE	50	NE	NE	5,000	600
Vertical Delineation Sampling												
T1	1'	1/9/2017	In-Situ	14.8	129	101	159	404	3,800	11,900	15,700	208.0
T1	2'	1/9/2017	In-Situ	<0.050	0.077	<0.050	<0.150	<0.300	<10.0	18.5	18.5	<16.0
T1	3'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.050	<0.300	<10.0	11.4	11.4	<16.0
T1	4'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	16.0
T1	5'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<16.0
T1	6'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<16.0
T1	7'	1/9/2017	In-Situ	-	-	-	-	-	-	-	-	<16.0
T1	8'	1/9/2017	In-Situ	-	-	-	-	-	-	-	-	<16.0
T1	10'	1/9/2017	In-Situ	-	-	-	-	-	-	-	-	16.0
T1	12'	1/9/2017	In-Situ	-	-	-	-	-	-	-	-	32.0
T2	1'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	4,640
T2	2'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	62.9	62.9	5,040
T2	3'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	832
T2	4'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	1,100
T2	5'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	1,020
T2	6'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	560
T2	7'	1/9/2017	In-Situ	-	-	-	-	-	-	-	-	512
T2	8'	1/9/2017	In-Situ	-	-	-	-	-	-	-	-	352
T2	10'	1/9/2017	In-Situ	-	-	-	-	-	-	-	-	288
T2	12'	1/9/2017	In-Situ	-	-	-	-	-	-	-	-	112
T3	1'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	4,480
T3	2'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	6,320
T3	3'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	10,900
T3	4'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	48.0
T3	5'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	64.0
T3	6'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.0
T3	7'	1/9/2017	In-Situ	-	-	-	-	-	-	-	-	48.0
T3	8'	1/9/2017	In-Situ	-	-	-	-	-	-	-	-	48.0
T3	10'	1/9/2017	In-Situ	-	-	-	-	-	-	-	-	112
T3	12'	1/9/2017	In-Situ	-	-	-	-	-	-	-	-	80.0

mg/Kg - milligrams per Kilogram

— = Not Established

Concentrations in **BOLD** exceed the NMOCD Guidelines
 Proposed excavated area

TABLE 1 Summary of Delineation Sampling Analytical Results Concentrations of Benzene, BTEX, TPH & Chloride in Soil Concho Operating, LLC Burch Keely Water Flood Satellite C Eddy, New Mexico NMOCD REF: 2RP-4052												
SAMPLE LOCATION	SAMPLE DEPTH (bgs)	SAMPLE DATE	SOIL STATUS	8021B					8015M			300.0
				BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYLBENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)	TOTAL BTEX (mg/Kg)	GRO (mg/Kg)	DRO (mg/Kg)	Total TPH (mg/Kg)	CHLORIDE (mg/Kg)
NMOCD - Guidelines for Remediation of Leaks, Spills and Releases				10	NE	NE	NE	50	NE	NE	5,000	600
Vertical Delineation Sampling												
T4	1'	1/9/2017	In-Situ	<0.200	4.48	4.92	8.07	17.5	105	391	496	3,600
T4	2'	1/9/2017	In-Situ	<0.050	0.069	0.227	0.559	0.855	<10.0	77.1	77.1	1,040
T4	3'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	5,040
T4	4'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	64.0
T4	5'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	16.0
T4	6'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	64.0
T4	7'	1/9/2017	In-Situ	-	-	-	-	-	-	-	-	32.0
T4	8'	1/9/2017	In-Situ	-	-	-	-	-	-	-	-	32.0
T5	1'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	256
T5	2'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	1,010
T5	3'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	896
T5	4'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	960
T5	5'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	512
T5	6'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	1,550
T5	7'	1/9/2017	In-Situ	-	-	-	-	-	-	-	-	1,580
T5	8'	1/9/2017	In-Situ	-	-	-	-	-	-	-	-	1,340
T5	10'	1/9/2017	In-Situ	-	-	-	-	-	-	-	-	1,540
T5	12'	1/9/2017	In-Situ	-	-	-	-	-	-	-	-	1,470
T5	14'	1/9/2017	In-Situ	-	-	-	-	-	-	-	-	1,230
T5	16'	1/9/2017	In-Situ	-	-	-	-	-	-	-	-	1,010
T5	17.5'	4/20/2017	In-Situ	-	-	-	-	-	-	-	-	793
T5	19'	4/20/2017	In-Situ	-	-	-	-	-	-	-	-	1,390
T5	22'	4/20/2017	In-Situ	-	-	-	-	-	-	-	-	1,120
T5	24'	4/20/2017	In-Situ	-	-	-	-	-	-	-	-	3,380
T5	25'	4/20/2017	In-Situ	-	-	-	-	-	-	-	-	2,880
T5	26.5'	4/20/2017	In-Situ	-	-	-	-	-	-	-	-	1,150
Soil Bore 1 @ T5	29'-30'	7/31/2017	In-Situ	-	-	-	-	-	-	-	-	2,450.7
Soil Bore 1 @ T5	39'-40'	7/31/2017	In-Situ	-	-	-	-	-	-	-	-	716.49
Soil Bore 1 @ T5	49'-50'	7/31/2017	In-Situ	-	-	-	-	-	-	-	-	511.79
Soil Bore 1 @ T5	59'-60'	7/31/2017	In-Situ	-	-	-	-	-	-	-	-	130.80
Soil Bore 1 @ T5	64'-65'	7/31/2017	In-Situ	-	-	-	-	-	-	-	-	254.54

mg/Kg - milligrams per Kilogram

— = Not Established

Concentrations in **BOLD** exceed the NMOCD Guidelines

	Proposed excavated area
	Proposed liner



APPENDIX C

Laboratory Analysis



Certificate of Analysis Summary 552080

COG Operating LLC, Artesia, NM

Project Name: BKU Satellite C Flowline



Project Id:

Contact: Aaron Lieb

Project Location: BKU Satellite C Flowline

Date Received in Lab: Fri Apr-28-17 11:00 am

Report Date: 04-MAY-17

Project Manager: Liz Givens

<i>Analysis Requested</i>	<i>Lab Id:</i>	552080-001	552080-002	552080-003	552080-004	552080-005	552080-006
	<i>Field Id:</i>	T-5 - 17.5'	T-5 - 19'	T-5 - 22'	T-5 - 24'	T-5 - 25'	T-5 - 26.5'
	<i>Depth:</i>	17.5 ft	19 ft	22 ft	24 ft	25 ft	2.5 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Apr-20-17 10:30	Apr-20-17 10:30	Apr-20-17 10:30	Apr-20-17 10:30	Apr-20-17 10:30	Apr-20-17 10:30
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	May-04-17 09:00	May-04-17 09:00	May-04-17 09:00	May-04-17 09:00	May-04-17 09:00	May-04-17 09:00
	<i>Analyzed:</i>	May-04-17 10:19	May-04-17 10:42	May-04-17 10:50	May-04-17 10:57	May-04-17 11:05	May-04-17 11:28
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		793 4.96	1390 24.5	1120 4.96	3380 25.0	2880 24.6	1150 4.97

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
Project Manager

Analytical Report 552080

for
COG Operating LLC

Project Manager: Aaron Lieb

BKU Satellite C Flowline

04-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)



04-MAY-17

Project Manager: **Aaron Lieb**

COG Operating LLC

2407 Pecos Avenue

Artesia, NM 88210

Reference: XENCO Report No(s): **552080**

BKU Satellite C Flowline

Project Address: BKU Satellite C Flowline

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) 552080. 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. 552080 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 552080****COG Operating LLC, Artesia, NM**

BKU Satellite C Flowline

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
T-5 - 17.5'	S	04-20-17 10:30	- 17.5 ft	552080-001
T-5 - 19'	S	04-20-17 10:30	- 19 ft	552080-002
T-5 - 22'	S	04-20-17 10:30	- 22 ft	552080-003
T-5 - 24'	S	04-20-17 10:30	- 24 ft	552080-004
T-5 - 25'	S	04-20-17 10:30	- 25 ft	552080-005
T-5 - 26.5'	S	04-20-17 10:30	- 2.5 ft	552080-006



CASE NARRATIVE

Client Name: COG Operating LLC
Project Name: BKU Satelite C Flowline

Project ID:
Work Order Number(s): 552080

Report Date: 04-MAY-17
Date Received: 04/28/2017

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 552080

COG Operating LLC, Artesia, NM

BKU Satellite C Flowline

Sample Id: T-5 - 17.5'

Matrix: Soil

Date Received: 04.28.17 11.00

Lab Sample Id: 552080-001

Date Collected: 04.20.17 10.30

Sample Depth: 17.5 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.04.17 09.00

Basis: Wet Weight

Seq Number: 3016516

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	793	4.96	mg/kg	05.04.17 10.19		1



Certificate of Analytical Results 552080

COG Operating LLC, Artesia, NM

BKU Satelite C Flowline

Sample Id: T-5 - 19'
Lab Sample Id: 552080-002

Matrix: Soil
Date Collected: 04.20.17 10.30

Date Received: 04.28.17 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: 05.04.17 09.00

Basis: Wet Weight

Seq Number: 3016516

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1390	24.5	mg/kg	05.04.17 10.42		5



Certificate of Analytical Results 552080

COG Operating LLC, Artesia, NM

BKU Satelite C Flowline

Sample Id: T-5 - 22'
Lab Sample Id: 552080-003

Matrix: Soil
Date Collected: 04.20.17 10.30

Date Received: 04.28.17 11.00
Sample Depth: 22 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.04.17 09.00

Basis: Wet Weight

Seq Number: 3016516

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1120	4.96	mg/kg	05.04.17 10.50		1



Certificate of Analytical Results 552080

COG Operating LLC, Artesia, NM

BKU Satelite C Flowline

Sample Id: T-5 - 24'
Lab Sample Id: 552080-004

Matrix: Soil
Date Collected: 04.20.17 10.30

Date Received: 04.28.17 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: 05.04.17 09.00

Basis: Wet Weight

Seq Number: 3016516

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3380	25.0	mg/kg	05.04.17 10.57		5



Certificate of Analytical Results 552080

COG Operating LLC, Artesia, NM

BKU Satelite C Flowline

Sample Id: T-5 - 25'
Lab Sample Id: 552080-005

Matrix: Soil
Date Collected: 04.20.17 10.30

Date Received: 04.28.17 11.00
Sample Depth: 25 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.04.17 09.00

Basis: Wet Weight

Seq Number: 3016516

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2880	24.6	mg/kg	05.04.17 11.05		5



Certificate of Analytical Results 552080

COG Operating LLC, Artesia, NM

BKU Satelite C Flowline

Sample Id: T-5 - 26.5'

Matrix: Soil

Date Received: 04.28.17 11.00

Lab Sample Id: 552080-006

Date Collected: 04.20.17 10.30

Sample Depth: 2.5 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.04.17 09.00

Basis: Wet Weight

Seq Number: 3016516

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1150	4.97	mg/kg	05.04.17 11.28		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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 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
BKU Satellite C Flowline

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3016516

Matrix: Solid

Prep Method: E300P

MB Sample Id: 724076-1-BLK

LCS Sample Id: 724076-1-BKS

Date Prep: 05.04.17

LCSD Sample Id: 724076-1-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	232	93	234	94	90-110	1	20	mg/kg	05.04.17 10:04	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3016516

Matrix: Soil

Prep Method: E300P

Parent Sample Id: 551955-002

MS Sample Id: 551955-002 S

Date Prep: 05.04.17

MSD Sample Id: 551955-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	9.04	250	260	100	263	102	90-110	1	20	mg/kg	05.04.17 12:13	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3016516

Matrix: Soil

Prep Method: E300P

Parent Sample Id: 552080-001

MS Sample Id: 552080-001 S

Date Prep: 05.04.17

MSD Sample Id: 552080-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	793	248	1030	96	1020	92	90-110	1	20	mg/kg	05.04.17 10:27	



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)

Client / Reporting Information						Project Information						Xenco Quote #		Xenco Job #		
Company Name / Branch: COG Operating LLC Company Address: 2407 PECOS Avenue Artesia NM 88210			Project Name/Number: BKU Satellite C Flowline Project Location: BKU Satellite C Flow											552080		
Email: ailebh@concho.com Phone No. 575-748-1553 direel2@concho.com haskell@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	Collection	Number of preserved bottles							Analytical Information		Matrix Codes				
		Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE		
1	TS - 17.5'	17.5	4/24/17	10:30 AM	S	1										
2	TS - 19'	19	4/24/17	10:30 AM	S	1										
3	TS - 22'	22														
4	TS - 24'	24														
5	TS - 25'	25														
6	TS - 26.5'	26.5														
7																
8																
9																
10																
Turnaround Time (Business days)																
Same Day TAT			<input checked="" type="checkbox"/> 5 Day TAT			<input type="checkbox"/> Level II Std QC			<input type="checkbox"/> Level IV (Full Data Pkg raw data)			Notes:				
Next Day EMERGENCY			<input type="checkbox"/> 7 Day TAT			<input type="checkbox"/> Level III Std QC+ Forms			<input type="checkbox"/> TRRP Level IV			* Need to Run ASAP				
2 Day EMERGENCY			<input type="checkbox"/> Contract TAT			<input type="checkbox"/> Level 3 (CLP Forms)			<input type="checkbox"/> UST / RG -411							
3 Day EMERGENCY						<input type="checkbox"/> TRRP Checklist										
TAT Starts Day received by Lab, if received by 5:00 pm																
Relinquished by Sampler:			Date Time: 4-26-17			Received By: J.D. Butler			Date Time: 4-29-17			Received By: HLCESIO				
Relinquished by:			Date Time:			Received By:			Date Time:			Received By:				
Relinquished by:			Date Time:			Received By:			Date Time:			Received By:				
Relinquished by:			Date Time:			Received By:			Date Time:			Received By:				
5			Custody Seal #			Preserved where applicable			On Ice			Cooler Temp.			Thermo. Corr. Factor	
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 all 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 will be enforced unless previously negotiated under a fully executed client contract.																



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: COG Operating LLC

Date/ Time Received: 04/28/2017 11:00:00 AM

Work Order #: 552080

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)?	5
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seal present on shipping container/ cooler?	Yes
#5 *Custody Seals intact on shipping container/ cooler?	Yes
#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)?	No
#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: 05/01/2017

Checklist reviewed by:

Brandi Ritcherson

Date: 05/01/2017



Certificate of Analysis Summary 558911

American Safety Services, Odessa, TX

Project Name: Burch Keely Water Flood Satellite C



Project Id:

Contact: Thomas Franklin

Project Location: Eddy Co.,NM

Date Received in Lab: Tue Aug-01-17 08:10 am

Report Date: 03-AUG-17

Project Manager: Brandi Ritcherson

<i>Analysis Requested</i>	<i>Lab Id:</i>	558911-001	558911-002	558911-003	558911-004	558911-005	
	<i>Field Id:</i>	Soil Bore-1 @ T5	Soil Bore-1 @ T5	Soil Bore-1 @ T5	Soil Bore-1 @ T5	Soil Bore-1 @ T5	
	<i>Depth:</i>	29-30 ft	39-40 ft	49-50 ft	59-60 ft	64-65 ft	
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	
	<i>Sampled:</i>	Jul-31-17 14:00	Jul-31-17 14:05	Jul-31-17 14:10	Jul-31-17 14:15	Jul-31-17 14:40	
Chloride by EPA 300	<i>Extracted:</i>	Aug-02-17 09:15	Aug-02-17 09:15	Aug-02-17 09:15	Aug-02-17 09:15	Aug-02-17 09:15	
	<i>Analyzed:</i>	Aug-02-17 10:23	Aug-02-17 10:00	Aug-02-17 10:31	Aug-02-17 10:39	Aug-02-17 10:46	
	<i>Units/RL:</i>	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL	
Chloride		2450.7 24.558	716.49 4.9310	511.79 4.9505	130.80 4.9900	254.54 4.9801	

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
Project Manager

Analytical Report 558911

for
American Safety Services

Project Manager: Thomas Franklin

Burch Keely Water Flood Satellite C

03-AUG-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)



03-AUG-17

Project Manager: **Thomas Franklin**
American Safety Services
8715 Andrews Hwy
Odessa, TX 79765

Reference: XENCO Report No(s): **558911**
Burch Keely Water Flood Satellite C
Project Address: Eddy Co.,NM

Thomas Franklin:

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) 558911. 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. 558911 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Brandi Ritcherson

Project Manager

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

**Sample Cross Reference 558911****American Safety Services, Odessa, TX**

Burch Keely Water Flood Satellite C

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Soil Bore-1 @ T5	S	07-31-17 14:00	29 - 30 ft	558911-001
Soil Bore-1 @ T5	S	07-31-17 14:05	39 - 40 ft	558911-002
Soil Bore-1 @ T5	S	07-31-17 14:10	49 - 50 ft	558911-003
Soil Bore-1 @ T5	S	07-31-17 14:15	59 - 60 ft	558911-004
Soil Bore-1 @ T5	S	07-31-17 14:40	64 - 65 ft	558911-005



CASE NARRATIVE

Client Name: American Safety Services

Project Name: Burch Keely Water Flood Satellite C

Project ID:

Work Order Number(s): 558911

Report Date: 03-AUG-17

Date Received: 08/01/2017

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3023912 Chloride by EPA 300

Lab Sample ID 558912-008 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: 558911-001, -002, -003, -004, -005.

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



Certificate of Analytical Results 558911

American Safety Services, Odessa, TX

Burch Keely Water Flood Satellite C

Sample Id: **Soil Bore-1 @ T5**

Matrix: Soil

Date Received: 08.01.17 08.10

Lab Sample Id: 558911-001

Date Collected: 07.31.17 14.00

Sample Depth: 29 - 30 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: RHE

% Moisture:

Analyst: MGO

Date Prep: 08.02.17 09.15

Basis: Wet Weight

Seq Number: 3023912

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2450.7	24.558	mg/L	08.02.17 10.23		5



Certificate of Analytical Results 558911

American Safety Services, Odessa, TX

Burch Keely Water Flood Satellite C

Sample Id: **Soil Bore-1 @ T5**

Matrix: Soil

Date Received: 08.01.17 08.10

Lab Sample Id: 558911-002

Date Collected: 07.31.17 14.05

Sample Depth: 39 - 40 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: RHE

% Moisture:

Analyst: MGO

Date Prep: 08.02.17 09.15

Basis: Wet Weight

Seq Number: 3023912

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	716.49	4.9310	mg/L	08.02.17 10.00		1



Certificate of Analytical Results 558911

American Safety Services, Odessa, TX

Burch Keely Water Flood Satellite C

Sample Id: **Soil Bore-1 @ T5**

Matrix: Soil

Date Received: 08.01.17 08.10

Lab Sample Id: 558911-003

Date Collected: 07.31.17 14.10

Sample Depth: 49 - 50 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: RHE

% Moisture:

Analyst: MGO

Date Prep: 08.02.17 09.15

Basis: Wet Weight

Seq Number: 3023912

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	511.79	4.9505	mg/L	08.02.17 10.31		1



Certificate of Analytical Results 558911

American Safety Services, Odessa, TX

Burch Keely Water Flood Satellite C

Sample Id: **Soil Bore-1 @ T5**

Matrix: Soil

Date Received: 08.01.17 08.10

Lab Sample Id: 558911-004

Date Collected: 07.31.17 14.15

Sample Depth: 59 - 60 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: RHE

% Moisture:

Analyst: MGO

Date Prep: 08.02.17 09.15

Basis: Wet Weight

Seq Number: 3023912

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	130.80	4.9900	mg/L	08.02.17 10.39		1



Certificate of Analytical Results 558911

American Safety Services, Odessa, TX

Burch Keely Water Flood Satellite C

Sample Id: **Soil Bore-1 @ T5**

Matrix: Soil

Date Received: 08.01.17 08.10

Lab Sample Id: 558911-005

Date Collected: 07.31.17 14.40

Sample Depth: 64 - 65 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: RHE

% Moisture:

Analyst: MGO

Date Prep: 08.02.17 09.15

Basis: Wet Weight

Seq Number: 3023912

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	254.54	4.9801	mg/L	08.02.17 10.46		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 **MQL** 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	



American Safety Services
Burch Keely Water Flood Satellite C

Analytical Method: Chloride by EPA 300

Seq Number: 3023912

MB Sample Id: 728598-1-BLK

Matrix: Solid

LCS Sample Id: 728598-1-BKS

Prep Method: E300P

Date Prep: 08.02.17

LCSD Sample Id: 728598-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.0000	250.00	262.15	105	261.22	104	90-110	0	20	mg/L	08.02.17 09:45	

Analytical Method: Chloride by EPA 300

Seq Number: 3023912

Parent Sample Id: 558911-002

Matrix: Soil

MS Sample Id: 558911-002 S

Prep Method: E300P

Date Prep: 08.02.17

MSD Sample Id: 558911-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	716.49	246.55	936.87	89	935.65	89	90-110	0	20	mg/L	08.02.17 10:08	X

Analytical Method: Chloride by EPA 300

Seq Number: 3023912

Parent Sample Id: 558912-008

Matrix: Soil

MS Sample Id: 558912-008 S

Prep Method: E300P

Date Prep: 08.02.17

MSD Sample Id: 558912-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1021.3	248.51	1222.3	81	1223.3	81	90-110	0	20	mg/L	08.02.17 11:55	X

CHAIN OF CUSTODY

Page 7 of 1

Client / Reporting Information						Project Information							Xenoco Quote #	Analytical Information	Xenoco Job #	Matrix Codes
Company Name / Branch: American Safety Services Inc.						Project Name/Number: Buckley Kelly Water Flood Site/Lite C							Xenoco Quote # 558911			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
Company Address: 8715 Andrews Hwy Odessa TX 79765						Project Location: Eddy Co NM										
Email: franklin@americansafety.net tzimmerman@americansafety.net						Invoice To: COG - Attn Buckley Haysell										
Phone No: 432-557-9868						PO Number:										
Project Contact: Thomas Franklin						Samplers' Name PR/MJD										
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCI	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Chloride (method 300)	Field Comments
1	Soil Bore -1 @ TS	29-30	7/31/17	1400	S	1									+	on ice
2		39-40		1405	S	1									+	
3		49-50		1410	S	1									+	
4		59-60		1415	S	1									+	
5		64-65		1440	S	1									+	
6																
7																
8																
9																
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 Date Pkg/raw data)		Email Results only to: reich@americansafety.net								
<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		franklin@american safety.net								
<input type="checkbox"/> 2 Day EMERGENCY		<input checked="" 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:		FED-EX / UPS Tracking:
1. [Signature]		8/1/17 5:10		1. [Signature]		8/1/17 5:10		2. [Signature]		8/1/17 5:10		2. [Signature]		8/1/17 5:10		
Relinquished by:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:		Date Time:		
3. [Signature]				3. [Signature]				4. [Signature]				4. [Signature]				
Relinquished by:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:		Date Time:		
5. [Signature]				5. [Signature]				6. [Signature]				6. [Signature]				
Temp: 3.5 IR ID: R-8 CF: (-0.6: -0.2°C) (-6.23: +0.2°C) Corrected Temp: 3.3 On Ice <input checked="" type="checkbox"/> Cooler Temp. Inertio. Corr. Factor																



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: American Safety Services

Date/ Time Received: 08/01/2017 08:10:00 AM

Work Order #: 558911

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist**Comments**

#1 *Temperature of cooler(s)?	3.3
#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)?	No
#21 VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Shawnee Smith

Date: 08/01/2017

Checklist reviewed by:

Brandi Ritcherson

Date: 08/01/2017



APPENDIX D

Initial C-141

NM OIL CONSERVATION

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

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

Form C-141
Revised August 8, 2011

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

Release Notification and Corrective Action

NAB1700438955 OPERATOR ☒ Initial Report ☐ Final Report

Name of Company: COG Operating LLC <i>229137</i>	Contact: Robert McNeill
Address: 600 West Illinois Avenue, Midland TX 79701	Telephone No. 432-683-7443
Facility Name: Burch Keely Water Flood Satellite C	Facility Type: Flowline

Surface Owner: Federal	Mineral Owner:	API No. 30-015-02971
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LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
H	13	17S	29E	1980	North	735	East	Eddy

Latitude 32.8364334 Longitude 104.0220566

NATURE OF RELEASE

Type of Release: Oil and Produced Water	Volume of Release: 15bbls Oil & 25bbls PW	Volume Recovered: 10bbls Oil & 20bbls PW
Source of Release: Flowline	Date and Hour of Occurrence: December 22, 2016 7:00 am	Date and Hour of Discovery: December 22, 2016 7:00 am
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Mr. Bratcher - NMOCD / Ms. Tucker - BLM	
By Whom? Dakota Neel	Date and Hour: December 22, 2016 3:08 pm	
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.*

The release was caused by a flowline leak on a buried flowline. The old flowline was abandoned and installed a new line.

Describe Area Affected and Cleanup Action Taken.*

The release was within a pasture. A vacuum truck was dispatched to remove all freestanding fluids. Concho will have the spill area sampled to delineate any possible impact from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation activities.

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>Crystal Weene</i>	
Title: Senior HSE Coordinator	Approval Date: <i>1/4/17</i>	Expiration Date: <i>N/A</i>
E-mail Address: <i>rhaskell@concho.com</i>	Conditions of Approval: <i>see attached</i>	Attached <input checked="" type="checkbox"/>
Date: 12/28/2016 Phone: 432-683-7443		

* Attach Additional Sheets If Necessary

APP 4052

APPENDIX VI



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

January 24, 2017

AARON LIEB

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: BURCH-KEELY WATER FLOOD SATELLITE 'C' FLOWLINE

Enclosed are the results of analyses for samples received by the laboratory on 01/19/17 10:48.

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 style with a large, stylized 'C' at the beginning.

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

COG OPERATING
AARON LIEB
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T1 -1' (H700132-01)

BTX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	14.8	5.00	01/21/2017	ND	1.79	89.3	2.00	0.878	
Toluene*	129	5.00	01/21/2017	ND	1.76	88.1	2.00	0.639	
Ethylbenzene*	101	5.00	01/21/2017	ND	1.82	90.8	2.00	1.11	
Total Xylenes*	159	15.0	01/21/2017	ND	5.30	88.4	6.00	1.11	
Total BTX	404	30.0	01/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 107 % 73.6-140

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	01/20/2017	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS						S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	3800	100	01/20/2017	ND	190	95.1	200	0.847		
DRO >C10-C28	11900	100	01/20/2017	ND	197	98.5	200	2.76		

Surrogate: 1-Chlorooctane 200 % 35-147

Surrogate: 1-Chlorooctadecane 291 % 28-171

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

COG OPERATING
AARON LIEB
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T1 -2' (H700132-02)

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	01/21/2017	ND	1.79	89.3	2.00	0.878		
Toluene*	0.077	0.050	01/21/2017	ND	1.76	88.1	2.00	0.639		
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	1.11		
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	1.11		
Total BTEx	<0.300	0.300	01/21/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.6-140

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	01/20/2017	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	01/20/2017	ND	190	95.1	200	0.847	
DRO >C10-C28	18.5	10.0	01/20/2017	ND	197	98.5	200	2.76	

Surrogate: 1-Chlorooctane 73.5 % 35-147

Surrogate: 1-Chlorooctadecane 86.4 % 28-171

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

COG OPERATING
AARON LIEB
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T1 -3' (H700132-03)

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	01/21/2017	ND	1.79	89.3	2.00	0.878		
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.1	2.00	0.639		
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	1.11		
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	1.11		
Total BTEx	<0.300	0.300	01/21/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 73.6-140

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	01/20/2017	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	01/20/2017	ND	190	95.1	200	0.847	
DRO >C10-C28	11.4	10.0	01/20/2017	ND	197	98.5	200	2.76	

Surrogate: 1-Chlorooctane 83.6 % 35-147

Surrogate: 1-Chlorooctadecane 96.8 % 28-171

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

COG OPERATING
AARON LIEB
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T1 -4' (H700132-04)

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	01/21/2017	ND	1.79	89.3	2.00	0.878		
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.1	2.00	0.639		
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	1.11		
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	1.11		
Total BTEx	<0.300	0.300	01/21/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.6-140

Chloride, SM4500CI-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	01/20/2017	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	01/20/2017	ND	190	95.1	200	0.847	
DRO >C10-C28	<10.0	10.0	01/20/2017	ND	197	98.5	200	2.76	

Surrogate: 1-Chlorooctane 82.8 % 35-147

Surrogate: 1-Chlorooctadecane 97.6 % 28-171

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

COG OPERATING
AARON LIEB
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T1 -5' (H700132-05)

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	01/21/2017	ND	1.79	89.3	2.00	0.878		
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.1	2.00	0.639		
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	1.11		
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	1.11		
Total BTEx	<0.300	0.300	01/21/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.6-140

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	01/20/2017	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	01/20/2017	ND	190	95.1	200	0.847	
DRO >C10-C28	<10.0	10.0	01/20/2017	ND	197	98.5	200	2.76	

Surrogate: 1-Chlorooctane 82.2 % 35-147

Surrogate: 1-Chlorooctadecane 94.2 % 28-171

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

COG OPERATING
AARON LIEB
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T1 -6' (H700132-06)

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	01/21/2017	ND	1.79	89.3	2.00	0.878		
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.1	2.00	0.639		
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	1.11		
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	1.11		
Total BTEx	<0.300	0.300	01/21/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.6-140

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	01/20/2017	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	01/20/2017	ND	190	95.1	200	0.847	
DRO >C10-C28	<10.0	10.0	01/20/2017	ND	197	98.5	200	2.76	

Surrogate: 1-Chlorooctane 75.4 % 35-147

Surrogate: 1-Chlorooctadecane 88.1 % 28-171

Sample ID: T1 -7' (H700132-07)

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	01/20/2017	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:

COG OPERATING
AARON LIEB
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T1 -8' (H700132-08)

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	01/20/2017	ND	416	104	400	3.77		

Sample ID: T1 -10' (H700132-09)

Chloride, SM4500CI-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	01/20/2017	ND	416	104	400	3.77	

Sample ID: T1 -12' (H700132-10)

Chloride, SM4500Cl-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	01/20/2017	ND	416	104	400	3.77	

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

COG OPERATING
AARON LIEB
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T2 -1' (H700132-11)

BTX 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	01/21/2017	ND	1.79	89.3	2.00	0.878		
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.1	2.00	0.639		
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	1.11		
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	1.11		
Total BTX	<0.300	0.300	01/21/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	4640	16.0	01/20/2017	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	01/20/2017	ND	190	95.1	200	0.847	
DRO >C10-C28	<10.0	10.0	01/20/2017	ND	197	98.5	200	2.76	

Surrogate: 1-Chlorooctane 77.4 % 35-147

Surrogate: 1-Chlorooctadecane 96.7 % 28-171

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

COG OPERATING
AARON LIEB
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T2 -2' (H700132-12)

BTEx 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/21/2017	ND	1.79	89.3	2.00	0.878	
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.1	2.00	0.639	
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	1.11	
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	1.11	
Total BTEX	<0.300	0.300	01/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	5040	16.0	01/20/2017	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	01/20/2017	ND	190	95.1	200	0.847	
DRO >C10-C28	62.9	10.0	01/20/2017	ND	197	98.5	200	2.76	

Surrogate: 1-Chlorooctane 92.4 % 35-147

Surrogate: 1-Chlorooctadecane 98.1 % 28-171

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Analytical Results For:

COG OPERATING
AARON LIEB
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T2 -3' (H700132-13)

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	01/21/2017	ND	1.79	89.3	2.00	0.878		
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.1	2.00	0.639		
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	1.11		
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	1.11		
Total BTEx	<0.300	0.300	01/21/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.6-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	832	16.0	01/20/2017	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/20/2017	ND	193	96.5	200	8.62	
DRO >C10-C28	<10.0	10.0	01/20/2017	ND	180	89.9	200	8.94	QR-03

Surrogate: 1-Chlorooctane 91.4 % 35-147

Surrogate: 1-Chlorooctadecane 88.5 % 28-171

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Analytical Results For:

COG OPERATING
AARON LIEB
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T2 -4' (H700132-14)

BTX 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	01/21/2017	ND	1.79	89.3	2.00	0.878		
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.1	2.00	0.639		
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	1.11		
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	1.11		
Total BTX	<0.300	0.300	01/21/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1100	16.0	01/20/2017	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/20/2017	ND	193	96.5	200	8.62	
DRO >C10-C28	<10.0	10.0	01/20/2017	ND	180	89.9	200	8.94	

Surrogate: 1-Chlorooctane 93.7 % 35-147

Surrogate: 1-Chlorooctadecane 92.4 % 28-171

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Analytical Results For:

COG OPERATING
AARON LIEB
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T2 -5' (H700132-15)

BTX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/21/2017	ND	1.77	88.6	2.00	0.222	
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.0	2.00	0.118	
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	0.0725	
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	0.0667	
Total BTX	<0.300	0.300	01/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1020	16.0	01/20/2017	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/20/2017	ND	193	96.5	200	8.62	
DRO >C10-C28	<10.0	10.0	01/20/2017	ND	180	89.9	200	8.94	

Surrogate: 1-Chlorooctane 84.9 % 35-147

Surrogate: 1-Chlorooctadecane 82.8 % 28-171

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Analytical Results For:

COG OPERATING
AARON LIEB
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T2 -6' (H700132-16)

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	01/21/2017	ND	1.77	88.6	2.00	0.222		
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.0	2.00	0.118		
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	0.0725		
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	0.0667		
Total BTEx	<0.300	0.300	01/21/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	560	16.0	01/20/2017	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/20/2017	ND	192	95.9	200	2.88	
DRO >C10-C28	<10.0	10.0	01/20/2017	ND	200	99.9	200	15.9	

Surrogate: 1-Chlorooctane 92.8 % 35-147

Surrogate: 1-Chlorooctadecane 82.8 % 28-171

Sample ID: T2 -7' (H700132-17)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	512	16.0	01/20/2017	ND	416	104	400	3.77		

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Analytical Results For:

COG OPERATING
AARON LIEB
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T2 -8' (H700132-18)

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	01/20/2017	ND	416	104	400	3.77		

Sample ID: T2 -10' (H700132-19)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	288	16.0	01/20/2017	ND	416	104	400	3.77	

Sample ID: T2 -12' (H700132-20)

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	01/23/2017	ND	416	104	400	0.00	

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Analytical Results For:

COG OPERATING
AARON LIEB
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T3 -1' (H700132-21)

BTX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/21/2017	ND	1.77	88.6	2.00	0.222	
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.0	2.00	0.118	
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	0.0725	
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	0.0667	
Total BTX	<0.300	0.300	01/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	4480	16.0	01/23/2017	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/20/2017	ND	192	95.9	200	2.88	
DRO >C10-C28	<10.0	10.0	01/20/2017	ND	200	99.9	200	15.9	

Surrogate: 1-Chlorooctane 97.5 % 35-147

Surrogate: 1-Chlorooctadecane 86.3 % 28-171

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Analytical Results For:

COG OPERATING
AARON LIEB
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T3 -2' (H700132-22)

BTEx 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/21/2017	ND	1.77	88.6	2.00	0.222	
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.0	2.00	0.118	
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	0.0725	
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	0.0667	
Total BTEx	<0.300	0.300	01/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	6320	16.0	01/23/2017	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/20/2017	ND	192	95.9	200	2.88	
DRO >C10-C28	<10.0	10.0	01/20/2017	ND	200	99.9	200	15.9	

Surrogate: 1-Chlorooctane 96.0 % 35-147

Surrogate: 1-Chlorooctadecane 85.7 % 28-171

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Analytical Results For:

COG OPERATING
AARON LIEB
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T3 -3' (H700132-23)

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	01/21/2017	ND	1.77	88.6	2.00	0.222		
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.0	2.00	0.118		
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	0.0725		
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	0.0667		
Total BTEx	<0.300	0.300	01/21/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	10900	16.0	01/23/2017	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/20/2017	ND	192	95.9	200	2.88	
DRO >C10-C28	<10.0	10.0	01/20/2017	ND	200	99.9	200	15.9	

Surrogate: 1-Chlorooctane 94.3 % 35-147

Surrogate: 1-Chlorooctadecane 83.4 % 28-171

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

COG OPERATING
AARON LIEB
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T3 -4' (H700132-24)

BTX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/21/2017	ND	1.77	88.6	2.00	0.222	
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.0	2.00	0.118	
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	0.0725	
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	0.0667	
Total BTX	<0.300	0.300	01/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.6-140

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	01/23/2017	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/20/2017	ND	192	95.9	200	2.88	
DRO >C10-C28	<10.0	10.0	01/20/2017	ND	200	99.9	200	15.9	

Surrogate: 1-Chlorooctane 96.7 % 35-147

Surrogate: 1-Chlorooctadecane 83.8 % 28-171

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Analytical Results For:

COG OPERATING
AARON LIEB
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T3 -5' (H700132-25)

BTX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/21/2017	ND	1.77	88.6	2.00	0.222	
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.0	2.00	0.118	
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	0.0725	
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	0.0667	
Total BTX	<0.300	0.300	01/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	01/23/2017	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/20/2017	ND	192	95.9	200	2.88	
DRO >C10-C28	<10.0	10.0	01/20/2017	ND	200	99.9	200	15.9	

Surrogate: 1-Chlorooctane 88.4 % 35-147

Surrogate: 1-Chlorooctadecane 80.3 % 28-171

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Analytical Results For:

COG OPERATING
AARON LIEB
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T3 -6' (H700132-26)

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	01/21/2017	ND	1.77	88.6	2.00	0.222		
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.0	2.00	0.118		
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	0.0725		
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	0.0667		
Total BTEx	<0.300	0.300	01/21/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.6-140

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	01/23/2017	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/20/2017	ND	192	95.9	200	2.88	
DRO >C10-C28	<10.0	10.0	01/20/2017	ND	200	99.9	200	15.9	

Surrogate: 1-Chlorooctane 84.1 % 35-147

Surrogate: 1-Chlorooctadecane 73.4 % 28-171

Sample ID: T3 -7' (H700132-27)

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	01/23/2017	ND	416	104	400	0.00		

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Analytical Results For:

COG OPERATING
 AARON LIEB
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T3 -8' (H700132-28)

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	01/23/2017	ND	416	104	400	0.00	

Sample ID: T3 -10' (H700132-29)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	01/23/2017	ND	416	104	400	0.00	

Sample ID: T3 -12' (H700132-30)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	01/23/2017	ND	416	104	400	0.00		

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Analytical Results For:

COG OPERATING
AARON LIEB
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T4 -1' (H700132-31)

BTEx 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	01/21/2017	ND	1.77	88.6	2.00	0.222	
Toluene*	4.48	0.200	01/21/2017	ND	1.76	88.0	2.00	0.118	
Ethylbenzene*	4.92	0.200	01/21/2017	ND	1.82	90.8	2.00	0.0725	
Total Xylenes*	8.07	0.600	01/21/2017	ND	5.30	88.4	6.00	0.0667	
Total BTEX	17.5	1.20	01/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 109 % 73.6-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	3600	16.0	01/23/2017	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	105	10.0	01/20/2017	ND	192	95.9	200	2.88	
DRO >C10-C28	391	10.0	01/20/2017	ND	200	99.9	200	15.9	

Surrogate: 1-Chlorooctane 105 % 35-147

Surrogate: 1-Chlorooctadecane 86.4 % 28-171

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Analytical Results For:

COG OPERATING
AARON LIEB
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T4 -2' (H700132-32)

BTX 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	01/21/2017	ND	1.77	88.6	2.00	0.222		
Toluene*	0.069	0.050	01/21/2017	ND	1.76	88.0	2.00	0.118		
Ethylbenzene*	0.227	0.050	01/21/2017	ND	1.82	90.8	2.00	0.0725		
Total Xylenes*	0.559	0.150	01/21/2017	ND	5.30	88.4	6.00	0.0667		
Total BTX	0.855	0.300	01/21/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 105 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1040	16.0	01/23/2017	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	01/20/2017	ND	192	95.9	200	2.88		
DRO >C10-C28	77.1	10.0	01/20/2017	ND	200	99.9	200	15.9		

Surrogate: 1-Chlorooctane 90.9 % 35-147

Surrogate: 1-Chlorooctadecane 79.6 % 28-171

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

COG OPERATING
AARON LIEB
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T4 -3' (H700132-33)

BTEx 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/21/2017	ND	1.77	88.6	2.00	0.222	
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.0	2.00	0.118	
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	0.0725	
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	0.0667	
Total BTEx	<0.300	0.300	01/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	5040	16.0	01/23/2017	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/20/2017	ND	192	95.9	200	2.88	
DRO >C10-C28	<10.0	10.0	01/20/2017	ND	200	99.9	200	15.9	

Surrogate: 1-Chlorooctane 92.8 % 35-147

Surrogate: 1-Chlorooctadecane 83.4 % 28-171

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

COG OPERATING
AARON LIEB
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T4 -4' (H700132-34)

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	01/21/2017	ND	1.77	88.6	2.00	0.222		
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.0	2.00	0.118		
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	0.0725		
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	0.0667		
Total BTEX	<0.300	0.300	01/21/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	01/23/2017	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/20/2017	ND	192	95.9	200	2.88	
DRO >C10-C28	<10.0	10.0	01/20/2017	ND	200	99.9	200	15.9	

Surrogate: 1-Chlorooctane 96.3 % 35-147

Surrogate: 1-Chlorooctadecane 95.8 % 28-171

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

COG OPERATING
 AARON LIEB
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T4 -5' (H700132-35)

BTX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/21/2017	ND	1.77	88.6	2.00	0.222	
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.0	2.00	0.118	
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	0.0725	
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	0.0667	
Total BTX	<0.300	0.300	01/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.6-140

Chloride, SM4500CI-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	01/23/2017	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/20/2017	ND	192	95.9	200	2.88	
DRO >C10-C28	<10.0	10.0	01/20/2017	ND	200	99.9	200	15.9	

Surrogate: 1-Chlorooctane 88.7 % 35-147

Surrogate: 1-Chlorooctadecane 94.7 % 28-171

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

COG OPERATING
AARON LIEB
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T4 -6' (H700132-36)

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	01/21/2017	ND	1.77	88.6	2.00	0.222		
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.0	2.00	0.118		
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	0.0725		
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	0.0667		
Total BTEx	<0.300	0.300	01/21/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 73.6-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	01/23/2017	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/20/2017	ND	192	95.9	200	2.88	
DRO >C10-C28	<10.0	10.0	01/20/2017	ND	200	99.9	200	15.9	

Surrogate: 1-Chlorooctane 95.7 % 35-147

Surrogate: 1-Chlorooctadecane 84.9 % 28-171

Sample ID: T4 -7' (H700132-37)

Chloride, SM4500Cl-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	01/23/2017	ND	416	104	400	0.00	

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Analytical Results For:

COG OPERATING
AARON LIEB
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T4 -8' (H700132-38)

Chloride, SM4500Cl-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	01/23/2017	ND	416	104	400	0.00	

Sample ID: T5 -1' (H700132-39)

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/21/2017	ND	1.77	88.6	2.00	0.222	
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.0	2.00	0.118	
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	0.0725	
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	0.0667	
Total BTEX	<0.300	0.300	01/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.6-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	256	16.0	01/23/2017	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/20/2017	ND	192	95.9	200	2.88	
DRO >C10-C28	<10.0	10.0	01/20/2017	ND	200	99.9	200	15.9	

Surrogate: 1-Chlorooctane 78.6 % 35-147

Surrogate: 1-Chlorooctadecane 82.7 % 28-171

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

COG OPERATING
AARON LIEB
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T5 -2' (H700132-40)

BTEx 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/21/2017	ND	1.77	88.6	2.00	0.222	
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.0	2.00	0.118	
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	0.0725	
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	0.0667	
Total BTEX	<0.300	0.300	01/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.6-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1010	16.0	01/23/2017	ND	416	104	400	3.92		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/20/2017	ND	192	95.9	200	2.88	
DRO >C10-C28	<10.0	10.0	01/20/2017	ND	200	99.9	200	15.9	

Surrogate: 1-Chlorooctane 80.2 % 35-147

Surrogate: 1-Chlorooctadecane 86.2 % 28-171

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Analytical Results For:

COG OPERATING
AARON LIEB
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T5 -3' (H700132-41)

BTEx 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/21/2017	ND	1.77	88.6	2.00	0.222	
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.0	2.00	0.118	
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	0.0725	
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	0.0667	
Total BTEX	<0.300	0.300	01/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	896	16.0	01/23/2017	ND	416	104	400	3.92	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/20/2017	ND	192	95.9	200	2.88	
DRO >C10-C28	<10.0	10.0	01/20/2017	ND	200	99.9	200	15.9	

Surrogate: 1-Chlorooctane 70.4 % 35-147

Surrogate: 1-Chlorooctadecane 75.1 % 28-171

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Analytical Results For:

COG OPERATING
AARON LIEB
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T5 -4' (H700132-42)

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	01/21/2017	ND	1.77	88.6	2.00	0.222		
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.0	2.00	0.118		
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	0.0725		
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	0.0667		
Total BTEx	<0.300	0.300	01/21/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	960	16.0	01/23/2017	ND	416	104	400	3.92		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/20/2017	ND	192	95.9	200	2.88	
DRO >C10-C28	<10.0	10.0	01/20/2017	ND	200	99.9	200	15.9	

Surrogate: 1-Chlorooctane 73.2 % 35-147

Surrogate: 1-Chlorooctadecane 81.8 % 28-171

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

COG OPERATING
AARON LIEB
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T5 -5' (H700132-43)

BTEx 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/21/2017	ND	1.77	88.6	2.00	0.222	
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.0	2.00	0.118	
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	0.0725	
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	0.0667	
Total BTEx	<0.300	0.300	01/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	512	16.0	01/23/2017	ND	416	104	400	3.92	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/20/2017	ND	192	95.9	200	2.88	
DRO >C10-C28	<10.0	10.0	01/20/2017	ND	200	99.9	200	15.9	

Surrogate: 1-Chlorooctane 88.3 % 35-147

Surrogate: 1-Chlorooctadecane 92.6 % 28-171

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Analytical Results For:

COG OPERATING
AARON LIEB
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T5 -6' (H700132-44)

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	01/21/2017	ND	1.77	88.6	2.00	0.222		
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.0	2.00	0.118		
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	0.0725		
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	0.0667		
Total BTEx	<0.300	0.300	01/21/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1550	16.0	01/23/2017	ND	416	104	400	3.92		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/20/2017	ND	192	95.9	200	2.88	
DRO >C10-C28	<10.0	10.0	01/20/2017	ND	200	99.9	200	15.9	

Surrogate: 1-Chlorooctane 93.1 % 35-147

Surrogate: 1-Chlorooctadecane 92.7 % 28-171

Sample ID: T5 -7' (H700132-45)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1580	16.0	01/23/2017	ND	416	104	400	3.92		

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Analytical Results For:

COG OPERATING
AARON LIEB
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T5 -8' (H700132-46)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1340	16.0	01/23/2017	ND	416	104	400	3.92		

Sample ID: T5 -10' (H700132-47)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1540	16.0	01/23/2017	ND	416	104	400	3.92	

Sample ID: T5 -12' (H700132-48)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1470	16.0	01/23/2017	ND	416	104	400	3.92	

Sample ID: T5 -14' (H700132-49)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1230	16.0	01/23/2017	ND	416	104	400	3.92	

Sample ID: T5 -16' (H700132-50)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1010	16.0	01/23/2017	ND	416	104	400	3.92	

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
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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Celey D. Keene, Lab Director/Quality Manager



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(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

BILL TO

ANALYSIS REQUEST

Company Name:	COG Operating LLC	P.O. #:	
Project Manager:	Aaron Lieb	Company:	COG Operating LLC
Address:	2407 Pecos Avenue	Attn:	Robert McNeill
City:	Artesia	State:	NM
Phone #:	575-748-1553	Fax #:	600 W Illinois
Project #:		City:	Midland
Project Name:	Burch-Keely Water Flood Satellite "C" Flowline	State:	TX
Project Location:		Zip:	79701
Sample Name:	Aaron Lieb	Phone #:	(432) 221-0388
		Fax #:	

FOR LAB USE ONLY											
Lab I.D.		Sample I.D.									
H100172											

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Relinquished By:	Date: 1-19-17	Received By:	Date: 1-19-17	Phone Result:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:	
Relinquished By:		Received By:		Fax Result:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #:	
REMARKS: dneel2@concho.com alieb@concho.com rgubbs@concho.com thaskell@concho.com							

Delivered By: (Circle One)	Sample Condition	CHECKED BY:
Sampler - UPS - Bus - Other: #75	Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/>	(Initials)
	Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/>	



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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: COG Operating LLC		BILL TO		ANALYSIS REQUEST													
Project Manager: Aaron Lieb		P.O. #:															
Address: 2407 Pecos Avenue		Company: COG Operating LLC															
City: Artesia		Attn: Robert McNeill															
State: NM		Address: 600 W Illinois															
Zip: 88210		City: Midland															
Phone #: 575-748-1553		State: TX															
Fax #:		Zip: 79701															
Project #:		Phone #: (432) 221-0388															
Project Name: Burch-Keely Water Flood Satellite "C" Flowline		Fax #:															
Project Location:																	
Sampler Name: Aaron Lieb																	
FOR LAB USE ONLY																	
Lab I.D.																	
Sample I.D.																	
H100132																	
21																	
22																	
23																	
24																	
25																	
26																	
27																	
28																	
29																	
30																	
T3-1'																	
T3-2'																	
T3-3'																	
T3-4'																	
T3-5'																	
T3-6'																	
T3-7'																	
T3-8'																	
T3-10'																	
T3-12'																	
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Relinquished By:		Date: 1-19-17		Received By:		Date: 10/14/18											
Relinquished By:				Received By:													
Delivered By: (Circle One)				Sample Condition		CHECKED BY:											
Sampler - UPS - Bus - Other:				<input checked="" type="checkbox"/> Cool <input type="checkbox"/> Intact		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No											
#75 1.10																	
FORM 1000 RZ-0																	



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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]



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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: COG Operating LLC						P.O. #:								
Project Manager: Aaron Lieb						Company: COG Operating LLC								
Address: 2407 Pecos Avenue						Attn: Robert McNeill								
City: Artesia						State: NM Zip: 88210								
Phone #: 575-748-1553						Fax #: 600 W Illinois								
Project Owner: Project Location: Burch-Keely Water Flood Satellite "C" Flowline						City: Midland								
Project Name: State: TX Zip: 79701						Phone #: (432) 221-0388								
Sample Name: Aaron Lieb						Fax #:								
FOR LAB USE ONLY														
Lab I.D.						Sample I.D.								
H1700132						(G)RAB OR (C)OMP.								
						# CONTAINERS								
						GROUNDWATER								
						WASTEWATER								
						SOIL								
						OIL								
						SLUDGE								
						OTHER :								
						ACID/BASE:								
						ICE / COOL								
						OTHER :								
						DATE								
						TIME								
T5-3'						X	1/9/17	3:45 PM	BTEX	X	TPH	X	Chloride	X
41														
42						T5-4'	X	1/9/17	3:45 PM	X	X	X	X	X
43						T5-5'	X	1/9/17	3:45 PM	X	X	X	X	X
44						T5-6'	X	1/9/17	3:45 PM	X	X	X	X	X
45						T5-7'	X	1/9/17	3:45 PM	X	X	X	X	X
46						T5-8'	X	1/9/17	3:45 PM	X	X	X	X	X
47						T5-10'	X	1/9/17	3:45 PM	X	X	X	X	X
48						T5-12'	X	1/9/17	3:45 PM	X	X	X	X	X
49						T5-14'	X	1/9/17	3:45 PM	X	X	X	X	X
50						T5-16'	X	1/9/17	3:45 PM	X	X	X	X	X
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Relinquished By:						Date: 1-19-17								
Time: 10:48						Received By: [Signature]								
Relinquished By:						Date:								
Time:						Received By:								
Delivered By: (Circle One)						Sample Condition								
Cool Intact						Checked BY: [Signature]								
Yes Yes														
No No														
Sampler - UPS - Bus - Other:						#75								
1.12														
[Initials]														
REMARKS:						dhneel2@concho.com								
						alibeb@concho.com								
						rtgrubbs@concho.com								
						rthaskell@concho.com								



Certificate of Analysis Summary 552080

COG Operating LLC, Artesia, NM

Project Name: BKU Satellite C Flowline



Project Id:

Contact: Aaron Lieb

Project Location: BKU Satellite C Flowline

Date Received in Lab: Fri Apr-28-17 11:00 am

Report Date: 04-MAY-17

Project Manager: Liz Givens

<i>Analysis Requested</i>	<i>Lab Id:</i>	552080-001	552080-002	552080-003	552080-004	552080-005	552080-006
	<i>Field Id:</i>	T-5 - 17.5'	T-5 - 19'	T-5 - 22'	T-5 - 24'	T-5 - 25'	T-5 - 26.5'
	<i>Depth:</i>	17.5 ft	19 ft	22 ft	24 ft	25 ft	2.5 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Apr-20-17 10:30	Apr-20-17 10:30	Apr-20-17 10:30	Apr-20-17 10:30	Apr-20-17 10:30	Apr-20-17 10:30
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	May-04-17 09:00	May-04-17 09:00	May-04-17 09:00	May-04-17 09:00	May-04-17 09:00	May-04-17 09:00
	<i>Analyzed:</i>	May-04-17 10:19	May-04-17 10:42	May-04-17 10:50	May-04-17 10:57	May-04-17 11:05	May-04-17 11:28
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		793 4.96	1390 24.5	1120 4.96	3380 25.0	2880 24.6	1150 4.97

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
Project Manager

Analytical Report 552080

for
COG Operating LLC

Project Manager: Aaron Lieb

BKU Satellite C Flowline

04-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)



04-MAY-17

Project Manager: **Aaron Lieb**

COG Operating LLC

2407 Pecos Avenue

Artesia, NM 88210

Reference: XENCO Report No(s): **552080**

BKU Satellite C Flowline

Project Address: BKU Satellite C Flowline

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) 552080. 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. 552080 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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Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America

**Sample Cross Reference 552080****COG Operating LLC, Artesia, NM**

BKU Satellite C Flowline

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
T-5 - 17.5'	S	04-20-17 10:30	- 17.5 ft	552080-001
T-5 - 19'	S	04-20-17 10:30	- 19 ft	552080-002
T-5 - 22'	S	04-20-17 10:30	- 22 ft	552080-003
T-5 - 24'	S	04-20-17 10:30	- 24 ft	552080-004
T-5 - 25'	S	04-20-17 10:30	- 25 ft	552080-005
T-5 - 26.5'	S	04-20-17 10:30	- 2.5 ft	552080-006



CASE NARRATIVE

Client Name: COG Operating LLC
Project Name: BKU Satelite C Flowline

Project ID:
Work Order Number(s): 552080

Report Date: 04-MAY-17
Date Received: 04/28/2017

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 552080

COG Operating LLC, Artesia, NM

BKU Satelite C Flowline

Sample Id: T-5 - 17.5'

Matrix: Soil

Date Received: 04.28.17 11.00

Lab Sample Id: 552080-001

Date Collected: 04.20.17 10.30

Sample Depth: 17.5 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.04.17 09.00

Basis: Wet Weight

Seq Number: 3016516

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	793	4.96	mg/kg	05.04.17 10.19		1



Certificate of Analytical Results 552080

COG Operating LLC, Artesia, NM

BKU Satelite C Flowline

Sample Id: T-5 - 19'
Lab Sample Id: 552080-002

Matrix: Soil
Date Collected: 04.20.17 10.30

Date Received: 04.28.17 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: 05.04.17 09.00

Basis: Wet Weight

Seq Number: 3016516

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1390	24.5	mg/kg	05.04.17 10.42		5



Certificate of Analytical Results 552080

COG Operating LLC, Artesia, NM

BKU Satellite C Flowline

Sample Id: T-5 - 22'
Lab Sample Id: 552080-003

Matrix: Soil
Date Collected: 04.20.17 10.30

Date Received: 04.28.17 11.00
Sample Depth: 22 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.04.17 09.00

Basis: Wet Weight

Seq Number: 3016516

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1120	4.96	mg/kg	05.04.17 10.50		1



Certificate of Analytical Results 552080

COG Operating LLC, Artesia, NM

BKU Satelite C Flowline

Sample Id: T-5 - 24'
Lab Sample Id: 552080-004

Matrix: Soil
Date Collected: 04.20.17 10.30

Date Received: 04.28.17 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: 05.04.17 09.00

Basis: Wet Weight

Seq Number: 3016516

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3380	25.0	mg/kg	05.04.17 10.57		5



Certificate of Analytical Results 552080

COG Operating LLC, Artesia, NM

BKU Satelite C Flowline

Sample Id: T-5 - 25'
Lab Sample Id: 552080-005

Matrix: Soil
Date Collected: 04.20.17 10.30

Date Received: 04.28.17 11.00
Sample Depth: 25 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.04.17 09.00

Basis: Wet Weight

Seq Number: 3016516

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2880	24.6	mg/kg	05.04.17 11.05		5



Certificate of Analytical Results 552080

COG Operating LLC, Artesia, NM

BKU Satelite C Flowline

Sample Id: T-5 - 26.5'

Matrix: Soil

Date Received: 04.28.17 11.00

Lab Sample Id: 552080-006

Date Collected: 04.20.17 10.30

Sample Depth: 2.5 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.04.17 09.00

Basis: Wet Weight

Seq Number: 3016516

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1150	4.97	mg/kg	05.04.17 11.28		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
BKU Satellite C Flowline

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3016516

Matrix: Solid

Prep Method: E300P

MB Sample Id: 724076-1-BLK

LCS Sample Id: 724076-1-BKS

Date Prep: 05.04.17

LCSD Sample Id: 724076-1-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	232	93	234	94	90-110	1	20	mg/kg	05.04.17 10:04	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3016516

Matrix: Soil

Prep Method: E300P

Parent Sample Id: 551955-002

MS Sample Id: 551955-002 S

Date Prep: 05.04.17

MSD Sample Id: 551955-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	9.04	250	260	100	263	102	90-110	1	20	mg/kg	05.04.17 12:13	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3016516

Matrix: Soil

Prep Method: E300P

Parent Sample Id: 552080-001

MS Sample Id: 552080-001 S

Date Prep: 05.04.17

MSD Sample Id: 552080-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	793	248	1030	96	1020	92	90-110	1	20	mg/kg	05.04.17 10:27	



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)

www.xenco.com

Client / Reporting Information		Project Information		Xenco Quote #		Xenco Job #													
Company Name / Branch: COG Operating LLC		Project Name/Number: BKU Satellite C Flowline																	
Company Address: 2407 PECOS Avenue Artesia NM 88210		Project Location: BKU Satellite C Flow																	
Email: allen@concho.com dneel2@concho.com mskell@concho.com		Invoice To: COG Operating LLC Attn: Robert McCrell 600 W. Illinois Midland TX 79701																	
Project Contact: Aaron Lieb		PO Number:																	
Samplers 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	Number of preserved bottles	Analytical Information		Matrix Codes	
1	TS - 17.5'	17.5	4/24/17	1030AM	S	1													
2	TS - 19'	19	4/24/17	1030AM	S	1													
3	TS - 22'	22	4/24/17	1030AM	S	1													
4	TS - 24'	24				1													
5	TS - 25'	25				1													
6	TS - 26.5'	26.5				1													
7																			
8																			
9																			
10																			
Turnaround Time (Business days)																			
Data Deliverable Information																			
<input type="checkbox"/> Same Day TAT		<input checked="" type="checkbox"/> 5 Day TAT																	
<input type="checkbox"/> Next Day EMERGENCY		<input type="checkbox"/> 7 Day TAT																	
<input type="checkbox"/> 2 Day EMERGENCY		<input type="checkbox"/> Contract TAT																	
<input type="checkbox"/> 3 Day EMERGENCY																			
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:	
1. [Signature]		4-28-17 10:00		[Signature]		4-28-17 10:00		[Signature]		4-28-17 10:00		[Signature]		4-28-17 10:00		[Signature]		4-28-17 10:00	
Relinquished by:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:	
3. [Signature]		4-28-17 10:00		[Signature]		4-28-17 10:00		[Signature]		4-28-17 10:00		[Signature]		4-28-17 10:00		[Signature]		4-28-17 10:00	
Relinquished by:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:	
5. [Signature]		4-28-17 10:00		[Signature]		4-28-17 10:00		[Signature]		4-28-17 10:00		[Signature]		4-28-17 10:00		[Signature]		4-28-17 10:00	
Custody Seal #																			
Preserved where applicable																			
On Ice																			
Cooler Temp.																			
Thermo. Corr. Factor																			
FED-EX / UPS: Tracking #																			
Notes:																			
*Need to Run ASAP																			
Field Comments																			
Chloride																			
W = Water																			
S = Soil/Sed/Solid																			
GW = Ground Water																			
P = Product																			
SW = Surface water																			
SL = Sludge																			
OW = Ocean/Sea Water																			
WI = Wipe																			
O = Oil																			
WW = Waste Water																			
A = Air																			



Client: COG Operating LLC

Date/ Time Received: 04/28/2017 11:00:00 AM

Work Order #: 552080

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)?	5
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seal present on shipping container/ cooler?	Yes
#5 *Custody Seals intact on shipping container/ cooler?	Yes
#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)?	No
#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: 05/01/2017

Checklist reviewed by:

Brandi Ritcherson

Date: 05/01/2017



Certificate of Analysis Summary 579573

COG Operating LLC, Artesia, NM

Project Name: Burch Keely Flood Sattelite C

Project Id:

Contact: Sheldon Hitchcock

Project Location: Eddy CO NM

Date Received in Lab: Mon Mar-19-18 08:00 am

Report Date: 22-MAR-18

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	579573-001	579573-002	579573-003	579573-004	579573-005	579573-006
	<i>Field Id:</i>	T-1 E Sidewall	T-1 W Sidewall	T-1 S./T-2 N.	T-2 E. Sidewall	T-2 W. Sidewall	T-2 S./ T-3 N.
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Mar-05-18 08:00	Mar-06-18 08:05	Mar-07-18 08:10	Mar-08-18 08:15	Mar-09-18 08:20	Mar-09-18 08:25
Chloride by EPA 300	<i>Extracted:</i>	Mar-21-18 09:00	Mar-21-18 09:00	Mar-21-18 09:00	Mar-21-18 09:00	Mar-21-18 09:00	Mar-21-18 09:00
	<i>Analyzed:</i>	Mar-21-18 10:10	Mar-21-18 10:15	Mar-21-18 10:21	Mar-21-18 10:26	Mar-21-18 10:31	Mar-21-18 10:47
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		13.5 5.00	6.92 4.99	<5.00 5.00	<4.99 4.99	<5.00 5.00	589 5.00

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.

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Version: 1.9%

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 579573

COG Operating LLC, Artesia, NM

Project Name: Burch Keely Flood Sattelite C



Project Id:

Contact: Sheldon Hitchcock

Project Location: Eddy CO NM

Date Received in Lab: Mon Mar-19-18 08:00 am

Report Date: 22-MAR-18

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	579573-007	579573-008	579573-009	579573-010	579573-011	579573-012
	<i>Field Id:</i>	T-3 E. Sidewall	T-3 W. Sidewall	T-3 S./ T-5 N.	T-5 E. Sidewall	T-5 W. Sidewall	T-5 S./ T-4 N.
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Mar-09-18 08:30	Mar-09-18 08:35	Mar-09-18 08:40	Mar-09-18 08:45	Mar-05-18 08:50	Mar-06-18 08:55
Chloride by EPA 300	<i>Extracted:</i>	Mar-21-18 09:00	Mar-21-18 09:00	Mar-21-18 09:00	Mar-21-18 09:00	Mar-21-18 09:00	Mar-21-18 09:00
	<i>Analyzed:</i>	Mar-21-18 10:52	Mar-21-18 11:08	Mar-21-18 11:14	Mar-21-18 11:19	Mar-21-18 11:24	Mar-21-18 11:30
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		27.3 5.00	23.7 5.00	<5.00 5.00	18.4 5.00	22.6 5.00	<4.99 4.99

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Version: 1.9%

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 579573

COG Operating LLC, Artesia, NM

Project Name: Burch Keely Flood Sattelite C



Project Id:

Contact: Sheldon Hitchcock

Project Location: Eddy CO NM

Date Received in Lab: Mon Mar-19-18 08:00 am

Report Date: 22-MAR-18

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	579573-013	579573-014	579573-015			
	<i>Field Id:</i>	T-4 E. Sidewall	T-4 W. Sidewall	T-4 S. Sidewall			
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL			
	<i>Sampled:</i>	Mar-07-18 09:00	Mar-08-18 09:05	Mar-09-18 09:10			
Chloride by EPA 300	<i>Extracted:</i>	Mar-21-18 09:00	Mar-21-18 09:00	Mar-21-18 11:00			
	<i>Analyzed:</i>	Mar-21-18 11:40	Mar-21-18 11:45	Mar-21-18 12:17			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		<5.00 5.00	<4.99 4.99	<5.00 5.00			

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Jessica Kramer
Project Assistant

Analytical Report 579573

for
COG Operating LLC

Project Manager: Sheldon Hitchcock

Burch Keely Flood Sattelite C

22-MAR-18

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-18-24), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab code: TX01468):

Texas (T104704295-17-16), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab code: TX00127): Texas (T104704221-17-12)

Xenco-Lubbock (EPA Lab code: TX00139): Texas (T104704219-17-16)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-18-14)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)

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

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

Xenco-Atlanta (LELAP Lab ID #04176)



22-MAR-18

Project Manager: **Sheldon Hitchcock**
COG Operating LLC
2407 Pecos Avenue
Artesia, NM 88210

Reference: XENCO Report No(s): **579573**
Burch Keely Flood Sattelite C
Project Address: Eddy CO NM

Sheldon Hitchcock:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 579573. 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. 579573 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'.

Jessica Kramer
Project Assistant

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

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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Sample Cross Reference 579573

COG Operating LLC, Artesia, NM

Burch Keely Flood Sattelite C

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
T-1 E Sidewall	S	03-05-18 08:00		579573-001
T-1 W Sidewall	S	03-06-18 08:05	ft	579573-002
T-1 S./T-2 N.	S	03-07-18 08:10	ft	579573-003
T-2 E. Sidewall	S	03-08-18 08:15	ft	579573-004
T-2 W. Sidewall	S	03-09-18 08:20	ft	579573-005
T-2 S./ T-3 N.	S	03-09-18 08:25	ft	579573-006
T-3 E. Sidewall	S	03-09-18 08:30	ft	579573-007
T-3 W. Sidewall	S	03-09-18 08:35	ft	579573-008
T-3 S./ T-5 N.	S	03-09-18 08:40	ft	579573-009
T-5 E. Sidewall	S	03-09-18 08:45	ft	579573-010
T-5 W. Sidewall	S	03-05-18 08:50	ft	579573-011
T-5 S./ T-4 N.	S	03-06-18 08:55	ft	579573-012
T-4 E. Sidewall	S	03-07-18 09:00	ft	579573-013
T-4 W. Sidewall	S	03-08-18 09:05	ft	579573-014
T-4 S. Sidewall	S	03-09-18 09:10	ft	579573-015



CASE NARRATIVE

Client Name: COG Operating LLC

Project Name: Burch Keely Flood Sattelite C

Project ID:

Work Order Number(s): 579573

Report Date: 22-MAR-18

Date Received: 03/19/2018

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3044438 Chloride by EPA 300

Lab Sample ID 579577-006 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 579573-015.

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



Certificate of Analytical Results 579573

COG Operating LLC, Artesia, NM

Burch Keely Flood Sattelite C

Sample Id: T-1 E Sidewall

Matrix: Soil

Date Received: 03.19.18 08.00

Lab Sample Id: 579573-001

Date Collected: 03.05.18 08.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: LRI

% Moisture:

Analyst: SCM

Date Prep: 03.21.18 09.00

Basis: Wet Weight

Seq Number: 3044435

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	13.5	5.00	mg/kg	03.21.18 10.10		1



Certificate of Analytical Results 579573

COG Operating LLC, Artesia, NM

Burch Keely Flood Sattelite C

Sample Id: T-1 W Sidewall

Matrix: Soil

Date Received: 03.19.18 08.00

Lab Sample Id: 579573-002

Date Collected: 03.06.18 08.05

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: LRI

% Moisture:

Analyst: SCM

Date Prep: 03.21.18 09.00

Basis: Wet Weight

Seq Number: 3044435

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.92	4.99	mg/kg	03.21.18 10.15		1



Certificate of Analytical Results 579573

COG Operating LLC, Artesia, NM

Burch Keely Flood Sattelite C

Sample Id: T-1 S./T-2 N.

Matrix: Soil

Date Received: 03.19.18 08.00

Lab Sample Id: 579573-003

Date Collected: 03.07.18 08.10

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: LRI

% Moisture:

Analyst: SCM

Date Prep: 03.21.18 09.00

Basis: Wet Weight

Seq Number: 3044435

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	03.21.18 10.21	U	1



Certificate of Analytical Results 579573

COG Operating LLC, Artesia, NM

Burch Keely Flood Sattelite C

Sample Id: T-2 E. Sidewall

Matrix: Soil

Date Received: 03.19.18 08.00

Lab Sample Id: 579573-004

Date Collected: 03.08.18 08.15

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: LRI

% Moisture:

Analyst: SCM

Date Prep: 03.21.18 09.00

Basis: Wet Weight

Seq Number: 3044435

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.99	4.99	mg/kg	03.21.18 10.26	U	1



Certificate of Analytical Results 579573

COG Operating LLC, Artesia, NM

Burch Keely Flood Sattelite C

Sample Id: T-2 W. Sidewall

Matrix: Soil

Date Received: 03.19.18 08.00

Lab Sample Id: 579573-005

Date Collected: 03.09.18 08.20

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: LRI

% Moisture:

Analyst: SCM

Date Prep: 03.21.18 09.00

Basis: Wet Weight

Seq Number: 3044435

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	03.21.18 10.31	U	1



Certificate of Analytical Results 579573

COG Operating LLC, Artesia, NM

Burch Keely Flood Sattelite C

Sample Id: T-2 S./ T-3 N.

Matrix: Soil

Date Received: 03.19.18 08.00

Lab Sample Id: 579573-006

Date Collected: 03.09.18 08.25

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: LRI

% Moisture:

Analyst: SCM

Date Prep: 03.21.18 09.00

Basis: Wet Weight

Seq Number: 3044435

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	589	5.00	mg/kg	03.21.18 10.47		1



Certificate of Analytical Results 579573

COG Operating LLC, Artesia, NM

Burch Keely Flood Sattelite C

Sample Id: T-3 E. Sidewall

Matrix: Soil

Date Received: 03.19.18 08.00

Lab Sample Id: 579573-007

Date Collected: 03.09.18 08.30

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: LRI

% Moisture:

Analyst: SCM

Date Prep: 03.21.18 09.00

Basis: Wet Weight

Seq Number: 3044435

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	27.3	5.00	mg/kg	03.21.18 10.52		1



Certificate of Analytical Results 579573

COG Operating LLC, Artesia, NM

Burch Keely Flood Sattelite C

Sample Id: T-3 W. Sidewall

Matrix: Soil

Date Received: 03.19.18 08.00

Lab Sample Id: 579573-008

Date Collected: 03.09.18 08.35

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: LRI

% Moisture:

Analyst: SCM

Date Prep: 03.21.18 09.00

Basis: Wet Weight

Seq Number: 3044435

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	23.7	5.00	mg/kg	03.21.18 11.08		1



Certificate of Analytical Results 579573

COG Operating LLC, Artesia, NM

Burch Keely Flood Sattelite C

Sample Id: T-3 S./ T-5 N.

Matrix: Soil

Date Received: 03.19.18 08.00

Lab Sample Id: 579573-009

Date Collected: 03.09.18 08.40

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: LRI

% Moisture:

Analyst: SCM

Date Prep: 03.21.18 09.00

Basis: Wet Weight

Seq Number: 3044435

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	03.21.18 11.14	U	1



Certificate of Analytical Results 579573

COG Operating LLC, Artesia, NM

Burch Keely Flood Sattelite C

Sample Id: T-5 E. Sidewall

Matrix: Soil

Date Received: 03.19.18 08.00

Lab Sample Id: 579573-010

Date Collected: 03.09.18 08.45

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: LRI

% Moisture:

Analyst: SCM

Date Prep: 03.21.18 09.00

Basis: Wet Weight

Seq Number: 3044435

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	18.4	5.00	mg/kg	03.21.18 11.19		1



Certificate of Analytical Results 579573

COG Operating LLC, Artesia, NM

Burch Keely Flood Sattelite C

Sample Id: T-5 W. Sidewall

Matrix: Soil

Date Received: 03.19.18 08.00

Lab Sample Id: 579573-011

Date Collected: 03.05.18 08.50

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: LRI

% Moisture:

Analyst: SCM

Date Prep: 03.21.18 09.00

Basis: Wet Weight

Seq Number: 3044435

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	22.6	5.00	mg/kg	03.21.18 11.24		1



Certificate of Analytical Results 579573

COG Operating LLC, Artesia, NM

Burch Keely Flood Sattelite C

Sample Id: T-5 S./ T-4 N.

Matrix: Soil

Date Received: 03.19.18 08.00

Lab Sample Id: 579573-012

Date Collected: 03.06.18 08.55

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: LRI

% Moisture:

Analyst: SCM

Date Prep: 03.21.18 09.00

Basis: Wet Weight

Seq Number: 3044435

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.99	4.99	mg/kg	03.21.18 11.30	U	1



Certificate of Analytical Results 579573

COG Operating LLC, Artesia, NM

Burch Keely Flood Sattelite C

Sample Id: T-4 E. Sidewall

Matrix: Soil

Date Received: 03.19.18 08.00

Lab Sample Id: 579573-013

Date Collected: 03.07.18 09.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: LRI

% Moisture:

Analyst: SCM

Date Prep: 03.21.18 09.00

Basis: Wet Weight

Seq Number: 3044435

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	03.21.18 11.40	U	1



Certificate of Analytical Results 579573

COG Operating LLC, Artesia, NM

Burch Keely Flood Sattelite C

Sample Id: T-4 W. Sidewall

Matrix: Soil

Date Received: 03.19.18 08.00

Lab Sample Id: 579573-014

Date Collected: 03.08.18 09.05

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: LRI

% Moisture:

Analyst: SCM

Date Prep: 03.21.18 09.00

Basis: Wet Weight

Seq Number: 3044435

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.99	4.99	mg/kg	03.21.18 11.45	U	1



Certificate of Analytical Results 579573

COG Operating LLC, Artesia, NM

Burch Keely Flood Sattelite C

Sample Id: T-4 S. Sidewall

Matrix: Soil

Date Received: 03.19.18 08.00

Lab Sample Id: 579573-015

Date Collected: 03.09.18 09.10

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 03.21.18 11.00

Basis: Wet Weight

Seq Number: 3044438

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	03.21.18 12.17	U	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 **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



COG Operating LLC
Burch Keely Flood Sattelite C

Analytical Method: Chloride by EPA 300

Seq Number: 3044435

MB Sample Id: 7641170-1-BLK

Matrix: Solid

LCS Sample Id: 7641170-1-BKS

Prep Method: E300P

Date Prep: 03.21.18

LCSD Sample Id: 7641170-1-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	233	93	233	93	90-110	0	20	mg/kg	03.21.18 09:06	

Analytical Method: Chloride by EPA 300

Seq Number: 3044435

MB Sample Id: 7641195-1-BLK

Matrix: Solid

LCS Sample Id: 7641195-1-BKS

Prep Method: E300P

Date Prep: 03.21.18

LCSD Sample Id: 7641195-1-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	268	107	239	96	90-110	11	20	mg/kg	03.21.18 12:07	

Analytical Method: Chloride by EPA 300

Seq Number: 3044435

Parent Sample Id: 579572-014

Matrix: Soil

MS Sample Id: 579572-014 S

Prep Method: E300P

Date Prep: 03.21.18

MSD Sample Id: 579572-014 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	265	106	256	102	90-110	3	20	mg/kg	03.21.18 09:22	

Analytical Method: Chloride by EPA 300

Seq Number: 3044435

Parent Sample Id: 579573-005

Matrix: Soil

MS Sample Id: 579573-005 S

Prep Method: E300P

Date Prep: 03.21.18

MSD Sample Id: 579573-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	245	98	242	97	90-110	1	20	mg/kg	03.21.18 10:37	

Analytical Method: Chloride by EPA 300

Seq Number: 3044438

Parent Sample Id: 579573-015

Matrix: Soil

MS Sample Id: 579573-015 S

Prep Method: E300P

Date Prep: 03.21.18

MSD Sample Id: 579573-015 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	262	105	311	124	90-110	17	20	mg/kg	03.21.18 12:23	X

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

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

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

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



COG Operating LLC
Burch Keely Flood Sattelite C

Analytical Method: Chloride by EPA 300

Seq Number: 3044438

Parent Sample Id: 579577-006

Matrix: Soil

MS Sample Id: 579577-006 S

Prep Method: E300P

Date Prep: 03.21.18

MSD Sample Id: 579577-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	147	250	392	98	420	109	90-110	7	20	mg/kg	03.21.18 13:37	

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

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

LCS = Laboratory Control Sample
 A = Parent Result
 C = MS/LCS Result
 E = MSD/LCSD Result

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



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

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

Phoenix, Arizona (480-355-0900)

CHAIN OF CUSTODY

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Client / Reporting Information		Project Information		Xenco Quote #		Xenco Job #		Matrix Codes											
Company Name / Branch: COG Operating, LLC		Project Name/Number: Burch Keely Water Flood Satellite C		Xenco Quote #		Xenco Job #		Matrix Codes											
Company Address: 2407 Pecos Ave. Artesia NM 88210		Project Location: Eddy CO, NM		Xenco Quote #		Xenco Job #		Matrix Codes											
Email: shhitchcock@concho.com direel2@concho.com , cgravy@concho.com , rshaskell@concho.com		Invoice to: COG Operating, LLC Attn: Robert McNeill 600 W. Illinois Ave. Midland TX, 79701		Xenco Quote #		Xenco Job #		Matrix Codes											
Project Contact: Sheldon Hitchcock		PO Number:		Xenco Quote #		Xenco Job #		Matrix Codes											
Sampler's Name: Sheldon Hitchcock				Xenco Quote #		Xenco Job #		Matrix Codes											
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	TPH EXTENDED (EPA8015M)	BTEX (EPA 8021B)	CHLORIDES (EPA 300)	Field Comments	
1	T-1 E. SIDEWALL	N/A	3/5/2018	8:00	S	1									X				
2	T-1 W. SIDEWALL	N/A	3/6/2018	8:05	S	1									X				
3	T-1 S./T-2 N.	N/A	3/7/2018	8:10	S	1									X				
4	T-2 E. SIDEWALL	N/A	3/8/2018	8:15	S	1									X				
5	T-2 W. SIDEWALL	N/A	3/9/2018	8:20	S	1									X				
6	T-2 S./T-3 N.	N/A	3/9/2018	8:25	S	1									X				
7	T-3 E. SIDEWALL	N/A	3/9/2018	8:30	S	1									X				
8	T-3 W. SIDEWALL	N/A	3/9/2018	8:35	S	1									X				
9	T-3 S./T-5 N.	N/A	3/9/2018	8:40	S	1									X				
10	T-5 E. SIDEWALL	N/A	3/9/2018	8:45	S	1									X				
Turnaround Time (Business days)																			
<input type="checkbox"/> Same Day TAT		<input type="checkbox"/> 5 Day TAT																	
<input type="checkbox"/> Next Day EMERGENCY		<input type="checkbox"/> 7 Day TAT																	
<input type="checkbox"/> 2 Day EMERGENCY		<input checked="" type="checkbox"/> Contract TAT																	
<input type="checkbox"/> 3 Day EMERGENCY																			
TAT Starts Day received by Lab, if received by 5:00 pm																			
Relinquished by Sampler:		Date: 3/6-18		Received By: 1. did hutch		3-16-18		Relinquished By: 2. did hutch		3-16-18		Received By: 3. did hutch		3-16-18		Relinquished By: 4. did hutch		3-16-18	
Relinquished by:		Date Time:		Received By:		Date Time:		Received By:		Date Time:		Received By:		Date Time:		Received By:		Date Time:	
Relinquished by:		Date Time:		Received By:		Date Time:		Received By:		Date Time:		Received By:		Date Time:		Received By:		Date Time:	
5		Date Time:		Received By:		Date Time:		Received By:		Date Time:		Received By:		Date Time:		Received By:		Date Time:	
Notice: 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 any 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.																			



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CHAIN OF CUSTODY

Page 2 Of 2

Client / Reporting Information			Analytical Information			Xenoco Job # 579573	
Company Name / Branch: COG Operating, LLC Company Address: 2407 Pecos Ave. Artesia NM 88210			Project Name/Number: Burch Keely Water Flood Satellite C Project Location:				
Email: shitchcock@concho.com Phone No.: 575-703-6475 dneeel2@concho.com; cgrayr@concho.com; thaskell@concho.com			Invoice To: COG Operating, LLC Attn: Robert McNeill 600 W. Illinois Ave. Midland Tx, 79701				
Project Contact: Sheldon Hitchcock			PO Number:				
Sampler's Name: Sheldon Hitchcock							

No.	Field ID / Point of Collection	Collection	# of bottles	HCl	NaOH/Zn Acetate	HNO ₃	H ₂ SO ₄	NaOH	NaHSO ₄	MeOH	NONE	TPH EXTENDED (EPA8015M)	BTEX (EPA 8021B)	CHLORIDES (EPA 300)	Note	Matrix Codes
1	T-5 W. SIDEWALL	Sample Depth N/A Date 3/5/2018 Time 8:50 S	S	1							X	X				W = Water S = Soil/Sediment GW = Groundwater DW = Drinking Water P = Product SW = Surface water SL = Sludge OW = Ocean/Sea Water WI = Waste Oil WW = Waste Water A = Air
2	T-5 S./T-4 N.	N/A 3/5/2018 8:55 S	S	1							X	X				
3	T-4 E. SIDEWALL	N/A 3/6/2018 4:00 S	S	1							X	X				
4	T-4 W. SIDEWALL	N/A 3/7/2018 4:05 S	S	1							X	X				
5	T-4 S. SIDEWALL	N/A 3/8/2018 9:10 S	S	1							X	X				
6		3/9/2018 9:10 S	S	1							X	X				
7											X	X				
8											X	X				
9											X	X				
10											X	X				

Turnaround Time (Business days) _____ Data Deliverable information _____ Note _____	
-------------------------------------------------------------------------------------	--

<input type="checkbox"/> Same Day TAT <input type="checkbox"/> 5 Day TAT 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 Level III Std QC+ Forms TRRP Level IV <input type="checkbox"/> 2 DAY EMERGENCY <input checked="" type="checkbox"/> Contract TAT Level 3 (CLP Forms) UST / RG -411 <input type="checkbox"/> 3 DAY EMERGENCY TRRP Checklist		Temp: 14 °C IR ID: R-8 CF: (-0.6: +0.2°C) (6-23: +0.2°C) Corrected Temp: 12
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--	--------------------------------------------------------------------------------------

FED-EX / UPS: Tracking # _____

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY	
Relinquished by Sampler: <u>Sheldon HITCHCOCK</u> Date Time: <u>3-16-18</u>	Received By: <u>Rod Butts</u> Date Time: <u>3-16-18</u>
Relinquished by: _____ Date Time: _____	Received By: _____ Date Time: _____
Relinquished by: _____ Date Time: _____	Received By: _____ Date Time: _____
Relinquished by: _____ Date Time: _____	Received By: _____ Date Time: _____
Custody Seal # _____ Preserved where applicable _____ On Ice _____ Cooler Temp. _____ Thermo Corr. Factor _____	

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 any 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.



Client: COG Operating LLC

Date/ Time Received: 03/19/2018 08:00:00 AM

Work Order #: 579573

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	1.2
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Connie Hernandez

Date: 03/19/2018

Checklist reviewed by:

Jessica Kramer

Date: 03/19/2018

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 206711

CONDITIONS

Operator: Spur Energy Partners LLC 9655 Katy Freeway Houston, TX 77024	OGRID: 328947
	Action Number: 206711
	Action Type: [IM-SD] Incident File Support Doc (ENV) (IM-BNF)

CONDITIONS

Created By	Condition	Condition Date
amaxwell	Historical documents uploaded. Closure approved.	4/28/2023