

SITE INFORMATION

Report Type: Work Plan 2 RP - 4285

General Site Information:

Site:	Skelly Unit #743					
Company:	COG Operating LLC					
Section, Township and Range	Unit N	Sec. 22	T 17S	R 31E		
Lease Number:	API No. 30-015-37884					
County:	Eddy County					
GPS:	32.817972			103.85126		
Surface Owner:	Federal					
Mineral Owner:						
Directions:	From Malaga, New Mexico. Go south on Highway 285, go 16 miles and turn left (east) onto CR 726 and go 1.6 miles, turn left (north) and go 1.4 miles, turn left (west) and follow road 0.5 miles to facility.					

Release Data:

Date Released:	7/6/2017
Type Release:	Oil and Produced Water
Source of Contamination:	Flow line
Fluid Released:	9 bbls oil and 10 bbls water
Fluids Recovered:	8 bbls oil and 9 bbls water

Official Communication:

Name:	Robert McNeil		Ike Tavarez
Company:	COG Operating, LLC		Tetra Tech
Address:	One Concho Center		4000 N. Big Spring
	600 W. Illinois Ave.		Ste 401
City:	Midland Texas, 79701		Midland, Texas
Phone number:	(432) 686-3023		(432) 687-8110
Fax:	(432) 684-7137		
Email:	rmcneil@conchoresources.com		Ike.Tavarez@tetrattech.com

Ranking Criteria

Depth to Groundwater:	Ranking Score	Site Data
<50 ft	20	
50-99 ft	10	
>100 ft.	0	300'+
WellHead Protection:	Ranking Score	Site Data
Water Source <1,000 ft., Private <200 ft.	20	
Water Source >1,000 ft., Private >200 ft.	0	0
Surface Body of Water:	Ranking Score	Site Data
<200 ft.	20	
200 ft - 1,000 ft.	10	
>1,000 ft.	0	0
Total Ranking Score:		0

Acceptable Soil RRAL (mg/kg)		
Benzene	Total BTEX	TPH
10	50	5,000



TETRA TECH

September 21, 2017

Mike Bratcher
Environmental Engineer Specialist
Oil Conservation Division, District 2
811 S. First Street
Artesia, New Mexico 88210

Re: Work Plan for the COG Operating LLC., Skelly Federal Unit #743 Flow Line, Unit N, Section 22, Township 17 South, Range 31 East, Eddy County, New Mexico. 2RP-4285

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC., (COG) to prepare a work plan for the Skelly Federal Unit #743 Flow Line, Unit N, Section 22, Township 17 South, Range 31 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.817972, W 103.851260. The site location is shown on Figures 1 and 2.

Background

According to the State of New Mexico C-141 Initial Report, the release was discovered on July 6, 2017, and released approximately nine (9) barrels of oil and ten (10) barrels of produced water due to a poly line splitting. A total of eight (8) barrels of oil and nine (9) barrels of water were recovered using a vacuum truck. The release occurred in the pasture and measured approximately 65' x 100'. The initial C-141 form is included in Appendix A. The release area is shown on Figure 3.

Groundwater

No water wells were listed in Township 17 South, Range 31 East on the New Mexico Office of the State Engineer's website. However, according to the Geology and Groundwater Resources of Eddy County, NM (Report 3), one (1) well listed in Section 34 and has a reported depth to groundwater of 271' below surface. According to the Chevron Texaco Groundwater Trend map, the average depth to groundwater in the area is around 325' below surface. The groundwater data is shown in Appendix B.

Tetra Tech

4000 North Big Spring, Suite 401, Midland, TX 79705
Tel 432.682.4559 Fax 432.682.3946 www.tetrattech.com



Regulatory

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, dated August 13, 1993. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the depth to groundwater, the proposed RRAL for TPH is 5,000 mg/kg.

Site Remediation and Soil Sampling

On August 9, 2017, COG personnel were onsite to evaluate and assess the spill area. A total of three (3) sample trenches (T-1, T-2, and T-3) were installed to depths of 14.0', 17.0' and 7.0' below surface, respectively. Four (4) additional sample locations (North, South, East and West) were installed for horizontal extents. Selected samples were analyzed for TPH by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 1. The trench locations are shown on Figure 3.

Referring to Table 1, all of the samples showed total TPH, benzene, and total BTEX concentrations below the laboratory reporting limits, with the exception of trench (T-1). Trench (T-1) showed a shallow impact to the soils with a TPH concentration of 14,700 mg/kg and a total BTEX concentration of 424 mg/kg at surface; both exceeding the RRAL's. However, the sample at 1.0' below surface declined below the RRAL's for both TPH and total BTEX.

The chloride concentrations detected in the soils were not significant. The samples collected at trench (T-3) did not show chloride concentrations greater than 600 mg/kg. The area of trench (T-1) showed a chloride spike of 1,500 at 2.0' below surface, however the upper soils at 1.0' and deeper soils at 3.0' showed chlorides concentrations of 62.7 mg/kg and 101 mg/kg, respectively. Trench (T-2) did not detect any significant chlorides from surface to a depth of 3.0' below surface. However, the chlorides increased from 4.0' to 10.0' below surface with concentrations ranging from 653 mg/kg to 2,610 mg/kg and then declined to 434 mg/kg at 12.0' and 273 mg/kg at 17.0' below surface.

Work Plan

Based on the laboratory results, COG proposes to remove the impacted material as highlighted (green) in Table 1 and shown on Figure 4. The area of trench (T-1) will be excavated to a depth 1.0' below surface and hauled to proper disposal. Once excavated, the area will be trenched to a depth of 2.0' to sample and confirm the chloride detected of 1,500 mg/kg, which appears to be lab error. Based the data, the area of trench (T-2) will be excavated to a depth of approximately 3.0' below surface and stockpiled onsite. A 40 mil liner will be installed in the excavation bottom to cap the chloride impact. The excavated material will then be field tested chlorides and placed back into excavation.



TETRA TECH

Once the areas are excavated to the appropriate depths, the areas will be backfilled with clean material to surface grade. All of the excavated material will be transported offsite for proper disposal. The proposed excavation depths may not be reached due to wall cave ins and safety concerns for onsite personnel. In addition, impacted soil around oil and gas equipment, structures or lines may not be feasible or practicable to be removed due to safety concerns for onsite personnel. As such, COG will excavate the impacted soils to the maximum extent practicable.

Upon completion, a final report detailing the remediation activities will be submitted to the NMOCD. If you have any questions or comments concerning the assessment or the proposed remediation activities for this site, please call at (432) 682-4559.

Respectfully submitted,
TETRA TECH

Ike Tavarez, PG
Senior Project Manager

Clair Gonzales,
Geologist I

cc: Robert McNeill – COG
Dakota Neel
Henryetta Price – BLM

Figures

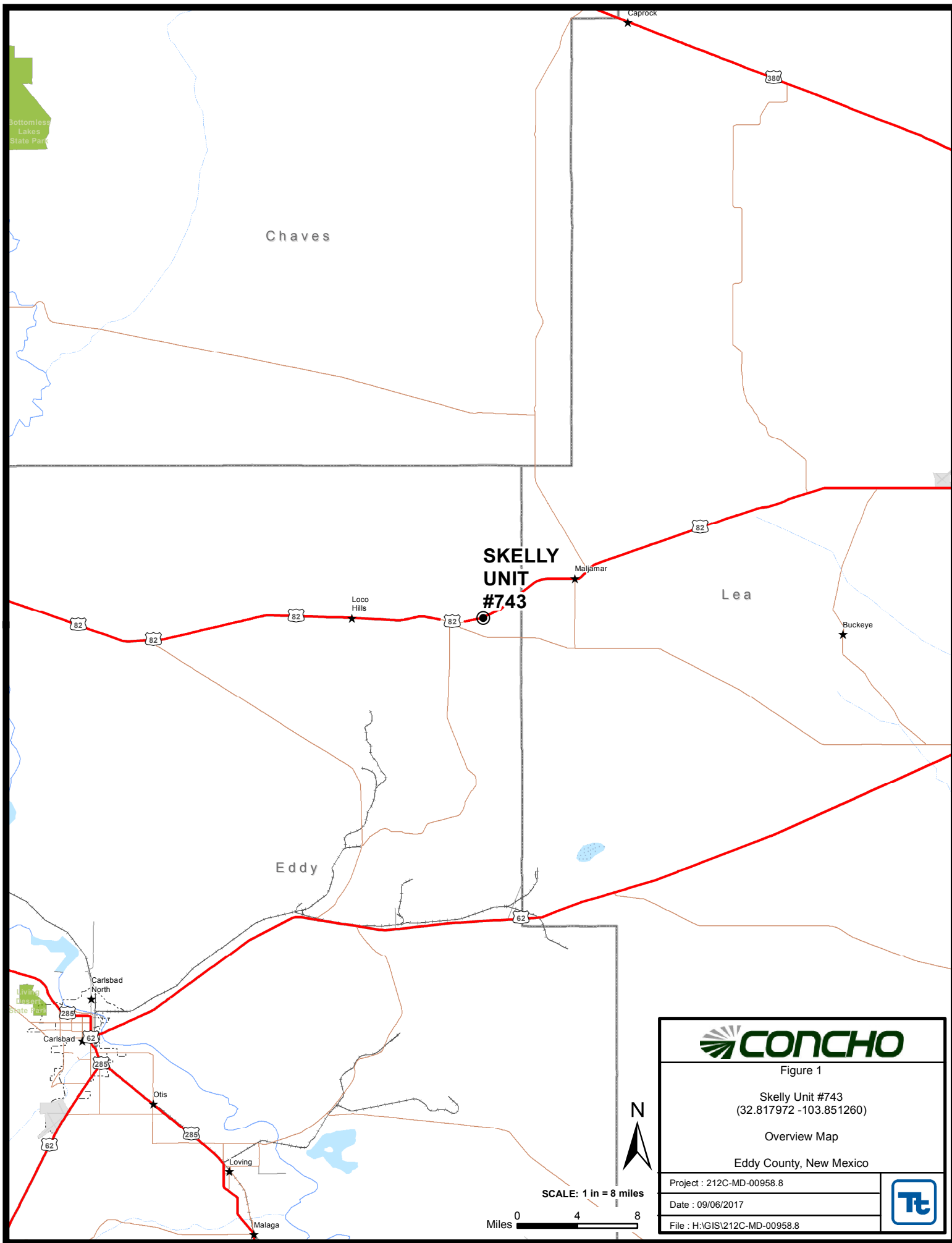




Figure 2

Skelly Unit #743
(32.817972 -103.851260)

Topo Map 1:24,000

Eddy County, New Mexico

Project : 212C-MD-00958.8

Date : 09/06/2017

File : H:\GIS\212C-MD-00958.8





SPILL AREA
(160'x160')

NORTH

T-1

WEST

T-2

EAST

T-3

SOUTH

EXPLANATION

- SAMPLE LOCATIONS
- TRENCH SAMPLE LOCATIONS
- ▨ SPILL AREA



Figure 3

Skelly Unit #743
(32.817972 -103.851260)

Spill Assessment Map

Chaves County, New Mexico

Project : 212C-MD-00958.8

Date : 09/06/2017

File : H:\GIS\212C-MD-00958.8



Esri, HERE, DeLorme, Mapmy
SCALE: 1 IN = 75 FEET
U: 0 37.5 75
C: Feet



Tables

Table 1
COG Operating LLC.
Skelly Unit #743
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Soil Status		TPH (mg/kg)				Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	C6-C10	C10-C28	C28-C35	Total						
T-1	8/9/2017	Surface	X		1390	11600	1690	14700	0.0330	40.0	189	195	424	442
	"	1	X		<15.0	<15.0	<15.0	<15.0	<0.00356	<0.00356	<0.00356	0.00448	0.00448	62.7
	"	2	X		<15.0	<15.0	<15.0	<15.0	<0.00341	<0.00341	<0.00341	<0.00341	<0.00341	1500
	"	3	X		<15.0	37.5	<15.0	37.5	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333	101
	"	4	X		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	22.2
	"	9	X		-		-	-	-	-	-	-	-	361
	"	14	X		<14.9	<14.9	<14.9	<14.9	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	93.9
T-2	8/9/2017	Surface	X		<15.0	<15.0	<15.0	<15.0	<0.00360	<0.00360	<0.00360	0.00453	0.00453	304
	"	1	X		<15.0	<15.0	<15.0	<15.0	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	41.6
	"	2	X		<15.0	<15.0	<15.0	<15.0	<0.00364	<0.00364	<0.00364	0.00578	0.00578	106
	"	3	X		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	379
	"	4	X		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	1860
	"	6	X		-		-	-	-	-	-	-	-	653
	"	8	X		-		-	-	-	-	-	-	-	2610
	"	10	X		-		-	-	-	-	-	-	-	1430
	"	12	X		-		-	-	-	-	-	-	-	434
	"	17	X		<15.0	<15.0	<15.0	<15.0	<0.00357	<0.00357	<0.00357	<0.00357	<0.00357	273
T-3	8/9/2017	Surface	X		<15.0	133	56.5	190	<0.00360	<0.00360	<0.00360	<0.00360	<0.00360	13.9
	"	1	X		<15.0	<15.0	<15.0	<15.0	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<4.96
	"	2	X		<15.0	<15.0	<15.0	<15.0	<0.00201	<0.00201	<0.00201	0.00253	0.00253	<4.90
	"	3	X		<14.9	<14.9	<14.9	<14.9	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<4.96
	"	4	X		<15.0	<15.0	<15.0	<15.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<4.97
	"	7	X		<15.0	<15.0	<15.0	<15.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	456
North	8/9/2017	Surface	X		<15.0	<15.0	<15.0	<15.0	<0.00351	<0.00351	<0.00351	<0.00351	<0.00351	<4.96
	"	1	X		<15.0	<15.0	<15.0	<15.0	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<5.00
South	8/9/2017	Surface	X		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<4.98
	"	1	X		<15.0	<15.0	<15.0	<15.0	<0.00345	<0.00345	<0.00345	<0.00345	<0.00345	22.6
East	8/9/2017	Surface	X		<15.0	<15.0	<15.0	<15.0	<0.00344	<0.00344	<0.00344	<0.00344	<0.00344	<4.98
	"	1	X		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	28.1
West	8/9/2017	Surface	X		<15.0	<15.0	<15.0	<15.0	<0.00330	<0.00330	<0.00330	<0.00330	<0.00330	<4.99
	"	1	X		<15.0	<15.0	<15.0	<15.0	<0.00353	<0.00353	<0.00353	0.00445	0.00445	8.00

(-)

Not Analyzed



Proposed Excavation Depth



Proposed Excavation Depth- Placed Back into Excavation, if Exceptable Concentrations

Proposed 40 mil liner

Appendix A

NM OIL CONSERVATION

ARTESIA DISTRICT

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

JUL 07 2017

Form C-141
Revised August 8, 2011

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

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

Release Notification and Corrective Action

DAB1719127651

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: Skelly Unit #743	Facility Type: Flowline

Surface Owner: Federal	Mineral Owner: Federal	API No. 30-015-37884
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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
N	22	17S	31E	945	South	1650	West	Eddy

Latitude 32.8154373 Longitude -103.860733

NATURE OF RELEASE

Type of Release: Oil and Produced Water	Volume of Release: 9 bbl. Oil & 10 bbl. PW	Volume Recovered: 8 bbl. Oil & 9 bbl. PW
Source of Release: Flowline	Date and Hour of Occurrence: July 6, 2017 7:30 pm	Date and Hour of Discovery: July 6, 2017 7:30 pm
Was Immediate Notice Given? ☐ Yes ☒ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour:	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

The release occurred in the pasture and was due to a polyline splitting in an area that had previously been spliced. The line will be repaired.

Describe Area Affected and Cleanup Action Taken.*

The release was within the 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		
Title: Senior HSE Coordinator	Approved by Environmental Specialist: <i>Cynthia W...</i>	Approval Date: 7/10/17
E-mail Address: rhaskell@concho.com	Conditions of Approval: <i>see attached</i>	Expiration Date: N/A
Date: July 7, 2017 Phone: 432-683-7443	Attached ☒	

* Attach Additional Sheets If Necessary

2RP-4285

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
COG - Skelly #743
Eddy County, New Mexico

16 South			30 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

17 South			30 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	80	21	22	23
30	29	28	27	26	25
31	32	33	34	35	36

18 South			30 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	44
30	29	28	27	26	25
31	32	33	34	35	36

16 South			31 East		
6	5	4	3	2	290
7	8	9	10	11	12
18	17	16	15	14	113
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

17 South			31 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

18 South			31 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	98	14
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

16 South			32 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

17 South			32 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

18 South			32 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

- 88** New Mexico State Engineers Well Reports
- 105** USGS Well Reports
- 90** Geology and Groundwater Conditions in Southern Lea, County, NM (Report 6)
- Geology and Groundwater Resources of Eddy County, NM (Report 3)
- 34** NMOCD - Groundwater Data
- 123** Tetra Tech installed temporary wells and field water level
- 143** NMOCD Groundwater map well location

Appendix C



Certificate of Analysis Summary 560035

COG Operating LLC, Artesia, NM

Project Name: Skelly Unit #743



Project Id:

Contact: Aaron Lieb

Project Location: Skelly Unit #743

Date Received in Lab: Fri Aug-11-17 11:45 am

Report Date: 22-AUG-17

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	560035-001	560035-002	560035-003	560035-004	560035-005	560035-006
	Field Id:	North- Surf	North- 1'	South- Surf	South- 1'	East-Surf	East- 1'
	Depth:		1- ft		1- ft		1- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Aug-09-17 10:15	Aug-09-17 10:15	Aug-09-17 10:15	Aug-09-17 10:15	Aug-09-17 10:15	Aug-09-17 10:15
BTEX by EPA 8021B	Extracted:	Aug-16-17 09:20	Aug-15-17 10:00	Aug-15-17 10:00	Aug-16-17 09:20	Aug-16-17 09:20	Aug-15-17 08:00
	Analyzed:	Aug-17-17 16:02	Aug-15-17 11:44	Aug-15-17 10:47	Aug-16-17 22:43	Aug-17-17 00:15	Aug-16-17 15:01
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00351 0.00351	<0.00201 0.00201	<0.00200 0.00200	<0.00345 0.00345	<0.00344 0.00344	<0.00200 0.00200
Toluene		<0.00351 0.00351	<0.00201 0.00201	<0.00200 0.00200	<0.00345 0.00345	<0.00344 0.00344	<0.00200 0.00200
Ethylbenzene		<0.00351 0.00351	<0.00201 0.00201	<0.00200 0.00200	<0.00345 0.00345	<0.00344 0.00344	<0.00200 0.00200
m,p-Xylenes		<0.00702 0.00702	<0.00402 0.00402	<0.00399 0.00399	<0.00690 0.00690	<0.00687 0.00687	<0.00399 0.00399
o-Xylene		<0.00351 0.00351	<0.00201 0.00201	<0.00200 0.00200	<0.00345 0.00345	<0.00344 0.00344	<0.00200 0.00200
Total Xylenes		<0.00351 0.00351	<0.00201 0.00201	<0.00200 0.00200	<0.00345 0.00345	<0.00344 0.00344	<0.00200 0.00200
Total BTEX		<0.00351 0.00351	<0.00201 0.00201	<0.00200 0.00200	<0.00345 0.00345	<0.00344 0.00344	<0.00200 0.00200
Inorganic Anions by EPA 300/300.1	Extracted:	Aug-21-17 17:00	Aug-21-17 17:00	Aug-21-17 17:00	Aug-21-17 17:00	Aug-21-17 17:00	Aug-21-17 17:00
	Analyzed:	Aug-22-17 01:19	Aug-22-17 01:26	Aug-22-17 01:34	Aug-22-17 01:57	Aug-22-17 02:05	Aug-22-17 02:28
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<4.96 4.96	<5.00 5.00	<4.98 4.98	22.6 4.93	<4.98 4.98	28.1 5.00
TPH By SW8015 Mod	Extracted:	Aug-15-17 08:00	Aug-15-17 08:00	Aug-15-17 08:00	Aug-15-17 08:00	Aug-15-17 08:00	Aug-15-17 08:00
	Analyzed:	Aug-15-17 10:11	Aug-15-17 11:12	Aug-15-17 14:37	Aug-15-17 11:53	Aug-15-17 12:13	Aug-15-17 12:34
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Oil Range Hydrocarbons (ORO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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

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

Kelsey Brooks
Project Manager



Certificate of Analysis Summary 560035

COG Operating LLC, Artesia, NM

Project Name: Skelly Unit #743



Project Id:

Contact: Aaron Lieb

Project Location: Skelly Unit #743

Date Received in Lab: Fri Aug-11-17 11:45 am

Report Date: 22-AUG-17

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	560035-007	560035-008				
	Field Id:	West- Surf	West- 1'				
	Depth:		1- ft				
	Matrix:	SOIL	SOIL				
	Sampled:	Aug-09-17 10:15	Aug-09-17 10:15				
BTEX by EPA 8021B	Extracted:	Aug-16-17 09:20	Aug-16-17 09:20				
	Analyzed:	Aug-17-17 00:34	Aug-17-17 00:53				
	Units/RL:	mg/kg RL	mg/kg RL				
Benzene		<0.00330 0.00330	<0.00353 0.00353				
Toluene		<0.00330 0.00330	<0.00353 0.00353				
Ethylbenzene		<0.00330 0.00330	<0.00353 0.00353				
m,p-Xylenes		<0.00660 0.00660	<0.00707 0.00707				
o-Xylene		<0.00330 0.00330	0.00445 0.00353				
Total Xylenes		<0.00330 0.00330	0.00445 0.00353				
Total BTEX		<0.00330 0.00330	0.00445 0.00353				
Inorganic Anions by EPA 300/300.1	Extracted:	Aug-21-17 17:00	Aug-21-17 17:00				
	Analyzed:	Aug-22-17 02:35	Aug-22-17 02:43				
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		<4.99 4.99	8.00 4.99				
TPH By SW8015 Mod	Extracted:	Aug-15-17 08:00	Aug-15-17 08:00				
	Analyzed:	Aug-15-17 12:54	Aug-15-17 13:15				
	Units/RL:	mg/kg RL	mg/kg RL				
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0				
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0				
Oil Range Hydrocarbons (ORO)		<15.0 15.0	<15.0 15.0				
Total TPH		<15.0 15.0	<15.0 15.0				

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

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

Kelsey Brooks
Project Manager

Analytical Report 560035

**for
COG Operating LLC**

Project Manager: Aaron Lieb

Skelly Unit #743

22-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)



22-AUG-17

Project Manager: **Aaron Lieb**

COG Operating LLC

2407 Pecos Avenue

Artesia, NM 88210

Reference: XENCO Report No(s): **560035**

Skelly Unit #743

Project Address: Skelly Unit #743

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) 560035. 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. 560035 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,

Kelsey Brooks

Project Manager

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

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



Sample Cross Reference 560035



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
North- Surf	S	08-09-17 10:15		560035-001
North- 1'	S	08-09-17 10:15	1 ft	560035-002
South- Surf	S	08-09-17 10:15		560035-003
South- 1'	S	08-09-17 10:15	1 ft	560035-004
East-Surf	S	08-09-17 10:15		560035-005
East- 1'	S	08-09-17 10:15	1 ft	560035-006
West- Surf	S	08-09-17 10:15		560035-007
West- 1'	S	08-09-17 10:15	1 ft	560035-008



CASE NARRATIVE

Client Name: COG Operating LLC

Project Name: Skelly Unit #743

Project ID:

Work Order Number(s): 560035

Report Date: 22-AUG-17

Date Received: 08/11/2017

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3025079 BTEX by EPA 8021B

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

Batch: LBA-3025339 BTEX by EPA 8021B

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

Batch: LBA-3025345 BTEX by EPA 8021B

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



Certificate of Analytical Results 560035



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: **North- Surf**

Matrix: Soil

Date Received: 08.11.17 11.45

Lab Sample Id: 560035-001

Date Collected: 08.09.17 10.15

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 08.21.17 17.00

Basis: Wet Weight

Seq Number: 3025638

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.96	4.96	mg/kg	08.22.17 01.19	U	1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 08.15.17 08.00

Basis: Wet Weight

Seq Number: 3025055

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.15.17 10.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.15.17 10.11	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.15.17 10.11	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.15.17 10.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	08.15.17 10.11	
o-Terphenyl	84-15-1	99	%	70-135	08.15.17 10.11	



Certificate of Analytical Results 560035



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: **North- Surf**

Matrix: Soil

Date Received: 08.11.17 11.45

Lab Sample Id: 560035-001

Date Collected: 08.09.17 10.15

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.16.17 09.20

Basis: Wet Weight

Seq Number: 3025345

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00351	0.00351	mg/kg	08.17.17 16.02	U	1
Toluene	108-88-3	<0.00351	0.00351	mg/kg	08.17.17 16.02	U	1
Ethylbenzene	100-41-4	<0.00351	0.00351	mg/kg	08.17.17 16.02	U	1
m,p-Xylenes	179601-23-1	<0.00702	0.00702	mg/kg	08.17.17 16.02	U	1
o-Xylene	95-47-6	<0.00351	0.00351	mg/kg	08.17.17 16.02	U	1
Total Xylenes	1330-20-7	<0.00351	0.00351	mg/kg	08.17.17 16.02	U	1
Total BTEX		<0.00351	0.00351	mg/kg	08.17.17 16.02	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	84	%	80-120	08.17.17 16.02		
1,4-Difluorobenzene	540-36-3	94	%	80-120	08.17.17 16.02		



Certificate of Analytical Results 560035



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: **North- 1'** Matrix: Soil Date Received: 08.11.17 11.45
Lab Sample Id: 560035-002 Date Collected: 08.09.17 10.15 Sample Depth: 1 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 08.21.17 17.00 Basis: Wet Weight
Seq Number: 3025638

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	08.22.17 01.26	U	1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 08.15.17 08.00 Basis: Wet Weight
Seq Number: 3025055

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.15.17 11.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.15.17 11.12	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.15.17 11.12	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.15.17 11.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	08.15.17 11.12	
o-Terphenyl	84-15-1	99	%	70-135	08.15.17 11.12	



Certificate of Analytical Results 560035



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: **North- 1'**
Lab Sample Id: 560035-002

Matrix: Soil
Date Collected: 08.09.17 10.15

Date Received: 08.11.17 11.45
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.15.17 10.00

Basis: Wet Weight

Seq Number: 3025339

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	08.15.17 11.44	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	08.15.17 11.44	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	08.15.17 11.44	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	08.15.17 11.44	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	08.15.17 11.44	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	08.15.17 11.44	U	1
Total BTEX		<0.00201	0.00201	mg/kg	08.15.17 11.44	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	80-120	08.15.17 11.44		
4-Bromofluorobenzene	460-00-4	83	%	80-120	08.15.17 11.44		



Certificate of Analytical Results 560035



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: **South- Surf**

Matrix: Soil

Date Received: 08.11.17 11.45

Lab Sample Id: 560035-003

Date Collected: 08.09.17 10.15

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 08.21.17 17.00

Basis: Wet Weight

Seq Number: 3025638

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.98	4.98	mg/kg	08.22.17 01.34	U	1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 08.15.17 08.00

Basis: Wet Weight

Seq Number: 3025055

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.15.17 14.37	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.15.17 14.37	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.15.17 14.37	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.15.17 14.37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	08.15.17 14.37	
o-Terphenyl	84-15-1	96	%	70-135	08.15.17 14.37	



Certificate of Analytical Results 560035



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: **South- Surf**

Matrix: Soil

Date Received: 08.11.17 11.45

Lab Sample Id: 560035-003

Date Collected: 08.09.17 10.15

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.15.17 10.00

Basis: Wet Weight

Seq Number: 3025339

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.15.17 10.47	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.15.17 10.47	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.15.17 10.47	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.15.17 10.47	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.15.17 10.47	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.15.17 10.47	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.15.17 10.47	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	86	%	80-120	08.15.17 10.47		
1,4-Difluorobenzene	540-36-3	99	%	80-120	08.15.17 10.47		



Certificate of Analytical Results 560035



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: **South- 1'**
Lab Sample Id: 560035-004

Matrix: Soil
Date Collected: 08.09.17 10.15

Date Received: 08.11.17 11.45
Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MGO

Analyst: MGO

Seq Number: 3025638

Date Prep: 08.21.17 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	22.6	4.93	mg/kg	08.22.17 01.57		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3025055

Date Prep: 08.15.17 08.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.15.17 11.53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.15.17 11.53	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.15.17 11.53	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.15.17 11.53	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	97	%	70-135	08.15.17 11.53		
o-Terphenyl	84-15-1	94	%	70-135	08.15.17 11.53		



Certificate of Analytical Results 560035



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: **South- 1'**
Lab Sample Id: 560035-004

Matrix: Soil
Date Collected: 08.09.17 10.15

Date Received: 08.11.17 11.45
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.16.17 09.20

Basis: Wet Weight

Seq Number: 3025345

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00345	0.00345	mg/kg	08.16.17 22.43	U	1
Toluene	108-88-3	<0.00345	0.00345	mg/kg	08.16.17 22.43	U	1
Ethylbenzene	100-41-4	<0.00345	0.00345	mg/kg	08.16.17 22.43	U	1
m,p-Xylenes	179601-23-1	<0.00690	0.00690	mg/kg	08.16.17 22.43	U	1
o-Xylene	95-47-6	<0.00345	0.00345	mg/kg	08.16.17 22.43	U	1
Total Xylenes	1330-20-7	<0.00345	0.00345	mg/kg	08.16.17 22.43	U	1
Total BTEX		<0.00345	0.00345	mg/kg	08.16.17 22.43	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	82	%	80-120	08.16.17 22.43		
1,4-Difluorobenzene	540-36-3	94	%	80-120	08.16.17 22.43		



Certificate of Analytical Results 560035



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: **East-Surf**
Lab Sample Id: 560035-005

Matrix: Soil
Date Collected: 08.09.17 10.15

Date Received: 08.11.17 11.45

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MGO

Analyst: MGO

Seq Number: 3025638

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Date Prep: 08.21.17 17.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.98	4.98	mg/kg	08.22.17 02.05	U	1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3025055

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Date Prep: 08.15.17 08.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.15.17 12.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.15.17 12.13	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.15.17 12.13	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.15.17 12.13	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	98	%	70-135	08.15.17 12.13		
o-Terphenyl	84-15-1	96	%	70-135	08.15.17 12.13		



Certificate of Analytical Results 560035



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: **East-Surf**
Lab Sample Id: 560035-005

Matrix: Soil
Date Collected: 08.09.17 10.15

Date Received: 08.11.17 11.45

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.16.17 09.20

Basis: Wet Weight

Seq Number: 3025345

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00344	0.00344	mg/kg	08.17.17 00.15	U	1
Toluene	108-88-3	<0.00344	0.00344	mg/kg	08.17.17 00.15	U	1
Ethylbenzene	100-41-4	<0.00344	0.00344	mg/kg	08.17.17 00.15	U	1
m,p-Xylenes	179601-23-1	<0.00687	0.00687	mg/kg	08.17.17 00.15	U	1
o-Xylene	95-47-6	<0.00344	0.00344	mg/kg	08.17.17 00.15	U	1
Total Xylenes	1330-20-7	<0.00344	0.00344	mg/kg	08.17.17 00.15	U	1
Total BTEX		<0.00344	0.00344	mg/kg	08.17.17 00.15	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	85	%	80-120	08.17.17 00.15		
1,4-Difluorobenzene	540-36-3	94	%	80-120	08.17.17 00.15		



Certificate of Analytical Results 560035



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: **East- 1'** Matrix: Soil Date Received: 08.11.17 11.45
Lab Sample Id: 560035-006 Date Collected: 08.09.17 10.15 Sample Depth: 1 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 08.21.17 17.00 Basis: Wet Weight
Seq Number: 3025638

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	28.1	5.00	mg/kg	08.22.17 02.28		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 08.15.17 08.00 Basis: Wet Weight
Seq Number: 3025055

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.15.17 12.34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.15.17 12.34	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.15.17 12.34	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.15.17 12.34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	08.15.17 12.34	
o-Terphenyl	84-15-1	95	%	70-135	08.15.17 12.34	



Certificate of Analytical Results 560035



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: **East- 1'**
Lab Sample Id: 560035-006

Matrix: Soil
Date Collected: 08.09.17 10.15

Date Received: 08.11.17 11.45
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.15.17 08.00

Basis: Wet Weight

Seq Number: 3025079

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.16.17 15.01	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.16.17 15.01	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.16.17 15.01	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.16.17 15.01	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.16.17 15.01	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.16.17 15.01	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.16.17 15.01	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	105	%	80-120	08.16.17 15.01		
1,4-Difluorobenzene	540-36-3	93	%	80-120	08.16.17 15.01		



Certificate of Analytical Results 560035



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: **West- Surf**

Matrix: Soil

Date Received: 08.11.17 11.45

Lab Sample Id: 560035-007

Date Collected: 08.09.17 10.15

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 08.21.17 17.00

Basis: Wet Weight

Seq Number: 3025638

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.99	4.99	mg/kg	08.22.17 02.35	U	1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 08.15.17 08.00

Basis: Wet Weight

Seq Number: 3025055

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.15.17 12.54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.15.17 12.54	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.15.17 12.54	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.15.17 12.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	08.15.17 12.54	
o-Terphenyl	84-15-1	94	%	70-135	08.15.17 12.54	



Certificate of Analytical Results 560035



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: **West- Surf**

Matrix: Soil

Date Received: 08.11.17 11.45

Lab Sample Id: 560035-007

Date Collected: 08.09.17 10.15

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.16.17 09.20

Basis: Wet Weight

Seq Number: 3025345

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00330	0.00330	mg/kg	08.17.17 00.34	U	1
Toluene	108-88-3	<0.00330	0.00330	mg/kg	08.17.17 00.34	U	1
Ethylbenzene	100-41-4	<0.00330	0.00330	mg/kg	08.17.17 00.34	U	1
m,p-Xylenes	179601-23-1	<0.00660	0.00660	mg/kg	08.17.17 00.34	U	1
o-Xylene	95-47-6	<0.00330	0.00330	mg/kg	08.17.17 00.34	U	1
Total Xylenes	1330-20-7	<0.00330	0.00330	mg/kg	08.17.17 00.34	U	1
Total BTEX		<0.00330	0.00330	mg/kg	08.17.17 00.34	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	83	%	80-120	08.17.17 00.34		
1,4-Difluorobenzene	540-36-3	96	%	80-120	08.17.17 00.34		



Certificate of Analytical Results 560035



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: **West- 1'** Matrix: Soil Date Received: 08.11.17 11.45
Lab Sample Id: 560035-008 Date Collected: 08.09.17 10.15 Sample Depth: 1 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 08.21.17 17.00 Basis: Wet Weight
Seq Number: 3025638

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8.00	4.99	mg/kg	08.22.17 02.43		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 08.15.17 08.00 Basis: Wet Weight
Seq Number: 3025055

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.15.17 13.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.15.17 13.15	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.15.17 13.15	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.15.17 13.15	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	99	%	70-135	08.15.17 13.15		
o-Terphenyl	84-15-1	96	%	70-135	08.15.17 13.15		



Certificate of Analytical Results 560035



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: **West- 1'**
Lab Sample Id: 560035-008

Matrix: Soil
Date Collected: 08.09.17 10.15

Date Received: 08.11.17 11.45
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.16.17 09.20

Basis: Wet Weight

Seq Number: 3025345

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00353	0.00353	mg/kg	08.17.17 00.53	U	1
Toluene	108-88-3	<0.00353	0.00353	mg/kg	08.17.17 00.53	U	1
Ethylbenzene	100-41-4	<0.00353	0.00353	mg/kg	08.17.17 00.53	U	1
m,p-Xylenes	179601-23-1	<0.00707	0.00707	mg/kg	08.17.17 00.53	U	1
o-Xylene	95-47-6	0.00445	0.00353	mg/kg	08.17.17 00.53		1
Total Xylenes	1330-20-7	0.00445	0.00353	mg/kg	08.17.17 00.53		1
Total BTEX		0.00445	0.00353	mg/kg	08.17.17 00.53		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	106	%	80-120	08.17.17 00.53		
4-Bromofluorobenzene	460-00-4	86	%	80-120	08.17.17 00.53		

- 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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(602) 437-0330	



QC Summary 560035

COG Operating LLC

Skelly Unit #743

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3025638

Matrix: Solid

Prep Method: E300P

MB Sample Id: 729712-1-BLK

LCS Sample Id: 729712-1-BKS

Date Prep: 08.21.17

LCSD Sample Id: 729712-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<4.99	250	258	103	255	102	90-110	1	20	mg/kg	08.21.17 23:31	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3025638

Matrix: Soil

Prep Method: E300P

Parent Sample Id: 560034-001

MS Sample Id: 560034-001 S

Date Prep: 08.21.17

MSD Sample Id: 560034-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	9.36	249	268	104	267	103	90-110	0	20	mg/kg	08.21.17 23:54	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3025638

Matrix: Soil

Prep Method: E300P

Parent Sample Id: 560035-003

MS Sample Id: 560035-003 S

Date Prep: 08.21.17

MSD Sample Id: 560035-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<4.98	249	268	108	263	106	90-110	2	20	mg/kg	08.22.17 01:42	

Analytical Method: TPH By SW8015 Mod

Seq Number: 3025055

Matrix: Solid

Prep Method: TX1005P

MB Sample Id: 729383-1-BLK

LCS Sample Id: 729383-1-BKS

Date Prep: 08.15.17

LCSD Sample Id: 729383-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	874	87	849	85	70-135	3	35	mg/kg	08.15.17 09:30	
Diesel Range Organics (DRO)	<15.0	1000	1050	105	1050	105	70-135	0	35	mg/kg	08.15.17 09:30	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	98		108		105		70-135	%	08.15.17 09:30
o-Terphenyl	95		122		117		70-135	%	08.15.17 09:30



QC Summary 560035

COG Operating LLC

Skelly Unit #743

Analytical Method: TPH By SW8015 Mod

Seq Number: 3025055

Parent Sample Id: 560035-001

Matrix: Soil

MS Sample Id: 560035-001 S

Prep Method: TX1005P

Date Prep: 08.15.17

MSD Sample Id: 560035-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	997	850	85	905	91	70-135	6	35	mg/kg	08.15.17 10:31	
Diesel Range Organics (DRO)	<15.0	997	1090	109	1050	105	70-135	4	35	mg/kg	08.15.17 10:31	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	118		103		70-135	%	08.15.17 10:31
o-Terphenyl	118		114		70-135	%	08.15.17 10:31

Analytical Method: BTEX by EPA 8021B

Seq Number: 3025079

MB Sample Id: 729398-1-BLK

Matrix: Solid

LCS Sample Id: 729398-1-BKS

Prep Method: SW5030B

Date Prep: 08.15.17

LCSD Sample Id: 729398-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.122	122	0.121	120	70-130	1	35	mg/kg	08.16.17 15:01	
Toluene	<0.00200	0.0998	0.123	123	0.120	119	70-130	2	35	mg/kg	08.16.17 15:01	
Ethylbenzene	<0.00200	0.0998	0.116	116	0.113	112	71-129	3	35	mg/kg	08.16.17 15:01	
m,p-Xylenes	<0.00399	0.200	0.237	119	0.233	116	70-135	2	35	mg/kg	08.16.17 15:01	
o-Xylene	<0.00200	0.0998	0.118	118	0.116	115	71-133	2	35	mg/kg	08.16.17 15:01	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	96		116		106		80-120	%	08.16.17 15:01
4-Bromofluorobenzene	109		104		102		80-120	%	08.16.17 15:01

Analytical Method: BTEX by EPA 8021B

Seq Number: 3025339

MB Sample Id: 729487-1-BLK

Matrix: Solid

LCS Sample Id: 729487-1-BKS

Prep Method: SW5030B

Date Prep: 08.15.17

LCSD Sample Id: 729487-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.117	116	0.115	115	70-130	2	35	mg/kg	08.15.17 08:53	
Toluene	<0.00202	0.101	0.113	112	0.112	112	70-130	1	35	mg/kg	08.15.17 08:53	
Ethylbenzene	<0.00202	0.101	0.110	109	0.110	110	71-129	0	35	mg/kg	08.15.17 08:53	
m,p-Xylenes	<0.00403	0.202	0.215	106	0.214	106	70-135	0	35	mg/kg	08.15.17 08:53	
o-Xylene	<0.00202	0.101	0.103	102	0.103	103	71-133	0	35	mg/kg	08.15.17 08:53	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	98		100		100		80-120	%	08.15.17 08:53
4-Bromofluorobenzene	84		86		88		80-120	%	08.15.17 08:53

COG Operating LLC
Skelly Unit #743

Analytical Method: BTEX by EPA 8021B

Seq Number: 3025345

MB Sample Id: 729520-1-BLK

Matrix: Solid

LCS Sample Id: 729520-1-BKS

Prep Method: SW5030B

Date Prep: 08.16.17

LCSD Sample Id: 729520-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.124	124	0.124	124	70-130	0	35	mg/kg	08.17.17 11:56	
Toluene	<0.00199	0.0996	0.122	122	0.123	123	70-130	1	35	mg/kg	08.17.17 11:56	
Ethylbenzene	<0.00199	0.0996	0.121	121	0.121	121	71-129	0	35	mg/kg	08.17.17 11:56	
m,p-Xylenes	<0.00398	0.199	0.237	119	0.237	119	70-135	0	35	mg/kg	08.17.17 11:56	
o-Xylene	<0.00199	0.0996	0.115	115	0.116	116	71-133	1	35	mg/kg	08.17.17 11:56	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	94		98		95		80-120	%	08.17.17 11:56
4-Bromofluorobenzene	82		86		85		80-120	%	08.17.17 11:56

Analytical Method: BTEX by EPA 8021B

Seq Number: 3025079

Parent Sample Id: 559928-001

Matrix: Soil

MS Sample Id: 559928-001 S

Prep Method: SW5030B

Date Prep: 08.15.17

MSD Sample Id: 559928-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0750	75	0.0588	59	70-130	24	35	mg/kg	08.16.17 15:01	X
Toluene	<0.00200	0.0998	0.0516	52	0.0386	39	70-130	29	35	mg/kg	08.16.17 15:01	X
Ethylbenzene	<0.00200	0.0998	0.0345	35	0.0242	24	71-129	35	35	mg/kg	08.16.17 15:01	X
m,p-Xylenes	<0.00399	0.200	0.0673	34	0.0472	24	70-135	35	35	mg/kg	08.16.17 15:01	X
o-Xylene	<0.00200	0.0998	0.0304	30	0.0241	24	71-133	23	35	mg/kg	08.16.17 15:01	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		110		80-120	%	08.16.17 15:01
4-Bromofluorobenzene	102		98		80-120	%	08.16.17 15:01

Analytical Method: BTEX by EPA 8021B

Seq Number: 3025339

Parent Sample Id: 560035-003

Matrix: Soil

MS Sample Id: 560035-003 S

Prep Method: SW5030B

Date Prep: 08.15.17

MSD Sample Id: 560035-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00198	0.0990	0.102	103	0.110	110	70-130	8	35	mg/kg	08.15.17 09:31	
Toluene	<0.00198	0.0990	0.0983	99	0.104	104	70-130	6	35	mg/kg	08.15.17 09:31	
Ethylbenzene	<0.00198	0.0990	0.0926	94	0.103	103	71-129	11	35	mg/kg	08.15.17 09:31	
m,p-Xylenes	<0.00396	0.198	0.179	90	0.195	98	70-135	9	35	mg/kg	08.15.17 09:31	
o-Xylene	<0.00198	0.0990	0.0871	88	0.0993	99	71-133	13	35	mg/kg	08.15.17 09:31	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		96		80-120	%	08.15.17 09:31
4-Bromofluorobenzene	88		90		80-120	%	08.15.17 09:31



COG Operating LLC

Skelly Unit #743

Analytical Method: BTEX by EPA 8021B

Seq Number: 3025345

Parent Sample Id: 560035-001

Matrix: Soil

MS Sample Id: 560035-001 S

Prep Method: SW5030B

Date Prep: 08.16.17

MSD Sample Id: 560035-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00348	0.174	0.186	107	0.176	101	70-130	6	35	mg/kg	08.17.17 12:32	
Toluene	<0.00348	0.174	0.176	101	0.165	94	70-130	6	35	mg/kg	08.17.17 12:32	
Ethylbenzene	<0.00348	0.174	0.162	93	0.151	86	71-129	7	35	mg/kg	08.17.17 12:32	
m,p-Xylenes	<0.00697	0.348	0.313	90	0.291	83	70-135	7	35	mg/kg	08.17.17 12:32	
o-Xylene	<0.00348	0.174	0.154	89	0.145	83	71-133	6	35	mg/kg	08.17.17 12:32	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	95		98		80-120	%	08.17.17 12:32
4-Bromofluorobenzene	83		87		80-120	%	08.17.17 12:32

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5600035

[illegible]

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Temp: 3.2 IR ID: R-8
CF: (0.6; -0.2°C)
(6-23; +0.2°C)
Corrected Temp: 3.6



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: COG Operating LLC

Date/ Time Received: 08/11/2017 11:45:00 AM

Work Order #: 560035

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)?	3.6
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seal present on shipping container/ cooler?	N/A
#5 *Custody Seals intact on shipping container/ cooler?	N/A
#6 Custody Seals intact on sample bottles?	N/A
#7 *Custody Seals Signed and dated?	N/A
#8 *Chain of Custody present?	Yes
#9 Sample instructions complete on Chain of Custody?	Yes
#10 Any missing/extra samples?	No
#11 Chain of Custody signed when relinquished/ received?	Yes
#12 Chain of Custody agrees with sample label(s)?	Yes
#13 Container label(s) legible and intact?	Yes
#14 Sample matrix/ properties agree with Chain of Custody?	Yes
#15 Samples in proper container/ bottle?	Yes
#16 Samples properly preserved?	Yes
#17 Sample container(s) intact?	Yes
#18 Sufficient sample amount for indicated test(s)?	Yes
#19 All samples received within hold time?	Yes
#20 Subcontract of sample(s)?	N/A
#21 VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by: Jessica Kramer
Jessica Kramer

Date: 08/14/2017

Checklist reviewed by: Kelsey Brooks
Kelsey Brooks

Date: 08/14/2017



Certificate of Analysis Summary 560036

COG Operating LLC, Artesia, NM

Project Name: Skelly Unit #743



Project Id:

Contact: Aaron Lieb

Project Location: Skelly Unit #743

Date Received in Lab: Fri Aug-11-17 11:45 am

Report Date: 23-AUG-17

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	560036-001	560036-002	560036-003	560036-004	560036-005	560036-006
	Field Id:	T1-Surface	T1-1'	T1-2'	T1-3'	T1-4'	T1-9'
	Depth:		1- ft	2- ft	3- ft	4- ft	9- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Aug-09-17 10:30	Aug-09-17 10:30	Aug-09-17 10:30	Aug-09-17 10:30	Aug-09-17 10:30	Aug-09-17 10:30
BTEX by EPA 8021B	Extracted:	Aug-21-17 08:00	Aug-16-17 09:20	Aug-16-17 09:20	Aug-16-17 09:20	Aug-15-17 10:00	
	Analyzed:	Aug-21-17 13:03	Aug-16-17 22:24	Aug-16-17 20:31	Aug-16-17 22:05	Aug-15-17 12:22	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Benzene		0.0330 0.0198	<0.00356 0.00356	<0.00341 0.00341	<0.00333 0.00333	<0.00200 0.00200	
Toluene		40.0 D 1.00	<0.00356 0.00356	<0.00341 0.00341	<0.00333 0.00333	<0.00200 0.00200	
Ethylbenzene		189 D 1.00	<0.00356 0.00356	<0.00341 0.00341	<0.00333 0.00333	<0.00200 0.00200	
m,p-Xylenes		194 D 2.00	<0.00712 0.00712	<0.00683 0.00683	<0.00667 0.00667	<0.00399 0.00399	
o-Xylene		1.37 0.0198	0.00448 0.00356	<0.00341 0.00341	<0.00333 0.00333	<0.00200 0.00200	
Total Xylenes		195 0.0198	0.00448 0.00356	<0.00341 0.00341	<0.00333 0.00333	<0.00200 0.00200	
Total BTEX		424 0.0198	0.00448 0.00356	<0.00341 0.00341	<0.00333 0.00333	<0.00200 0.00200	
Inorganic Anions by EPA 300/300.1	Extracted:	Aug-21-17 17:30	Aug-21-17 17:30	Aug-21-17 17:30	Aug-21-17 17:30	Aug-21-17 17:30	Aug-21-17 17:30
	Analyzed:	Aug-22-17 03:29	Aug-22-17 03:52	Aug-22-17 04:00	Aug-22-17 04:07	Aug-22-17 04:15	Aug-22-17 04:38
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		442 4.96	62.7 5.00	1500 24.8	101 4.92	22.2 4.97	361 4.96
TPH By SW8015 Mod	Extracted:	Aug-14-17 17:00	Aug-14-17 17:00	Aug-14-17 17:00	Aug-14-17 17:00	Aug-14-17 17:00	
	Analyzed:	Aug-14-17 22:42	Aug-14-17 23:02	Aug-15-17 00:03	Aug-15-17 00:24	Aug-15-17 00:44	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Gasoline Range Hydrocarbons (GRO)		1390 74.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	
Diesel Range Organics (DRO)		11600 74.9	<15.0 15.0	<15.0 15.0	37.5 15.0	<15.0 15.0	
Oil Range Hydrocarbons (ORO)		1690 74.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	
Total TPH		14700 74.9	<15.0 15.0	<15.0 15.0	37.5 15.0	<15.0 15.0	

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Version: 1.9%

Kelsey Brooks
Project Manager



Certificate of Analysis Summary 560036

COG Operating LLC, Artesia, NM

Project Name: Skelly Unit #743



Project Id:

Contact: Aaron Lieb

Project Location: Skelly Unit #743

Date Received in Lab: Fri Aug-11-17 11:45 am

Report Date: 23-AUG-17

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	560036-007	560036-008	560036-009	560036-010	560036-011	560036-012
	<i>Field Id:</i>	T1-14'	T2-Surface	T2-1'	T2-2'	T2-3'	T2-4'
	<i>Depth:</i>	14- ft		1- ft	2- ft	3- ft	4- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Aug-09-17 10:30	Aug-09-17 11:00	Aug-09-17 11:00	Aug-09-17 11:00	Aug-09-17 11:00	Aug-09-17 11:00
BTEX by EPA 8021B	<i>Extracted:</i>	Aug-15-17 10:00	Aug-16-17 09:20	Aug-15-17 10:00	Aug-16-17 09:20	Aug-15-17 10:00	Aug-15-17 10:00
	<i>Analyzed:</i>	Aug-15-17 12:41	Aug-16-17 20:50	Aug-15-17 13:19	Aug-16-17 21:09	Aug-15-17 13:56	Aug-15-17 14:54
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00199 0.00199	<0.00360 0.00360	<0.00202 0.00202	<0.00364 0.00364	<0.00200 0.00200	<0.00200 0.00200
Toluene		<0.00199 0.00199	<0.00360 0.00360	<0.00202 0.00202	<0.00364 0.00364	<0.00200 0.00200	<0.00200 0.00200
Ethylbenzene		<0.00199 0.00199	<0.00360 0.00360	<0.00202 0.00202	<0.00364 0.00364	<0.00200 0.00200	<0.00200 0.00200
m,p-Xylenes		<0.00398 0.00398	<0.00719 0.00719	<0.00404 0.00404	<0.00727 0.00727	<0.00401 0.00401	<0.00399 0.00399
o-Xylene		<0.00199 0.00199	0.00453 0.00360	<0.00202 0.00202	0.00578 0.00364	<0.00200 0.00200	<0.00200 0.00200
Total Xylenes		<0.00199 0.00199	0.00453 0.00360	<0.00202 0.00202	0.00578 0.00364	<0.00200 0.00200	<0.00200 0.00200
Total BTEX		<0.00199 0.00199	0.00453 0.00360	<0.00202 0.00202	0.00578 0.00364	<0.00200 0.00200	<0.00200 0.00200
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	Aug-21-17 17:30	Aug-21-17 17:30	Aug-21-17 17:30	Aug-21-17 17:30	Aug-21-17 17:30	Aug-21-17 17:30
	<i>Analyzed:</i>	Aug-22-17 04:46	Aug-22-17 04:54	Aug-22-17 05:01	Aug-22-17 05:09	Aug-22-17 05:17	Aug-22-17 05:40
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		93.9 4.93	304 4.90	41.6 4.91	106 4.96	379 4.97	1860 24.6
TPH By SW8015 Mod	<i>Extracted:</i>	Aug-14-17 17:00	Aug-14-17 17:00	Aug-14-17 17:00	Aug-14-17 17:00	Aug-14-17 17:00	Aug-14-17 17:00
	<i>Analyzed:</i>	Aug-15-17 01:05	Aug-15-17 01:26	Aug-15-17 01:48	Aug-15-17 02:08	Aug-15-17 02:29	Aug-15-17 03:32
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Oil Range Hydrocarbons (ORO)		<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Version: 1.9%

Kelsey Brooks
Project Manager



Certificate of Analysis Summary 560036

COG Operating LLC, Artesia, NM

Project Name: Skelly Unit #743



Project Id:

Contact: Aaron Lieb

Project Location: Skelly Unit #743

Date Received in Lab: Fri Aug-11-17 11:45 am

Report Date: 23-AUG-17

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	560036-013	560036-014	560036-015	560036-016	560036-017	560036-018
	Field Id:	T2-6'	T2-8'	T2-10'	T2-12'	T2-17'	T3-Surface
	Depth:	6- ft	8- ft	10- ft	12- ft	17- ft	
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Aug-09-17 11:00	Aug-09-17 11:15	Aug-09-17 11:15	Aug-09-17 11:15	Aug-09-17 11:15	Aug-09-17 11:30
BTEX by EPA 8021B	Extracted:					Aug-16-17 09:20	Aug-16-17 09:20
	Analyzed:					Aug-16-17 21:28	Aug-16-17 21:46
	Units/RL:					mg/kg RL	mg/kg RL
	Benzene					<0.00357 0.00357	<0.00360 0.00360
	Toluene					<0.00357 0.00357	<0.00360 0.00360
	Ethylbenzene					<0.00357 0.00357	<0.00360 0.00360
	m,p-Xylenes					<0.00714 0.00714	<0.00719 0.00719
	o-Xylene					<0.00357 0.00357	<0.00360 0.00360
Total Xylenes						<0.00357 0.00357	<0.00360 0.00360
Total BTEX						<0.00357 0.00357	<0.00360 0.00360
Inorganic Anions by EPA 300/300.1	Extracted:	Aug-21-17 17:30	Aug-21-17 17:30	Aug-21-17 17:30	Aug-21-17 17:30	Aug-21-17 17:30	Aug-21-17 17:30
	Analyzed:	Aug-22-17 05:47	Aug-22-17 06:10	Aug-22-17 06:18	Aug-22-17 06:26	Aug-22-17 06:33	Aug-22-17 06:41
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Chloride	653 4.91	2610 24.9	1430 4.96	434 4.97	273 4.90	13.9 4.97
TPH By SW8015 Mod	Extracted:					Aug-14-17 17:00	Aug-14-17 17:00
	Analyzed:					Aug-15-17 03:52	Aug-15-17 04:13
	Units/RL:					mg/kg RL	mg/kg RL
	Gasoline Range Hydrocarbons (GRO)					<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)						<15.0 15.0	133 15.0
Oil Range Hydrocarbons (ORO)						<15.0 15.0	56.5 15.0
Total TPH						<15.0 15.0	190 15.0

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Version: 1.0%

Kelsey Brooks
Project Manager



Certificate of Analysis Summary 560036

COG Operating LLC, Artesia, NM

Project Name: Skelly Unit #743



Project Id:

Contact: Aaron Lieb

Project Location: Skelly Unit #743

Date Received in Lab: Fri Aug-11-17 11:45 am

Report Date: 23-AUG-17

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	560036-019	560036-020	560036-021	560036-022	560036-023	
	Field Id:	T3-1'	T3-2'	T3-3'	T3-4'	T3-7'	
	Depth:	1- ft	2- ft	3- ft	4- ft	7- ft	
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	
	Sampled:	Aug-09-17 11:30	Aug-09-17 11:30	Aug-09-17 11:30	Aug-09-17 11:30	Aug-09-17 11:30	
BTEX by EPA 8021B	Extracted:	Aug-15-17 10:00	Aug-15-17 10:00	Aug-15-17 10:00	Aug-15-17 10:00	Aug-21-17 09:40	
	Analyzed:	Aug-15-17 16:09	Aug-15-17 16:28	Aug-15-17 16:47	Aug-15-17 17:06	Aug-21-17 15:53	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Benzene		<0.00198 0.00198	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	
Toluene		<0.00198 0.00198	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	
Ethylbenzene		<0.00198 0.00198	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	
m,p-Xylenes		<0.00396 0.00396	<0.00402 0.00402	<0.00401 0.00401	<0.00398 0.00398	<0.00398 0.00398	
o-Xylene		<0.00198 0.00198	0.00253 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	
Total Xylenes		<0.00198 0.00198	0.00253 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	
Total BTEX		<0.00198 0.00198	0.00253 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	
Inorganic Anions by EPA 300/300.1	Extracted:	Aug-21-17 17:30	Aug-21-17 17:30	Aug-22-17 10:30	Aug-22-17 10:30	Aug-22-17 10:30	
	Analyzed:	Aug-22-17 06:49	Aug-22-17 06:56	Aug-22-17 11:53	Aug-22-17 12:16	Aug-22-17 12:23	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		<4.96 4.96	<4.90 4.90	<4.96 4.96	<4.97 4.97	456 4.98	
TPH By SW8015 Mod	Extracted:	Aug-14-17 17:00	Aug-14-17 17:00	Aug-14-17 17:00	Aug-14-17 17:00	Aug-14-17 17:00	
	Analyzed:	Aug-15-17 04:35	Aug-15-17 04:56	Aug-15-17 05:17	Aug-15-17 07:05	Aug-15-17 07:25	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	
Oil Range Hydrocarbons (ORO)		<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	
Total TPH		<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	

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Kelsey Brooks
Project Manager

Analytical Report 560036

**for
COG Operating LLC**

Project Manager: Aaron Lieb

Skelly Unit #743

23-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)



23-AUG-17

Project Manager: **Aaron Lieb**

COG Operating LLC

2407 Pecos Avenue

Artesia, NM 88210

Reference: XENCO Report No(s): **560036**

Skelly Unit #743

Project Address: Skelly Unit #743

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) 560036. 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. 560036 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,

Kelsey Brooks

Project Manager

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Certified and approved by numerous States and Agencies.

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Sample Cross Reference 560036



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
T1-Surface	S	08-09-17 10:30		560036-001
T1-1'	S	08-09-17 10:30	1 ft	560036-002
T1-2'	S	08-09-17 10:30	2 ft	560036-003
T1-3'	S	08-09-17 10:30	3 ft	560036-004
T1-4'	S	08-09-17 10:30	4 ft	560036-005
T1-9'	S	08-09-17 10:30	9 ft	560036-006
T1-14'	S	08-09-17 10:30	14 ft	560036-007
T2-Surface	S	08-09-17 11:00		560036-008
T2-1'	S	08-09-17 11:00	1 ft	560036-009
T2-2'	S	08-09-17 11:00	2 ft	560036-010
T2-3'	S	08-09-17 11:00	3 ft	560036-011
T2-4'	S	08-09-17 11:00	4 ft	560036-012
T2-6'	S	08-09-17 11:00	6 ft	560036-013
T2-8'	S	08-09-17 11:15	8 ft	560036-014
T2-10'	S	08-09-17 11:15	10 ft	560036-015
T2-12'	S	08-09-17 11:15	12 ft	560036-016
T2-17'	S	08-09-17 11:15	17 ft	560036-017
T3-Surface	S	08-09-17 11:30		560036-018
T3-1'	S	08-09-17 11:30	1 ft	560036-019
T3-2'	S	08-09-17 11:30	2 ft	560036-020
T3-3'	S	08-09-17 11:30	3 ft	560036-021
T3-4'	S	08-09-17 11:30	4 ft	560036-022
T3-7'	S	08-09-17 11:30	7 ft	560036-023



CASE NARRATIVE

Client Name: COG Operating LLC

Project Name: Skelly Unit #743

Project ID:

Work Order Number(s): 560036

Report Date: 23-AUG-17

Date Received: 08/11/2017

Sample receipt non conformances and comments:

Sample 24 T3-8' not taken, removed from WO per Aaron Lieb by phone-- 08/14/17 KB

Sample 23 T3-7' added BEX/TPH per Aaron Lieb by phone-- 08/14/17 KB

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3025339 BTEX by EPA 8021B

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

Batch: LBA-3025345 BTEX by EPA 8021B

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

Batch: LBA-3025537 BTEX by EPA 8021B

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

Batch: LBA-3025625 BTEX by EPA 8021B

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



Certificate of Analytical Results 560036



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: **T1-Surface**

Matrix: Soil

Date Received: 08.11.17 11.45

Lab Sample Id: 560036-001

Date Collected: 08.09.17 10.30

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 08.21.17 17.30

Basis: Wet Weight

Seq Number: 3025640

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	442	4.96	mg/kg	08.22.17 03.29		1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 08.14.17 17.00

Basis: Wet Weight

Seq Number: 3025053

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	1390	74.9	mg/kg	08.14.17 22.42		5
Diesel Range Organics (DRO)	C10C28DRO	11600	74.9	mg/kg	08.14.17 22.42		5
Oil Range Hydrocarbons (ORO)	PHCG2835	1690	74.9	mg/kg	08.14.17 22.42		5
Total TPH	PHC635	14700	74.9	mg/kg	08.14.17 22.42		5
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	116	%	70-135	08.14.17 22.42		
o-Terphenyl	84-15-1	116	%	70-135	08.14.17 22.42		



Certificate of Analytical Results 560036



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: **T1-Surface**

Matrix: Soil

Date Received: 08.11.17 11.45

Lab Sample Id: 560036-001

Date Collected: 08.09.17 10.30

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.21.17 08.00

Basis: Wet Weight

Seq Number: 3025625

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.0330	0.0198	mg/kg	08.21.17 13.03		10
Toluene	108-88-3	40.0	1.00	mg/kg	08.15.17 18.02	D	100
Ethylbenzene	100-41-4	189	1.00	mg/kg	08.15.17 18.02	D	100
m,p-Xylenes	179601-23-1	194	2.00	mg/kg	08.15.17 18.02	D	100
o-Xylene	95-47-6	1.37	0.0198	mg/kg	08.21.17 13.03		10
Total Xylenes	1330-20-7	195	0.0198	mg/kg	08.15.17 18.02		100
Total BTEX		424	0.0198	mg/kg	08.15.17 18.02		100
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	109	%	80-120	08.21.17 13.03		
1,4-Difluorobenzene	540-36-3	81	%	80-120	08.21.17 13.03		



Certificate of Analytical Results 560036



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: T1-1' Matrix: Soil Date Received: 08.11.17 11.45
Lab Sample Id: 560036-002 Date Collected: 08.09.17 10.30 Sample Depth: 1 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 08.21.17 17.30 Basis: Wet Weight
Seq Number: 3025640

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	62.7	5.00	mg/kg	08.22.17 03.52		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 08.14.17 17.00 Basis: Wet Weight
Seq Number: 3025053

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.14.17 23.02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.14.17 23.02	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.14.17 23.02	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.14.17 23.02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	08.14.17 23.02	
o-Terphenyl	84-15-1	97	%	70-135	08.14.17 23.02	



Certificate of Analytical Results 560036



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: T1-1'
Lab Sample Id: 560036-002

Matrix: Soil
Date Collected: 08.09.17 10.30

Date Received: 08.11.17 11.45
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.16.17 09.20

Basis: Wet Weight

Seq Number: 3025345

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00356	0.00356	mg/kg	08.16.17 22.24	U	1
Toluene	108-88-3	<0.00356	0.00356	mg/kg	08.16.17 22.24	U	1
Ethylbenzene	100-41-4	<0.00356	0.00356	mg/kg	08.16.17 22.24	U	1
m,p-Xylenes	179601-23-1	<0.00712	0.00712	mg/kg	08.16.17 22.24	U	1
o-Xylene	95-47-6	0.00448	0.00356	mg/kg	08.16.17 22.24		1
Total Xylenes	1330-20-7	0.00448	0.00356	mg/kg	08.16.17 22.24		1
Total BTEX		0.00448	0.00356	mg/kg	08.16.17 22.24		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	82	%	80-120	08.16.17 22.24		
1,4-Difluorobenzene	540-36-3	103	%	80-120	08.16.17 22.24		



Certificate of Analytical Results 560036



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: T1-2'
Lab Sample Id: 560036-003

Matrix: Soil
Date Collected: 08.09.17 10.30

Date Received: 08.11.17 11.45
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MGO

Analyst: MGO

Seq Number: 3025640

Date Prep: 08.21.17 17.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1500	24.8	mg/kg	08.22.17 04.00		5

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3025053

Date Prep: 08.14.17 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.15.17 00.03	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.15.17 00.03	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.15.17 00.03	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.15.17 00.03	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	115	%	70-135	08.15.17 00.03		
o-Terphenyl	84-15-1	113	%	70-135	08.15.17 00.03		



Certificate of Analytical Results 560036



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: T1-2'
Lab Sample Id: 560036-003

Matrix: Soil
Date Collected: 08.09.17 10.30

Date Received: 08.11.17 11.45
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.16.17 09.20

Basis: Wet Weight

Seq Number: 3025345

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00341	0.00341	mg/kg	08.16.17 20.31	U	1
Toluene	108-88-3	<0.00341	0.00341	mg/kg	08.16.17 20.31	U	1
Ethylbenzene	100-41-4	<0.00341	0.00341	mg/kg	08.16.17 20.31	U	1
m,p-Xylenes	179601-23-1	<0.00683	0.00683	mg/kg	08.16.17 20.31	U	1
o-Xylene	95-47-6	<0.00341	0.00341	mg/kg	08.16.17 20.31	U	1
Total Xylenes	1330-20-7	<0.00341	0.00341	mg/kg	08.16.17 20.31	U	1
Total BTEX		<0.00341	0.00341	mg/kg	08.16.17 20.31	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	82	%	80-120	08.16.17 20.31		
1,4-Difluorobenzene	540-36-3	96	%	80-120	08.16.17 20.31		



Certificate of Analytical Results 560036



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: T1-3' Matrix: Soil Date Received: 08.11.17 11.45
Lab Sample Id: 560036-004 Date Collected: 08.09.17 10.30 Sample Depth: 3 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 08.21.17 17.30 Basis: Wet Weight
Seq Number: 3025640

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	101	4.92	mg/kg	08.22.17 04.07		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 08.14.17 17.00 Basis: Wet Weight
Seq Number: 3025053

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.15.17 00.24	U	1
Diesel Range Organics (DRO)	C10C28DRO	37.5	15.0	mg/kg	08.15.17 00.24		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.15.17 00.24	U	1
Total TPH	PHC635	37.5	15.0	mg/kg	08.15.17 00.24		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	100	%	70-135	08.15.17 00.24		
o-Terphenyl	84-15-1	97	%	70-135	08.15.17 00.24		

COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: T1-3'
Lab Sample Id: 560036-004

Matrix: Soil
Date Collected: 08.09.17 10.30

Date Received: 08.11.17 11.45
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.16.17 09.20

Basis: Wet Weight

Seq Number: 3025345

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00333	0.00333	mg/kg	08.16.17 22.05	U	1
Toluene	108-88-3	<0.00333	0.00333	mg/kg	08.16.17 22.05	U	1
Ethylbenzene	100-41-4	<0.00333	0.00333	mg/kg	08.16.17 22.05	U	1
m,p-Xylenes	179601-23-1	<0.00667	0.00667	mg/kg	08.16.17 22.05	U	1
o-Xylene	95-47-6	<0.00333	0.00333	mg/kg	08.16.17 22.05	U	1
Total Xylenes	1330-20-7	<0.00333	0.00333	mg/kg	08.16.17 22.05	U	1
Total BTEX		<0.00333	0.00333	mg/kg	08.16.17 22.05	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	85	%	80-120	08.16.17 22.05		
1,4-Difluorobenzene	540-36-3	93	%	80-120	08.16.17 22.05		



Certificate of Analytical Results 560036



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: T1-4' Matrix: Soil Date Received: 08.11.17 11.45
Lab Sample Id: 560036-005 Date Collected: 08.09.17 10.30 Sample Depth: 4 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 08.21.17 17.30 Basis: Wet Weight
Seq Number: 3025640

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	22.2	4.97	mg/kg	08.22.17 04.15		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 08.14.17 17.00 Basis: Wet Weight
Seq Number: 3025053

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.15.17 00.44	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.15.17 00.44	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.15.17 00.44	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.15.17 00.44	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	100	%	70-135	08.15.17 00.44		
o-Terphenyl	84-15-1	97	%	70-135	08.15.17 00.44		

COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: T1-4'
Lab Sample Id: 560036-005

Matrix: Soil
Date Collected: 08.09.17 10.30

Date Received: 08.11.17 11.45
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.15.17 10.00

Basis: Wet Weight

Seq Number: 3025339

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.15.17 12.22	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.15.17 12.22	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.15.17 12.22	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.15.17 12.22	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.15.17 12.22	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.15.17 12.22	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.15.17 12.22	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	84	%	80-120	08.15.17 12.22		
1,4-Difluorobenzene	540-36-3	99	%	80-120	08.15.17 12.22		



Certificate of Analytical Results 560036



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: T1-9' Matrix: Soil Date Received: 08.11.17 11.45
Lab Sample Id: 560036-006 Date Collected: 08.09.17 10.30 Sample Depth: 9 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 08.21.17 17.30 Basis: Wet Weight
Seq Number: 3025640

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	361	4.96	mg/kg	08.22.17 04.38		1



Certificate of Analytical Results 560036



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: T1-14' Matrix: Soil Date Received: 08.11.17 11.45
Lab Sample Id: 560036-007 Date Collected: 08.09.17 10.30 Sample Depth: 14 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 08.21.17 17.30 Basis: Wet Weight
Seq Number: 3025640

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	93.9	4.93	mg/kg	08.22.17 04.46		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 08.14.17 17.00 Basis: Wet Weight
Seq Number: 3025053

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	08.15.17 01.05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	08.15.17 01.05	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9	mg/kg	08.15.17 01.05	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	08.15.17 01.05	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	99	%	70-135	08.15.17 01.05		
o-Terphenyl	84-15-1	94	%	70-135	08.15.17 01.05		



Certificate of Analytical Results 560036



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: T1-14'
Lab Sample Id: 560036-007

Matrix: Soil
Date Collected: 08.09.17 10.30

Date Received: 08.11.17 11.45
Sample Depth: 14 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.15.17 10.00

Basis: Wet Weight

Seq Number: 3025339

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.15.17 12.41	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.15.17 12.41	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.15.17 12.41	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.15.17 12.41	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.15.17 12.41	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.15.17 12.41	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.15.17 12.41	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	98	%	80-120	08.15.17 12.41		
4-Bromofluorobenzene	460-00-4	83	%	80-120	08.15.17 12.41		



Certificate of Analytical Results 560036



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: T2-Surface

Matrix: Soil

Date Received: 08.11.17 11.45

Lab Sample Id: 560036-008

Date Collected: 08.09.17 11.00

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 08.21.17 17.30

Basis: Wet Weight

Seq Number: 3025640

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	304	4.90	mg/kg	08.22.17 04.54		1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 08.14.17 17.00

Basis: Wet Weight

Seq Number: 3025053

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.15.17 01.26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.15.17 01.26	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.15.17 01.26	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.15.17 01.26	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	100	%	70-135	08.15.17 01.26		
o-Terphenyl	84-15-1	95	%	70-135	08.15.17 01.26		



Certificate of Analytical Results 560036



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: **T2-Surface**

Matrix: Soil

Date Received: 08.11.17 11.45

Lab Sample Id: 560036-008

Date Collected: 08.09.17 11.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.16.17 09.20

Basis: Wet Weight

Seq Number: 3025345

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00360	0.00360	mg/kg	08.16.17 20.50	U	1
Toluene	108-88-3	<0.00360	0.00360	mg/kg	08.16.17 20.50	U	1
Ethylbenzene	100-41-4	<0.00360	0.00360	mg/kg	08.16.17 20.50	U	1
m,p-Xylenes	179601-23-1	<0.00719	0.00719	mg/kg	08.16.17 20.50	U	1
o-Xylene	95-47-6	0.00453	0.00360	mg/kg	08.16.17 20.50		1
Total Xylenes	1330-20-7	0.00453	0.00360	mg/kg	08.16.17 20.50		1
Total BTEX		0.00453	0.00360	mg/kg	08.16.17 20.50		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	96	%	80-120	08.16.17 20.50		
4-Bromofluorobenzene	460-00-4	81	%	80-120	08.16.17 20.50		



Certificate of Analytical Results 560036



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: T2-1' Matrix: Soil Date Received: 08.11.17 11.45
Lab Sample Id: 560036-009 Date Collected: 08.09.17 11.00 Sample Depth: 1 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 08.21.17 17.30 Basis: Wet Weight
Seq Number: 3025640

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	41.6	4.91	mg/kg	08.22.17 05.01		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 08.14.17 17.00 Basis: Wet Weight
Seq Number: 3025053

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.15.17 01.48	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.15.17 01.48	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.15.17 01.48	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.15.17 01.48	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	99	%	70-135	08.15.17 01.48		
o-Terphenyl	84-15-1	95	%	70-135	08.15.17 01.48		



Certificate of Analytical Results 560036



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: T2-1'
Lab Sample Id: 560036-009

Matrix: Soil
Date Collected: 08.09.17 11.00

Date Received: 08.11.17 11.45
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.15.17 10.00

Basis: Wet Weight

Seq Number: 3025339

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	08.15.17 13.19	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	08.15.17 13.19	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	08.15.17 13.19	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	08.15.17 13.19	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	08.15.17 13.19	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	08.15.17 13.19	U	1
Total BTEX		<0.00202	0.00202	mg/kg	08.15.17 13.19	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	80-120	08.15.17 13.19		
4-Bromofluorobenzene	460-00-4	86	%	80-120	08.15.17 13.19		



Certificate of Analytical Results 560036



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: T2-2' Matrix: Soil Date Received: 08.11.17 11.45
Lab Sample Id: 560036-010 Date Collected: 08.09.17 11.00 Sample Depth: 2 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 08.21.17 17.30 Basis: Wet Weight
Seq Number: 3025640

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	106	4.96	mg/kg	08.22.17 05.09		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 08.14.17 17.00 Basis: Wet Weight
Seq Number: 3025053

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.15.17 02.08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.15.17 02.08	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.15.17 02.08	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.15.17 02.08	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	102	%	70-135	08.15.17 02.08		
o-Terphenyl	84-15-1	99	%	70-135	08.15.17 02.08		



Certificate of Analytical Results 560036



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: T2-2'
Lab Sample Id: 560036-010

Matrix: Soil
Date Collected: 08.09.17 11.00

Date Received: 08.11.17 11.45
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.16.17 09.20

Basis: Wet Weight

Seq Number: 3025345

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00364	0.00364	mg/kg	08.16.17 21.09	U	1
Toluene	108-88-3	<0.00364	0.00364	mg/kg	08.16.17 21.09	U	1
Ethylbenzene	100-41-4	<0.00364	0.00364	mg/kg	08.16.17 21.09	U	1
m,p-Xylenes	179601-23-1	<0.00727	0.00727	mg/kg	08.16.17 21.09	U	1
o-Xylene	95-47-6	0.00578	0.00364	mg/kg	08.16.17 21.09		1
Total Xylenes	1330-20-7	0.00578	0.00364	mg/kg	08.16.17 21.09		1
Total BTEX		0.00578	0.00364	mg/kg	08.16.17 21.09		1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	95		%	80-120	08.16.17 21.09	
4-Bromofluorobenzene	460-00-4	80		%	80-120	08.16.17 21.09	

COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: T2-3' Matrix: Soil Date Received: 08.11.17 11.45
 Lab Sample Id: 560036-011 Date Collected: 08.09.17 11.00 Sample Depth: 3 ft
 Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
 Tech: MGO % Moisture:
 Analyst: MGO Date Prep: 08.21.17 17.30 Basis: Wet Weight
 Seq Number: 3025640

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	379	4.97	mg/kg	08.22.17 05.17		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 08.14.17 17.00 Basis: Wet Weight
 Seq Number: 3025053

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.15.17 02.29	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.15.17 02.29	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.15.17 02.29	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.15.17 02.29	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	08.15.17 02.29	
o-Terphenyl	84-15-1	95	%	70-135	08.15.17 02.29	



Certificate of Analytical Results 560036



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: T2-3'
Lab Sample Id: 560036-011

Matrix: Soil
Date Collected: 08.09.17 11.00

Date Received: 08.11.17 11.45
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.15.17 10.00

Basis: Wet Weight

Seq Number: 3025339

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.15.17 13.56	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.15.17 13.56	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.15.17 13.56	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	08.15.17 13.56	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.15.17 13.56	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.15.17 13.56	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.15.17 13.56	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	82		%	80-120	08.15.17 13.56	
1,4-Difluorobenzene	540-36-3	98		%	80-120	08.15.17 13.56	



Certificate of Analytical Results 560036



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: T2-4' Matrix: Soil Date Received: 08.11.17 11.45
Lab Sample Id: 560036-012 Date Collected: 08.09.17 11.00 Sample Depth: 4 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 08.21.17 17.30 Basis: Wet Weight
Seq Number: 3025640

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1860	24.6	mg/kg	08.22.17 05.40		5

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 08.14.17 17.00 Basis: Wet Weight
Seq Number: 3025053

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.15.17 03.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.15.17 03.32	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.15.17 03.32	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.15.17 03.32	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	100	%	70-135	08.15.17 03.32		
o-Terphenyl	84-15-1	97	%	70-135	08.15.17 03.32		



Certificate of Analytical Results 560036



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: T2-4'
Lab Sample Id: 560036-012

Matrix: Soil
Date Collected: 08.09.17 11.00

Date Received: 08.11.17 11.45
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.15.17 10.00

Basis: Wet Weight

Seq Number: 3025339

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.15.17 14.54	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.15.17 14.54	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.15.17 14.54	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.15.17 14.54	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.15.17 14.54	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.15.17 14.54	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.15.17 14.54	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	85	%	80-120	08.15.17 14.54		
1,4-Difluorobenzene	540-36-3	98	%	80-120	08.15.17 14.54		



Certificate of Analytical Results 560036



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: T2-6'
Lab Sample Id: 560036-013

Matrix: Soil
Date Collected: 08.09.17 11.00

Date Received: 08.11.17 11.45
Sample Depth: 6 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 08.21.17 17.30

Basis: Wet Weight

Seq Number: 3025640

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	653	4.91	mg/kg	08.22.17 05.47		1



Certificate of Analytical Results 560036



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: T2-8'
Lab Sample Id: 560036-014

Matrix: Soil
Date Collected: 08.09.17 11.15

Date Received: 08.11.17 11.45
Sample Depth: 8 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 08.21.17 17.30

Basis: Wet Weight

Seq Number: 3025640

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2610	24.9	mg/kg	08.22.17 06.10		5



Certificate of Analytical Results 560036



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: **T2-10'**
Lab Sample Id: 560036-015

Matrix: Soil
Date Collected: 08.09.17 11.15

Date Received: 08.11.17 11.45
Sample Depth: 10 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 08.21.17 17.30

Basis: Wet Weight

Seq Number: 3025640

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1430	4.96	mg/kg	08.22.17 06.18		1



Certificate of Analytical Results 560036



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: T2-12'
Lab Sample Id: 560036-016

Matrix: Soil
Date Collected: 08.09.17 11.15

Date Received: 08.11.17 11.45
Sample Depth: 12 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 08.21.17 17.30

Basis: Wet Weight

Seq Number: 3025640

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	434	4.97	mg/kg	08.22.17 06.26		1



Certificate of Analytical Results 560036



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: T2-17' Matrix: Soil Date Received: 08.11.17 11.45
Lab Sample Id: 560036-017 Date Collected: 08.09.17 11.15 Sample Depth: 17 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 08.21.17 17.30 Basis: Wet Weight
Seq Number: 3025640

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	273	4.90	mg/kg	08.22.17 06.33		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 08.14.17 17.00 Basis: Wet Weight
Seq Number: 3025053

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.15.17 03.52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.15.17 03.52	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.15.17 03.52	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.15.17 03.52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	08.15.17 03.52	
o-Terphenyl	84-15-1	95	%	70-135	08.15.17 03.52	



Certificate of Analytical Results 560036



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: T2-17'
Lab Sample Id: 560036-017

Matrix: Soil
Date Collected: 08.09.17 11.15

Date Received: 08.11.17 11.45
Sample Depth: 17 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.16.17 09.20

Basis: Wet Weight

Seq Number: 3025345

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00357	0.00357	mg/kg	08.16.17 21.28	U	1
Toluene	108-88-3	<0.00357	0.00357	mg/kg	08.16.17 21.28	U	1
Ethylbenzene	100-41-4	<0.00357	0.00357	mg/kg	08.16.17 21.28	U	1
m,p-Xylenes	179601-23-1	<0.00714	0.00714	mg/kg	08.16.17 21.28	U	1
o-Xylene	95-47-6	<0.00357	0.00357	mg/kg	08.16.17 21.28	U	1
Total Xylenes	1330-20-7	<0.00357	0.00357	mg/kg	08.16.17 21.28	U	1
Total BTEX		<0.00357	0.00357	mg/kg	08.16.17 21.28	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	94	%	80-120	08.16.17 21.28		
4-Bromofluorobenzene	460-00-4	82	%	80-120	08.16.17 21.28		



Certificate of Analytical Results 560036



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: T3-Surface

Matrix: Soil

Date Received: 08.11.17 11.45

Lab Sample Id: 560036-018

Date Collected: 08.09.17 11.30

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 08.21.17 17.30

Basis: Wet Weight

Seq Number: 3025640

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	13.9	4.97	mg/kg	08.22.17 06.41		1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 08.14.17 17.00

Basis: Wet Weight

Seq Number: 3025053

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.15.17 04.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	133	15.0	mg/kg	08.15.17 04.13		1
Oil Range Hydrocarbons (ORO)	PHCG2835	56.5	15.0	mg/kg	08.15.17 04.13		1
Total TPH	PHC635	190	15.0	mg/kg	08.15.17 04.13		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	08.15.17 04.13	
o-Terphenyl	84-15-1	96	%	70-135	08.15.17 04.13	



Certificate of Analytical Results 560036



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: T3-Surface

Matrix: Soil

Date Received: 08.11.17 11.45

Lab Sample Id: 560036-018

Date Collected: 08.09.17 11.30

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.16.17 09.20

Basis: Wet Weight

Seq Number: 3025345

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00360	0.00360	mg/kg	08.16.17 21.46	U	1
Toluene	108-88-3	<0.00360	0.00360	mg/kg	08.16.17 21.46	U	1
Ethylbenzene	100-41-4	<0.00360	0.00360	mg/kg	08.16.17 21.46	U	1
m,p-Xylenes	179601-23-1	<0.00719	0.00719	mg/kg	08.16.17 21.46	U	1
o-Xylene	95-47-6	<0.00360	0.00360	mg/kg	08.16.17 21.46	U	1
Total Xylenes	1330-20-7	<0.00360	0.00360	mg/kg	08.16.17 21.46	U	1
Total BTEX		<0.00360	0.00360	mg/kg	08.16.17 21.46	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	80-120	08.16.17 21.46		
4-Bromofluorobenzene	460-00-4	82	%	80-120	08.16.17 21.46		



Certificate of Analytical Results 560036



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: T3-1' Matrix: Soil Date Received: 08.11.17 11.45
Lab Sample Id: 560036-019 Date Collected: 08.09.17 11.30 Sample Depth: 1 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 08.21.17 17.30 Basis: Wet Weight
Seq Number: 3025640

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.96	4.96	mg/kg	08.22.17 06.49	U	1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 08.14.17 17.00 Basis: Wet Weight
Seq Number: 3025053

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.15.17 04.35	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.15.17 04.35	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.15.17 04.35	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.15.17 04.35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	08.15.17 04.35	
o-Terphenyl	84-15-1	97	%	70-135	08.15.17 04.35	



Certificate of Analytical Results 560036



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: T3-1'
Lab Sample Id: 560036-019

Matrix: Soil
Date Collected: 08.09.17 11.30

Date Received: 08.11.17 11.45
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.15.17 10.00

Basis: Wet Weight

Seq Number: 3025339

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	08.15.17 16.09	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	08.15.17 16.09	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	08.15.17 16.09	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	08.15.17 16.09	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	08.15.17 16.09	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	08.15.17 16.09	U	1
Total BTEX		<0.00198	0.00198	mg/kg	08.15.17 16.09	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	81	%	80-120	08.15.17 16.09		
1,4-Difluorobenzene	540-36-3	97	%	80-120	08.15.17 16.09		



Certificate of Analytical Results 560036



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: T3-2' Matrix: Soil Date Received: 08.11.17 11.45
Lab Sample Id: 560036-020 Date Collected: 08.09.17 11.30 Sample Depth: 2 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 08.21.17 17.30 Basis: Wet Weight
Seq Number: 3025640

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.90	4.90	mg/kg	08.22.17 06.56	U	1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 08.14.17 17.00 Basis: Wet Weight
Seq Number: 3025053

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.15.17 04.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.15.17 04.56	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.15.17 04.56	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.15.17 04.56	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	99	%	70-135	08.15.17 04.56		
o-Terphenyl	84-15-1	94	%	70-135	08.15.17 04.56		



Certificate of Analytical Results 560036



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: T3-2'
Lab Sample Id: 560036-020

Matrix: Soil
Date Collected: 08.09.17 11.30

Date Received: 08.11.17 11.45
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.15.17 10.00

Basis: Wet Weight

Seq Number: 3025339

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	08.15.17 16.28	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	08.15.17 16.28	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	08.15.17 16.28	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	08.15.17 16.28	U	1
o-Xylene	95-47-6	0.00253	0.00201	mg/kg	08.15.17 16.28		1
Total Xylenes	1330-20-7	0.00253	0.00201	mg/kg	08.15.17 16.28		1
Total BTEX		0.00253	0.00201	mg/kg	08.15.17 16.28		1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	83		%	80-120	08.15.17 16.28	
1,4-Difluorobenzene	540-36-3	100		%	80-120	08.15.17 16.28	



Certificate of Analytical Results 560036



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: T3-3' Matrix: Soil Date Received: 08.11.17 11.45
Lab Sample Id: 560036-021 Date Collected: 08.09.17 11.30 Sample Depth: 3 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MNV % Moisture:
Analyst: MGO Date Prep: 08.22.17 10.30 Basis: Wet Weight
Seq Number: 3025713

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.96	4.96	mg/kg	08.22.17 11.53	U	1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 08.14.17 17.00 Basis: Wet Weight
Seq Number: 3025053

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	08.15.17 05.17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	08.15.17 05.17	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9	mg/kg	08.15.17 05.17	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	08.15.17 05.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-135	08.15.17 05.17	
o-Terphenyl	84-15-1	106	%	70-135	08.15.17 05.17	



Certificate of Analytical Results 560036



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: T3-3'
Lab Sample Id: 560036-021

Matrix: Soil
Date Collected: 08.09.17 11.30

Date Received: 08.11.17 11.45
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.15.17 10.00

Basis: Wet Weight

Seq Number: 3025339

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.15.17 16.47	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.15.17 16.47	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.15.17 16.47	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	08.15.17 16.47	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.15.17 16.47	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.15.17 16.47	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.15.17 16.47	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	82	%	80-120	08.15.17 16.47		
1,4-Difluorobenzene	540-36-3	96	%	80-120	08.15.17 16.47		



Certificate of Analytical Results 560036



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: T3-4' Matrix: Soil Date Received: 08.11.17 11.45
Lab Sample Id: 560036-022 Date Collected: 08.09.17 11.30 Sample Depth: 4 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MNV % Moisture:
Analyst: MGO Date Prep: 08.22.17 10.30 Basis: Wet Weight
Seq Number: 3025713

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.97	4.97	mg/kg	08.22.17 12.16	U	1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 08.14.17 17.00 Basis: Wet Weight
Seq Number: 3025053

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.15.17 07.05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.15.17 07.05	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.15.17 07.05	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.15.17 07.05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	08.15.17 07.05	
o-Terphenyl	84-15-1	94	%	70-135	08.15.17 07.05	



Certificate of Analytical Results 560036



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: T3-4'
Lab Sample Id: 560036-022

Matrix: Soil
Date Collected: 08.09.17 11.30

Date Received: 08.11.17 11.45
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.15.17 10.00

Basis: Wet Weight

Seq Number: 3025339

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.15.17 17.06	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.15.17 17.06	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.15.17 17.06	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.15.17 17.06	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.15.17 17.06	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.15.17 17.06	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.15.17 17.06	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	97	%	80-120	08.15.17 17.06		
4-Bromofluorobenzene	460-00-4	85	%	80-120	08.15.17 17.06		



Certificate of Analytical Results 560036



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: T3-7' Matrix: Soil Date Received: 08.11.17 11.45
Lab Sample Id: 560036-023 Date Collected: 08.09.17 11.30 Sample Depth: 7 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MNV % Moisture:
Analyst: MGO Date Prep: 08.22.17 10.30 Basis: Wet Weight
Seq Number: 3025713

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	456	4.98	mg/kg	08.22.17 12.23		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 08.14.17 17.00 Basis: Wet Weight
Seq Number: 3025053

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.15.17 07.25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.15.17 07.25	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.15.17 07.25	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.15.17 07.25	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	97	%	70-135	08.15.17 07.25		
o-Terphenyl	84-15-1	94	%	70-135	08.15.17 07.25		



Certificate of Analytical Results 560036



COG Operating LLC, Artesia, NM

Skelly Unit #743

Sample Id: T3-7'
Lab Sample Id: 560036-023

Matrix: Soil
Date Collected: 08.09.17 11.30

Date Received: 08.11.17 11.45
Sample Depth: 7 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.21.17 09.40

Basis: Wet Weight

Seq Number: 3025537

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.21.17 15.53	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.21.17 15.53	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.21.17 15.53	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.21.17 15.53	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.21.17 15.53	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.21.17 15.53	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.21.17 15.53	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	92	%	80-120	08.21.17 15.53		
4-Bromofluorobenzene	460-00-4	113	%	80-120	08.21.17 15.53		

- 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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(432) 563-1800	(432) 563-1713
(602) 437-0330	

COG Operating LLC
Skelly Unit #743**Analytical Method: Inorganic Anions by EPA 300/300.1**

Seq Number: 3025640

Matrix: Solid

Prep Method: E300P

MB Sample Id: 729719-1-BLK

LCS Sample Id: 729719-1-BKS

Date Prep: 08.21.17

LCSD Sample Id: 729719-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<4.90	245	257	105	252	101	90-110	2	20	mg/kg	08.22.17 03:14	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3025713

Matrix: Solid

Prep Method: E300P

MB Sample Id: 729725-1-BLK

LCS Sample Id: 729725-1-BKS

Date Prep: 08.22.17

LCSD Sample Id: 729725-1-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	259	104	252	101	90-110	3	20	mg/kg	08.22.17 11:37	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3025640

Matrix: Soil

Prep Method: E300P

Parent Sample Id: 560036-001

MS Sample Id: 560036-001 S

Date Prep: 08.21.17

MSD Sample Id: 560036-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	442	248	679	96	669	92	90-110	1	20	mg/kg	08.22.17 03:37	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3025640

Matrix: Soil

Prep Method: E300P

Parent Sample Id: 560036-011

MS Sample Id: 560036-011 S

Date Prep: 08.21.17

MSD Sample Id: 560036-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	379	249	618	96	624	98	90-110	1	20	mg/kg	08.22.17 05:24	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3025713

Matrix: Soil

Prep Method: E300P

Parent Sample Id: 560036-021

MS Sample Id: 560036-021 S

Date Prep: 08.22.17

MSD Sample Id: 560036-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<4.96	248	269	108	274	110	90-110	2	20	mg/kg	08.22.17 12:00	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3025713

Matrix: Soil

Prep Method: E300P

Parent Sample Id: 560039-008

MS Sample Id: 560039-008 S

Date Prep: 08.22.17

MSD Sample Id: 560039-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	122	245	381	106	385	107	90-110	1	20	mg/kg	08.22.17 13:48	



QC Summary 560036

COG Operating LLC

Skelly Unit #743

Analytical Method: TPH By SW8015 Mod

Seq Number: 3025053

MB Sample Id: 729380-1-BLK

Matrix: Solid

LCS Sample Id: 729380-1-BKS

Prep Method: TX1005P

Date Prep: 08.14.17

LCSD Sample Id: 729380-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	854	85	887	89	70-135	4	35	mg/kg	08.14.17 22:02	
Diesel Range Organics (DRO)	<15.0	1000	1070	107	1030	103	70-135	4	35	mg/kg	08.14.17 22:02	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane	112		106		109		70-135	%	08.14.17 22:02			
o-Terphenyl	112		98		123		70-135	%	08.14.17 22:02			

Analytical Method: TPH By SW8015 Mod

Seq Number: 3025053

Parent Sample Id: 560036-002

Matrix: Soil

MS Sample Id: 560036-002 S

Prep Method: TX1005P

Date Prep: 08.14.17

MSD Sample Id: 560036-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	999	839	84	855	86	70-135	2	35	mg/kg	08.14.17 23:23	
Diesel Range Organics (DRO)	<15.0	999	1050	105	1080	108	70-135	3	35	mg/kg	08.14.17 23:23	
Surrogate			MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane			107		105		70-135	%	08.14.17 23:23			
o-Terphenyl			119		98		70-135	%	08.14.17 23:23			

Analytical Method: BTEX by EPA 8021B

Seq Number: 3025339

MB Sample Id: 729487-1-BLK

Matrix: Solid

LCS Sample Id: 729487-1-BKS

Prep Method: SW5030B

Date Prep: 08.15.17

LCSD Sample Id: 729487-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.117	116	0.115	115	70-130	2	35	mg/kg	08.15.17 08:53	
Toluene	<0.00202	0.101	0.113	112	0.112	112	70-130	1	35	mg/kg	08.15.17 08:53	
Ethylbenzene	<0.00202	0.101	0.110	109	0.110	110	71-129	0	35	mg/kg	08.15.17 08:53	
m,p-Xylenes	<0.00403	0.202	0.215	106	0.214	106	70-135	0	35	mg/kg	08.15.17 08:53	
o-Xylene	<0.00202	0.101	0.103	102	0.103	103	71-133	0	35	mg/kg	08.15.17 08:53	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
1,4-Difluorobenzene	98		100		100		80-120	%	08.15.17 08:53			
4-Bromofluorobenzene	84		86		88		80-120	%	08.15.17 08:53			

COG Operating LLC
Skelly Unit #743

Analytical Method: BTEX by EPA 8021B

Seq Number: 3025345

MB Sample Id: 729520-1-BLK

Matrix: Solid

LCS Sample Id: 729520-1-BKS

Prep Method: SW5030B

Date Prep: 08.16.17

LCSD Sample Id: 729520-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.124	124	0.124	124	70-130	0	35	mg/kg	08.17.17 11:56	
Toluene	<0.00199	0.0996	0.122	122	0.123	123	70-130	1	35	mg/kg	08.17.17 11:56	
Ethylbenzene	<0.00199	0.0996	0.121	121	0.121	121	71-129	0	35	mg/kg	08.17.17 11:56	
m,p-Xylenes	<0.00398	0.199	0.237	119	0.237	119	70-135	0	35	mg/kg	08.17.17 11:56	
o-Xylene	<0.00199	0.0996	0.115	115	0.116	116	71-133	1	35	mg/kg	08.17.17 11:56	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits			Units	Analysis Date	
1,4-Difluorobenzene	94		98		95		80-120			%	08.17.17 11:56	
4-Bromofluorobenzene	82		86		85		80-120			%	08.17.17 11:56	

Analytical Method: BTEX by EPA 8021B

Seq Number: 3025625

MB Sample Id: 729668-1-BLK

Matrix: Solid

LCS Sample Id: 729668-1-BKS

Prep Method: SW5030B

Date Prep: 08.21.17

LCSD Sample Id: 729668-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.102	102	0.101	101	70-130	1	35	mg/kg	08.21.17 08:04	
Toluene	<0.00200	0.0998	0.101	101	0.0998	100	70-130	1	35	mg/kg	08.21.17 08:04	
Ethylbenzene	<0.00200	0.0998	0.101	101	0.101	101	71-129	0	35	mg/kg	08.21.17 08:04	
m,p-Xylenes	<0.00399	0.200	0.198	99	0.197	99	70-135	1	35	mg/kg	08.21.17 08:04	
o-Xylene	<0.00200	0.0998	0.0965	97	0.0967	97	71-133	0	35	mg/kg	08.21.17 08:04	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits			Units	Analysis Date	
1,4-Difluorobenzene	94		97		97		80-120			%	08.21.17 08:04	
4-Bromofluorobenzene	84		90		90		80-120			%	08.21.17 08:04	

Analytical Method: BTEX by EPA 8021B

Seq Number: 3025537

MB Sample Id: 729681-1-BLK

Matrix: Solid

LCS Sample Id: 729681-1-BKS

Prep Method: SW5030B

Date Prep: 08.21.17

LCSD Sample Id: 729681-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0994	0.110	111	0.108	109	70-130	2	35	mg/kg	08.21.17 15:53	
Toluene	<0.00199	0.0994	0.122	123	0.118	119	70-130	3	35	mg/kg	08.21.17 15:53	
Ethylbenzene	<0.00199	0.0994	0.113	114	0.111	112	71-129	2	35	mg/kg	08.21.17 15:53	
m,p-Xylenes	<0.00398	0.199	0.228	115	0.226	114	70-135	1	35	mg/kg	08.21.17 15:53	
o-Xylene	<0.00199	0.0994	0.116	117	0.114	115	71-133	2	35	mg/kg	08.21.17 15:53	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits			Units	Analysis Date	
1,4-Difluorobenzene	96		99		104		80-120			%	08.21.17 15:53	
4-Bromofluorobenzene	113		108		114		80-120			%	08.21.17 15:53	



QC Summary 560036

COG Operating LLC Skelly Unit #743

Analytical Method: BTEX by EPA 8021B

Seq Number: 3025339

Parent Sample Id: 560035-003

Matrix: Soil

MS Sample Id: 560035-003 S

Prep Method: SW5030B

Date Prep: 08.15.17

MSD Sample Id: 560035-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00198	0.0990	0.102	103	0.110	110	70-130	8	35	mg/kg	08.15.17 09:31	
Toluene	<0.00198	0.0990	0.0983	99	0.104	104	70-130	6	35	mg/kg	08.15.17 09:31	
Ethylbenzene	<0.00198	0.0990	0.0926	94	0.103	103	71-129	11	35	mg/kg	08.15.17 09:31	
m,p-Xylenes	<0.00396	0.198	0.179	90	0.195	98	70-135	9	35	mg/kg	08.15.17 09:31	
o-Xylene	<0.00198	0.0990	0.0871	88	0.0993	99	71-133	13	35	mg/kg	08.15.17 09:31	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		96		80-120	%	08.15.17 09:31
4-Bromofluorobenzene	88		90		80-120	%	08.15.17 09:31

Analytical Method: BTEX by EPA 8021B

Seq Number: 3025345

Parent Sample Id: 560035-001

Matrix: Soil

MS Sample Id: 560035-001 S

Prep Method: SW5030B

Date Prep: 08.16.17

MSD Sample Id: 560035-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00348	0.174	0.186	107	0.176	101	70-130	6	35	mg/kg	08.17.17 12:32	
Toluene	<0.00348	0.174	0.176	101	0.165	94	70-130	6	35	mg/kg	08.17.17 12:32	
Ethylbenzene	<0.00348	0.174	0.162	93	0.151	86	71-129	7	35	mg/kg	08.17.17 12:32	
m,p-Xylenes	<0.00697	0.348	0.313	90	0.291	83	70-135	7	35	mg/kg	08.17.17 12:32	
o-Xylene	<0.00348	0.174	0.154	89	0.145	83	71-133	6	35	mg/kg	08.17.17 12:32	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	95		98		80-120	%	08.17.17 12:32
4-Bromofluorobenzene	83		87		80-120	%	08.17.17 12:32

Analytical Method: BTEX by EPA 8021B

Seq Number: 3025625

Parent Sample Id: 560162-001

Matrix: Soil

MS Sample Id: 560162-001 S

Prep Method: SW5030B

Date Prep: 08.21.17

MSD Sample Id: 560162-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	0.00712	0.101	0.0869	79	0.0733	66	70-130	17	35	mg/kg	08.21.17 08:53	X
Toluene	0.00535	0.101	0.0837	78	0.0769	72	70-130	8	35	mg/kg	08.21.17 08:53	
Ethylbenzene	0.00617	0.101	0.0816	75	0.0886	82	71-129	8	35	mg/kg	08.21.17 08:53	
m,p-Xylenes	0.0309	0.202	0.163	65	0.179	74	70-135	9	35	mg/kg	08.21.17 08:53	X
o-Xylene	0.0235	0.101	0.0812	57	0.0742	51	71-133	9	35	mg/kg	08.21.17 08:53	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	91		85		80-120	%	08.21.17 08:53
4-Bromofluorobenzene	92		83		80-120	%	08.21.17 08:53



COG Operating LLC

Skelly Unit #743

Analytical Method: BTEX by EPA 8021B

Seq Number: 3025537

Parent Sample Id: 560611-008

Matrix: Soil

MS Sample Id: 560611-008 S

Prep Method: SW5030B

Date Prep: 08.21.17

MSD Sample Id: 560611-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.101	0.105	104	0.108	107	70-130	3	35	mg/kg	08.21.17 15:53	
Toluene	<0.00201	0.101	0.111	110	0.114	113	70-130	3	35	mg/kg	08.21.17 15:53	
Ethylbenzene	<0.00201	0.101	0.100	99	0.110	109	71-129	10	35	mg/kg	08.21.17 15:53	
m,p-Xylenes	<0.00402	0.201	0.180	90	0.222	110	70-135	21	35	mg/kg	08.21.17 15:53	
o-Xylene	<0.00201	0.101	0.108	107	0.112	111	71-133	4	35	mg/kg	08.21.17 15:53	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	86		91		80-120	%	08.21.17 15:53
4-Bromofluorobenzene	106		103		80-120	%	08.21.17 15:53



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Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

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560036

Client / Reporting Information		Project Information		Xenco Quote #		Xenco Job #													
Company Name / Branch: COG Operating LLC		Project Name/Number: Skelly Unit #743																	
Company Address: 2407 PECOS Avenue Artesia NM 88210		Project Location: Skelly Unit #743																	
Email: aaleb@concho.com dneel2@concho.com naskell@concho.com		Invoice To: COG Operating LLC Attn: Robert McNeill 600 W. Illinois Midland TX 79701																	
Project Contact: Aaron Lieb		Po Number:																	
Sampler's Name: Aaron Lieb																			
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	TPH/ EXTENDED	BTEX	Chloride	Field Comments	
1	T1- Surf	1	8-17-17	10:30 AM	S	1									X	X	X		
2	T1- 1'	2				1									X	X	X		
3	T1- 2'	3				1									X	X	X		
4	T1- 3'	4				1									X	X	X		
5	T1- 4'	5				1									X	X	X		
6	T1- 9'	6				1									X	X	X		
7	T1- 14'	7				1									X	X	X		
8		8																	
9		9																	
10		10																	
Turnaround Time (Business days)																			
Data Deliverable Information																			
☐ Same Day TAT		☐ 5 Day TAT		☐ Level II Std QC		☐ Level IV (Full Data Pkg / raw data)													
☐ Next Day EMERGENCY		☐ 7 Day TAT		☐ Level III Std QC + Forms		☐ TRRP Level IV													
☐ 2 Day EMERGENCY		☐ Contract TAT		☐ Level 3 (CLP Forms)		☐ UST / RG -411													
☐ 3 Day EMERGENCY				☐ TRRP Checklist															
TAT Starts Day received by Lab, if received by 5:00 pm																			
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY																			
Relinquished by Sampler:		Date Time: 8-17-17		Received By: [Signature]		8-11-17		Relinquished By: [Signature]		8-11-17		Rece: [Signature]							
Relinquished by:		Date Time: 8-12-17 14:20		Received By: [Signature]		10:5		Relinquished By: [Signature]		8-11-17		Rece: [Signature]							
Relinquished by:		Date Time:		Received By:		4		Relinquished By:		4		Rece: [Signature]							
Relinquished by:		Date Time:		Received By:		5		Relinquished By:		5		Rece: [Signature]							

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 responsible 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 terms will be enforced unless previously negotiated under a fully executed client contract.

Temp: 3.8 IR ID: R-8
CF: (0.6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 3.6



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Phoenix, Arizona (480-355-0900)

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Client / Reporting Information		Project Information		Xenco Quote #		Xenco Job #													
Company Name / Branch: COG Operating LLC		Project Name/Number: Skelly Unit #743		Analytical Information		Matrix Codes													
Company Address: 2407 PECOS Avenue Arlisia NM 88210		Project Location: Skelly Unit #743																	
Email: alieb@concho.com dneel2@concho.com raskell@concho.com		Invoice To: COG Operating LLC Attn: Robert McNeill 600 W. Illinois Midland TX 79701																	
Project Contact: Aaron Lieb		PO Number:																	
Sampler's Name: Aaron Lieb																			
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCI	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	TPH/ EXTENDED	BTEX	Chloride	Field Comments	
1	T2- Surf Ace	1	8-11-17	11:00am	S	1									X	X	X		
2	T2- 1'	2				1									X	X	X		
3	T2- 2'	3				1									X	X	X		
4	T2- 3'	4				1									X	X	X		
5	T2- 4'	5				1									X	X	X		
6	T2- 6'	6				1									X	X	X		
7	T2- 8'	7				1									X	X	X		
8	T2- 10'	8				1									X	X	X		
9	T2- 12'	9				1									X	X	X		
10	T2- 17'	10				1									X	X	X		
Turnaround Time (Business days)																		Notes:	
☐ Same Day TAT		☐ 5 Day TAT		☐ Level II Std QC		☐ Level IV (Full Data Pkg /raw data)												Run TPH + BTEX to New Detect	
☐ Next Day EMERGENCY		☐ 7 Day TAT		☐ Level III Std QC+ Forms		☐ TRRP Level IV												(Surf - 4')	
☐ 2 Day EMERGENCY		☐ Contract TAT		☐ Level 3 (CLP Forms)		☐ UST / RG -411													
☐ 3 Day EMERGENCY				☐ TRRP Checklist															
TAT Starts Day received by Lab, if received by 5:00 pm																			
Relinquished by Sampler:		SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY																	
1 Relinquished by: [Signature]		Date Time: 8-11-17 10:00 am	Received By: [Signature]	Date Time: 8-11-17 11:45 am	Relinquished By: [Signature]	Date Time: 8-11-17 11:45 am	Received By: [Signature]												
3 Relinquished by: [Signature]		Date Time: 8-12-17 14:20	Received By: [Signature]	Date Time: 8-12-17 14:20	Relinquished By: [Signature]	Date Time: 8-12-17 14:20	Received By: [Signature]												
Relinquished by:		Date Time:	Received By:	Date Time:	Relinquished By:	Date Time:	Received By:												
5																			

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Temp: 3.0 IR ID: R-8
CF: (0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 3.6



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San Antonio, Texas (210-509-3334)
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Client / Reporting Information		Project Information		Analytical Information		Matrix Codes														
Company Name / Branch: COG Operating LLC		Project Name/Number: Skelly Unit #743																		
Company Address: 2407 PECOS Avenue Artesia NM 88210		Project Location: Skelly Unit #743																		
Email: alleb@concho.com dneel2@concho.com rhaskeil@concho.com		Invoice To: COG Operating LLC Attn: Robert McNeill 600 W. Illinois Midland TX 79701																		
Project Contact: Aaron Lieb		PO Number:																		
Sampler's Name- Aaron Lieb																				
No.	Field ID / Point of Collection	Sample Depth	Collection Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	TPH/ EXTENDED	BTEX	Chloride	Field Comments		
1	T3- Surface	-	8-9-17	11:30am	S	1									X	X	X			
2	T3- 1'	1													X	X	X			
3	T3- 2'	2													X	X	X			
4	T3- 3'	3													X	X	X			
5	T3- 4'	4													X	X	X			
6	T3- 7'	7													X	X	X			
7	T3- 8'	8													X	X	X			
8																				
9																				
10																				
Turnaround Time (Business days)																		Notes:		
☐ Same Day TAT		☐ 5 Day TAT		☐ Level II Std QC		☐ Level IV (Full Data Pkg /raw data)												Run TPH + BTEX to Non-Detect (surf - 4')		
☐ Next Day EMERGENCY		☐ 7 Day TAT		☐ Level III Std QC+ Forms		☐ TRRP Level IV														
☐ 2 Day EMERGENCY		☐ Contract TAT		☐ Level 3 (CLP Forms)		☐ UST / RG-411														
☐ 3 Day EMERGENCY				☐ TRRP Checklist																
TAT Starts Day received by Lab, if received by 5:00 pm																				
Relinquished by Sampler:		SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY																		
1		Date Time: 8-1-17 9am	Received By: [Signature]		Date Time: 8-1-17 11:45		Received By: [Signature]													
Relinquished by:		Date Time: 8-1-17 14:20	Received By: [Signature]		Date Time: 8-1-17 14:20		Received By: [Signature]													
3		Relinquished by:		Date Time:	Received By:		Date Time:		Received By:											
5		Relinquished by:		Date Time:	Received By:		Date Time:		Received By:											

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Temp: 3.8 IR ID: R-8
CF: (0-6: -0.2°C)
Corrected Temp: 3.6



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: COG Operating LLC

Date/ Time Received: 08/11/2017 11:45:00 AM

Work Order #: 560036

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)?	3.6
#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?	Yes MISSING SAMPLE 024 - T3-8'
#11 Chain of Custody signed when relinquished/ received?	Yes
#12 Chain of Custody agrees with sample label(s)?	Yes
#13 Container label(s) legible and intact?	Yes
#14 Sample matrix/ properties agree with Chain of Custody?	Yes
#15 Samples in proper container/ bottle?	Yes
#16 Samples properly preserved?	Yes
#17 Sample container(s) intact?	Yes
#18 Sufficient sample amount for indicated test(s)?	Yes
#19 All samples received within hold time?	Yes
#20 Subcontract of sample(s)?	N/A
#21 VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

NonConformance:

MISSING SAMPLE 024 - T3-8'

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ Contacted by : _____ DateTime : _____

Checklist completed by:

Jessica Kramer
Jessica Kramer

Date: 08/14/2017

Checklist reviewed by:

Kelsey Brooks
Kelsey Brooks

Date: 08/14/2017