

April 12, 2018

Mike Bratcher
NMOCD District 2
811 South First Street
Artesia, NM 88210

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

**Re: Work Plan
Myox 8 State #004H
API #: 30-015-41924
RP#: 2RP-4524
Unit Letter D Section 17, Township 26S, Range 28E
Eddy County, NM**

Mr. Bratcher/Mr. Mann,

COG Operating, LLC (COG) is pleased to submit for your consideration the following remediation work plan for the Myox 8 State #004H. This plan is in response to an oil release that occurred on December 9th, 2017. A C-141 initial report was submitted to the New Mexico Oil Conservation Division (NMOCD) subsequent to the release.

BACKGROUND

On December 9th, 2017, the dump on the free water knock out failed to open and sent oil to the flare causing a fire and resulting in the release of approximately twelve (12) barrels (bbls) of oil with no recovery due to the fire. The RP number NMOCD assigned to this release was 2RP-4524.

On January 25th, 2018 a site assessment and soil sampling were conducted in order to vertically and horizontally define the area impacted by the release. A site diagram is included in Appendix I. The analytical results from the soil sampling activities are summarized in the table below.

ANALYTICAL RESULTS

Myox 8 State #4H December 9, 2017					
D-17-26S-28E					
Sample ID	Date	Chloride mg/Kg	Benzene mg/Kg	BTEX mg/Kg	TPH mg/Kg
T-1 0'	1/25/2018	52.9	0.0285	173	10,100
T-1 1'	1/25/2018	57.6	0.0122	0.708	<14.9
T-1 2'	1/25/2018	55.6	<0.00199	0.0919	<15.0
T-1 3'	1/25/2018	43.3	<0.0100	0.0807	<15.0
T-1 4'	1/25/2018	34.5	<0.00198	<0.00198	44.8
T-2 0'	1/25/2018	151	<0.00200	0.0154	19.2
T-2 1'	1/25/2018	58.9	<0.0100	<0.0100	<15.0
T-2 2'	1/25/2018	56.5	<0.0100	<0.0100	<15.0

GROUNDWATER AND SITE RANKING

According to the 2005 Chevron Texaco groundwater trend map, groundwater in the project vicinity is approximately twenty-five to fifty (25 to 50) feet below ground surface (BGS) (Appendix II). No water well or surface water was observed within one-thousand (1,000) feet of the release site. Therefore the site ranking for this release is twenty (20) based on the following:

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

PROPOSED REMEDIAL ACTIONS

- The area of T1 will be excavated to a depth of six (6) inches to one (1) foot BGS.
- All of the excavated material will be hauled to an NMOCD approved solid waste disposal facility.
- The excavation will be backfilled with caliche and contoured to match the surrounding location.

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

Sincerely,

A handwritten signature in black ink that reads "Dakota Neel". The signature is written in a cursive, slightly slanted style.

Dakota Neel
HSE Coordinator
Dneel2@concho.com

Enclosed:

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

APPENDIX I

Myox 8 State #4

Myox 8 State #4H

Legend

- T1 6inches
- T2



60 ft

APPENDIX II

25S27E

25S28E

26S27E

26S28E



APPENDIX III

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised April 3, 2017

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: COG Operating LLC	Contact: Robert McNeill	
Address: 600 West Illinois Avenue, Midland TX 79701	Telephone No. 432-230-0077	
Facility Name: MYOX 8 STATE #004H	Facility Type: Battery	
Surface Owner: State	Mineral Owner: State	API No. 30-015-41924

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	17	26S	28E	190'	North	940	West	Eddy

Latitude 32.049139 Longitude -104.114812

NATURE OF RELEASE

Type of Release: Oil	Volume of Release: 12 bbls Oil	Volume Recovered: 0 bbls
Source of Release: Flare	Date and Hour of Occurrence: 12/9/2017 7:30 am	Date and Hour of Discovery: 12/9/2017 7:30 am
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Ms. Weaver NMOCD/ Ms. Groves NMSLO	
By Whom? Rebecca Haskell	Date and Hour: December 9, 2017 12:21 PM	
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.*

This release occurred when the dump on the knock out failed to open due to a loss in pressure. This resulted in oil building up and being sent to the flare.

Describe Area Affected and Cleanup Action Taken.*

This release occurred on location and in the adjacent pasture. Concho will have the spill area evaluated for any possible impact from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation work.

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

		OIL CONSERVATION DIVISION	
Signature:		Approved by Environmental Specialist:	
Printed Name: Dakota Neel			
Title: HSE Coordinator	Approval Date:	Expiration Date:	
E-mail Address: dneel2@concho.com	Conditions of Approval:		Attached ☐
Date: December 14, 2017	Phone: 575-746-2010		

* Attach Additional Sheets If Necessary

APPENDIX IV



Certificate of Analysis Summary 574884

COG Operating LLC, Artesia, NM

Project Name: Myox 8 State #4 H



Project Id:

Contact: Dakota Neel

Project Location: Eddy County, NM

Date Received in Lab: Mon Jan-29-18 03:00 pm

Report Date: 06-FEB-18

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	574884-001	574884-002	574884-003	574884-004	574884-005	574884-006
	Field Id:	T1	T1	T1	T1	T1	T2
	Depth:	0- ft	1- ft	2- ft	3- ft	4- ft	0- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Jan-25-18 09:00	Jan-25-18 09:00	Jan-25-18 09:00	Jan-25-18 09:00	Jan-25-18 09:00	Jan-25-18 09:00
BTEX by EPA 8021B	Extracted:	Jan-31-18 07:15	Jan-31-18 16:30	Jan-31-18 07:15	Jan-31-18 16:30	Feb-01-18 07:00	Feb-01-18 07:00
	Analyzed:	Jan-31-18 17:23	Jan-31-18 22:26	Jan-31-18 16:27	Jan-31-18 22:45	Feb-01-18 13:43	Feb-01-18 14:02
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		0.0285 0.00200	0.0122 0.0100	<0.00199 0.00199	<0.0100 0.0100	<0.00198 0.00198	<0.00200 0.00200
Toluene		22.6 D 0.498	0.170 0.0100	0.0131 0.00199	0.0271 0.0100	<0.00198 0.00198	0.00397 0.00200
Ethylbenzene		19.9 D 0.498	0.0687 0.0100	0.00493 0.00199	0.0111 0.0100	<0.00198 0.00198	<0.00200 0.00200
m,p-Xylenes		96.9 D 0.996	0.301 0.0200	0.0461 0.00398	0.0314 0.0200	<0.00397 0.00397	0.00762 0.00401
o-Xylene		33.4 D 0.498	0.156 0.0100	0.0278 0.00199	0.0111 0.0100	<0.00198 0.00198	0.00382 0.00200
Total Xylenes		130 0.498	0.457 0.0100	0.0739 0.00199	0.0425 0.0100	<0.00198 0.00198	0.0114 0.00200
Total BTEX		173 0.00200	0.708 0.0100	0.0919 0.00199	0.0807 0.0100	<0.00198 0.00198	0.0154 0.00200
Chloride by EPA 300	Extracted:	Feb-01-18 09:00	Feb-01-18 09:00	Feb-01-18 09:00	Feb-01-18 09:00	Feb-01-18 12:00	Feb-01-18 12:00
	Analyzed:	Feb-01-18 12:42	Feb-01-18 12:49	Feb-01-18 12:56	Feb-02-18 11:42	Feb-02-18 14:01	Feb-01-18 13:52
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		52.9 24.6	57.6 49.7	55.6 25.0	43.3 5.00	34.5 4.97	151 4.94
TPH By SW8015 Mod	Extracted:	Jan-30-18 16:00	Jan-30-18 16:00	Jan-30-18 16:00	Jan-30-18 16:00	Jan-30-18 16:00	Jan-30-18 16:00
	Analyzed:	Jan-31-18 09:46	Jan-31-18 07:38	Jan-31-18 07:59	Jan-31-18 08:20	Jan-31-18 08:41	Jan-31-18 09:02
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		2490 74.7	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		6670 74.7	<14.9 14.9	<15.0 15.0	<15.0 15.0	44.8 15.0	19.2 15.0
Oil Range Hydrocarbons (ORO)		917 74.7	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		10100 74.7	<14.9 14.9	<15.0 15.0	<15.0 15.0	44.8 15.0	19.2 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 574884

COG Operating LLC, Artesia, NM

Project Name: Myox 8 State #4 H



Project Id:

Contact: Dakota Neel

Project Location: Eddy County, NM

Date Received in Lab: Mon Jan-29-18 03:00 pm

Report Date: 06-FEB-18

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	574884-007	574884-008				
	Field Id:	T2	T2				
	Depth:	1-	2-				
	Matrix:	SOIL	SOIL				
	Sampled:	Jan-25-18 09:00	Jan-25-18 09:00				
BTEX by EPA 8021B	Extracted:	Jan-31-18 16:30	Jan-31-18 16:30				
	Analyzed:	Jan-31-18 20:33	Jan-31-18 20:52				
	Units/RL:	mg/kg RL	mg/kg RL				
	Benzene	<0.0100 0.0100	<0.0100 0.0100				
	Toluene	<0.0100 0.0100	<0.0100 0.0100				
Ethylbenzene		<0.0100 0.0100	<0.0100 0.0100				
m,p-Xylenes		<0.0200 0.0200	<0.0200 0.0200				
o-Xylene		<0.0100 0.0100	<0.0100 0.0100				
Total Xylenes		<0.0100 0.0100	<0.0100 0.0100				
Total BTEX		<0.0100 0.0100	<0.0100 0.0100				
Chloride by EPA 300	Extracted:	Feb-01-18 12:00	Feb-01-18 12:00				
	Analyzed:	Feb-01-18 14:20	Feb-01-18 14:27				
	Units/RL:	mg/kg RL	mg/kg RL				
	Chloride	58.9 4.96	56.5 4.93				
TPH By SW8015 Mod	Extracted:	Feb-01-18 09:00	Feb-01-18 09:00				
	Analyzed:	Feb-01-18 11:30	Feb-01-18 12:33				
	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 574884

for COG Operating LLC

Project Manager: Dakota Neel

Myox 8 State #4 H

06-FEB-18

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-17-23), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab code: TX01468):

Texas (T104704295-17-15), Arizona (AZ0809), Arkansas (17-063-0)

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

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

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-17-13)

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

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

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



06-FEB-18

Project Manager: **Dakota Neel**

COG Operating LLC

2407 Pecos Avenue

Artesia, NM 88210

Reference: XENCO Report No(s): **574884**

Myox 8 State #4 H

Project Address: Eddy County, NM

Dakota Neel:

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) 574884. 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. 574884 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 574884



COG Operating LLC, Artesia, NM

Myox 8 State #4 H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
T1	S	01-25-18 09:00	0 ft	574884-001
T1	S	01-25-18 09:00	1 ft	574884-002
T1	S	01-25-18 09:00	2 ft	574884-003
T1	S	01-25-18 09:00	3 ft	574884-004
T1	S	01-25-18 09:00	4 ft	574884-005
T2	S	01-25-18 09:00	0 ft	574884-006
T2	S	01-25-18 09:00	1	574884-007
T2	S	01-25-18 09:00	2	574884-008



CASE NARRATIVE

Client Name: COG Operating LLC

Project Name: Myox 8 State #4 H

Project ID:

Work Order Number(s): 574884

Report Date: 06-FEB-18

Date Received: 01/29/2018

Sample receipt non conformance and comments:

Sample receipt non conformance and comments per sample:

None

Analytical non conformance and comments:

Batch: LBA-3039836 BTEX by EPA 8021B

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

Batch: LBA-3039842 BTEX by EPA 8021B

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

Batch: LBA-3039856 BTEX by EPA 8021B

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



Certificate of Analytical Results 574884



COG Operating LLC, Artesia, NM

Myox 8 State #4 H

Sample Id: T1 Matrix: Soil Date Received: 01.29.18 15.00
Lab Sample Id: 574884-001 Date Collected: 01.25.18 09.00 Sample Depth: 0 ft
Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: OJS % Moisture:
Analyst: OJS Date Prep: 02.01.18 09.00 Basis: Wet Weight
Seq Number: 3039878

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	52.9	24.6	mg/kg	02.01.18 12.42		5

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 01.30.18 16.00 Basis: Wet Weight
Seq Number: 3039742

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	2490	74.7	mg/kg	01.31.18 09.46		5
Diesel Range Organics (DRO)	C10C28DRO	6670	74.7	mg/kg	01.31.18 09.46		5
Oil Range Hydrocarbons (ORO)	PHCG2835	917	74.7	mg/kg	01.31.18 09.46		5
Total TPH	PHC635	10100	74.7	mg/kg	01.31.18 09.46		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	01.31.18 09.46	
o-Terphenyl	84-15-1	83	%	70-135	01.31.18 09.46	



Certificate of Analytical Results 574884



COG Operating LLC, Artesia, NM

Myox 8 State #4 H

Sample Id: T1
Lab Sample Id: 574884-001

Matrix: Soil
Date Collected: 01.25.18 09.00

Date Received: 01.29.18 15.00
Sample Depth: 0 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 01.31.18 07.15

Basis: Wet Weight

Seq Number: 3039856

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.0285	0.00200	mg/kg	01.31.18 17.23		1
Toluene	108-88-3	22.6	0.498	mg/kg	02.01.18 15.19	D	250
Ethylbenzene	100-41-4	19.9	0.498	mg/kg	02.01.18 15.19	D	250
m,p-Xylenes	179601-23-1	96.9	0.996	mg/kg	02.01.18 15.19	D	250
o-Xylene	95-47-6	33.4	0.498	mg/kg	02.01.18 15.19	D	250
Total Xylenes	1330-20-7	130	0.498	mg/kg	02.01.18 15.19		250
Total BTEX		173	0.00200	mg/kg	02.01.18 15.19		250
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	81	%	80-120	01.31.18 17.23		
4-Bromofluorobenzene	460-00-4	110	%	80-120	01.31.18 17.23		



Certificate of Analytical Results 574884



COG Operating LLC, Artesia, NM

Myox 8 State #4 H

Sample Id: T1 Matrix: Soil Date Received: 01.29.18 15.00
Lab Sample Id: 574884-002 Date Collected: 01.25.18 09.00 Sample Depth: 1 ft
Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: OJS % Moisture:
Analyst: OJS Date Prep: 02.01.18 09.00 Basis: Wet Weight
Seq Number: 3039878

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	57.6	49.7	mg/kg	02.01.18 12.49		10

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 01.30.18 16.00 Basis: Wet Weight
Seq Number: 3039742

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	01.31.18 07.38	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	01.31.18 07.38	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9	mg/kg	01.31.18 07.38	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	01.31.18 07.38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	01.31.18 07.38	
o-Terphenyl	84-15-1	108	%	70-135	01.31.18 07.38	



Certificate of Analytical Results 574884



COG Operating LLC, Artesia, NM

Myox 8 State #4 H

Sample Id: T1
Lab Sample Id: 574884-002

Matrix: Soil
Date Collected: 01.25.18 09.00

Date Received: 01.29.18 15.00
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 01.31.18 16.30

Basis: Wet Weight

Seq Number: 3039842

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.0122	0.0100	mg/kg	01.31.18 22.26		1
Toluene	108-88-3	0.170	0.0100	mg/kg	01.31.18 22.26		1
Ethylbenzene	100-41-4	0.0687	0.0100	mg/kg	01.31.18 22.26		1
m,p-Xylenes	179601-23-1	0.301	0.0200	mg/kg	01.31.18 22.26		1
o-Xylene	95-47-6	0.156	0.0100	mg/kg	01.31.18 22.26		1
Total Xylenes	1330-20-7	0.457	0.0100	mg/kg	01.31.18 22.26		1
Total BTEX		0.708	0.0100	mg/kg	01.31.18 22.26		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	117	%	80-120	01.31.18 22.26		
1,4-Difluorobenzene	540-36-3	85	%	80-120	01.31.18 22.26		



Certificate of Analytical Results 574884



COG Operating LLC, Artesia, NM

Myox 8 State #4 H

Sample Id: T1 Matrix: Soil Date Received: 01.29.18 15.00
Lab Sample Id: 574884-003 Date Collected: 01.25.18 09.00 Sample Depth: 2 ft
Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: OJS % Moisture:
Analyst: OJS Date Prep: 02.01.18 09.00 Basis: Wet Weight
Seq Number: 3039878

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	55.6	25.0	mg/kg	02.01.18 12.56		5

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 01.30.18 16.00 Basis: Wet Weight
Seq Number: 3039742

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.31.18 07.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.31.18 07.59	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	01.31.18 07.59	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.31.18 07.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	01.31.18 07.59	
o-Terphenyl	84-15-1	97	%	70-135	01.31.18 07.59	



Certificate of Analytical Results 574884



COG Operating LLC, Artesia, NM

Myox 8 State #4 H

Sample Id: T1
Lab Sample Id: 574884-003

Matrix: Soil
Date Collected: 01.25.18 09.00

Date Received: 01.29.18 15.00
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 01.31.18 07.15

Basis: Wet Weight

Seq Number: 3039836

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	01.31.18 16.27	U	1
Toluene	108-88-3	0.0131	0.00199	mg/kg	01.31.18 16.27		1
Ethylbenzene	100-41-4	0.00493	0.00199	mg/kg	01.31.18 16.27		1
m,p-Xylenes	179601-23-1	0.0461	0.00398	mg/kg	01.31.18 16.27		1
o-Xylene	95-47-6	0.0278	0.00199	mg/kg	01.31.18 16.27		1
Total Xylenes	1330-20-7	0.0739	0.00199	mg/kg	01.31.18 16.27		1
Total BTEX		0.0919	0.00199	mg/kg	01.31.18 16.27		1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	82		%	80-120	01.31.18 16.27	
4-Bromofluorobenzene	460-00-4	99		%	80-120	01.31.18 16.27	



Certificate of Analytical Results 574884



COG Operating LLC, Artesia, NM

Myox 8 State #4 H

Sample Id: T1 Matrix: Soil Date Received: 01.29.18 15.00
Lab Sample Id: 574884-004 Date Collected: 01.25.18 09.00 Sample Depth: 3 ft
Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: OJS % Moisture:
Analyst: OJS Date Prep: 02.01.18 09.00 Basis: Wet Weight
Seq Number: 3039878

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	43.3	5.00	mg/kg	02.02.18 11.42		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 01.30.18 16.00 Basis: Wet Weight
Seq Number: 3039742

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.31.18 08.20	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.31.18 08.20	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	01.31.18 08.20	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.31.18 08.20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	01.31.18 08.20	
o-Terphenyl	84-15-1	94	%	70-135	01.31.18 08.20	



Certificate of Analytical Results 574884



COG Operating LLC, Artesia, NM

Myox 8 State #4 H

Sample Id: T1
Lab Sample Id: 574884-004

Matrix: Soil
Date Collected: 01.25.18 09.00

Date Received: 01.29.18 15.00
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 01.31.18 16.30

Basis: Wet Weight

Seq Number: 3039842

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0100	0.0100	mg/kg	01.31.18 22.45	U	1
Toluene	108-88-3	0.0271	0.0100	mg/kg	01.31.18 22.45		1
Ethylbenzene	100-41-4	0.0111	0.0100	mg/kg	01.31.18 22.45		1
m,p-Xylenes	179601-23-1	0.0314	0.0200	mg/kg	01.31.18 22.45		1
o-Xylene	95-47-6	0.0111	0.0100	mg/kg	01.31.18 22.45		1
Total Xylenes	1330-20-7	0.0425	0.0100	mg/kg	01.31.18 22.45		1
Total BTEX		0.0807	0.0100	mg/kg	01.31.18 22.45		1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	84		%	80-120	01.31.18 22.45	
4-Bromofluorobenzene	460-00-4	95		%	80-120	01.31.18 22.45	



Certificate of Analytical Results 574884



COG Operating LLC, Artesia, NM

Myox 8 State #4 H

Sample Id: T1 Matrix: Soil Date Received: 01.29.18 15.00
Lab Sample Id: 574884-005 Date Collected: 01.25.18 09.00 Sample Depth: 4 ft
Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: OJS % Moisture:
Analyst: OJS Date Prep: 02.01.18 12.00 Basis: Wet Weight
Seq Number: 3040180

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	34.5	4.97	mg/kg	02.02.18 14.01		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 01.30.18 16.00 Basis: Wet Weight
Seq Number: 3039742

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.31.18 08.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	44.8	15.0	mg/kg	01.31.18 08.41		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	01.31.18 08.41	U	1
Total TPH	PHC635	44.8	15.0	mg/kg	01.31.18 08.41		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	01.31.18 08.41	
o-Terphenyl	84-15-1	92	%	70-135	01.31.18 08.41	



Certificate of Analytical Results 574884



COG Operating LLC, Artesia, NM

Myox 8 State #4 H

Sample Id: T1
Lab Sample Id: 574884-005

Matrix: Soil
Date Collected: 01.25.18 09.00

Date Received: 01.29.18 15.00
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 02.01.18 07.00

Basis: Wet Weight

Seq Number: 3039856

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	02.01.18 13.43	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	02.01.18 13.43	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	02.01.18 13.43	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	02.01.18 13.43	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	02.01.18 13.43	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	02.01.18 13.43	U	1
Total BTEX		<0.00198	0.00198	mg/kg	02.01.18 13.43	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	82	%	80-120	02.01.18 13.43		
4-Bromofluorobenzene	460-00-4	85	%	80-120	02.01.18 13.43		



Certificate of Analytical Results 574884



COG Operating LLC, Artesia, NM

Myox 8 State #4 H

Sample Id: T2 Matrix: Soil Date Received: 01.29.18 15.00
Lab Sample Id: 574884-006 Date Collected: 01.25.18 09.00 Sample Depth: 0 ft
Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: OJS % Moisture:
Analyst: OJS Date Prep: 02.01.18 12.00 Basis: Wet Weight
Seq Number: 3040180

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	151	4.94	mg/kg	02.01.18 13.52		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 01.30.18 16.00 Basis: Wet Weight
Seq Number: 3039742

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.31.18 09.02	U	1
Diesel Range Organics (DRO)	C10C28DRO	19.2	15.0	mg/kg	01.31.18 09.02		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	01.31.18 09.02	U	1
Total TPH	PHC635	19.2	15.0	mg/kg	01.31.18 09.02		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	01.31.18 09.02	
o-Terphenyl	84-15-1	96	%	70-135	01.31.18 09.02	



Certificate of Analytical Results 574884



COG Operating LLC, Artesia, NM

Myox 8 State #4 H

Sample Id: T2
Lab Sample Id: 574884-006

Matrix: Soil
Date Collected: 01.25.18 09.00

Date Received: 01.29.18 15.00
Sample Depth: 0 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 02.01.18 07.00

Basis: Wet Weight

Seq Number: 3039856

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.01.18 14.02	U	1
Toluene	108-88-3	0.00397	0.00200	mg/kg	02.01.18 14.02		1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.01.18 14.02	U	1
m,p-Xylenes	179601-23-1	0.00762	0.00401	mg/kg	02.01.18 14.02		1
o-Xylene	95-47-6	0.00382	0.00200	mg/kg	02.01.18 14.02		1
Total Xylenes	1330-20-7	0.0114	0.00200	mg/kg	02.01.18 14.02		1
Total BTEX		0.0154	0.00200	mg/kg	02.01.18 14.02		1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	92		%	80-120	02.01.18 14.02	
4-Bromofluorobenzene	460-00-4	100		%	80-120	02.01.18 14.02	



Certificate of Analytical Results 574884



COG Operating LLC, Artesia, NM

Myox 8 State #4 H

Sample Id: T2 Matrix: Soil Date Received: 01.29.18 15.00
Lab Sample Id: 574884-007 Date Collected: 01.25.18 09.00 Sample Depth: 1
Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: OJS % Moisture:
Analyst: OJS Date Prep: 02.01.18 12.00 Basis: Wet Weight
Seq Number: 3040180

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	58.9	4.96	mg/kg	02.01.18 14.20		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 02.01.18 09.00 Basis: Wet Weight
Seq Number: 3040013

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.01.18 11.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.01.18 11.30	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.01.18 11.30	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.01.18 11.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	85	%	70-135	02.01.18 11.30	
o-Terphenyl	84-15-1	88	%	70-135	02.01.18 11.30	



Certificate of Analytical Results 574884



COG Operating LLC, Artesia, NM

Myox 8 State #4 H

Sample Id: T2
Lab Sample Id: 574884-007

Matrix: Soil
Date Collected: 01.25.18 09.00

Date Received: 01.29.18 15.00
Sample Depth: 1

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 01.31.18 16.30

Basis: Wet Weight

Seq Number: 3039842

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0100	0.0100	mg/kg	01.31.18 20.33	U	1
Toluene	108-88-3	<0.0100	0.0100	mg/kg	01.31.18 20.33	U	1
Ethylbenzene	100-41-4	<0.0100	0.0100	mg/kg	01.31.18 20.33	U	1
m,p-Xylenes	179601-23-1	<0.0200	0.0200	mg/kg	01.31.18 20.33	U	1
o-Xylene	95-47-6	<0.0100	0.0100	mg/kg	01.31.18 20.33	U	1
Total Xylenes	1330-20-7	<0.0100	0.0100	mg/kg	01.31.18 20.33	U	1
Total BTEX		<0.0100	0.0100	mg/kg	01.31.18 20.33	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	85	%	80-120	01.31.18 20.33		
4-Bromofluorobenzene	460-00-4	95	%	80-120	01.31.18 20.33		



Certificate of Analytical Results 574884



COG Operating LLC, Artesia, NM

Myox 8 State #4 H

Sample Id: T2 Matrix: Soil Date Received: 01.29.18 15.00
Lab Sample Id: 574884-008 Date Collected: 01.25.18 09.00 Sample Depth: 2
Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: OJS % Moisture:
Analyst: OJS Date Prep: 02.01.18 12.00 Basis: Wet Weight
Seq Number: 3040180

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	56.5	4.93	mg/kg	02.01.18 14.27		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 02.01.18 09.00 Basis: Wet Weight
Seq Number: 3040013

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.01.18 12.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.01.18 12.33	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.01.18 12.33	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.01.18 12.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	02.01.18 12.33	
o-Terphenyl	84-15-1	97	%	70-135	02.01.18 12.33	



Certificate of Analytical Results 574884



COG Operating LLC, Artesia, NM

Myox 8 State #4 H

Sample Id: T2
Lab Sample Id: 574884-008

Matrix: Soil
Date Collected: 01.25.18 09.00

Date Received: 01.29.18 15.00
Sample Depth: 2

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3039842

Date Prep: 01.31.18 16.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0100	0.0100	mg/kg	01.31.18 20.52	U	1
Toluene	108-88-3	<0.0100	0.0100	mg/kg	01.31.18 20.52	U	1
Ethylbenzene	100-41-4	<0.0100	0.0100	mg/kg	01.31.18 20.52	U	1
m,p-Xylenes	179601-23-1	<0.0200	0.0200	mg/kg	01.31.18 20.52	U	1
o-Xylene	95-47-6	<0.0100	0.0100	mg/kg	01.31.18 20.52	U	1
Total Xylenes	1330-20-7	<0.0100	0.0100	mg/kg	01.31.18 20.52	U	1
Total BTEX		<0.0100	0.0100	mg/kg	01.31.18 20.52	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	100	%	80-120	01.31.18 20.52		
1,4-Difluorobenzene	540-36-3	93	%	80-120	01.31.18 20.52		

- 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	



COG Operating LLC

Myox 8 State #4 H

Analytical Method: Chloride by EPA 300

Seq Number: 3039878

MB Sample Id: 7638393-1-BLK

Matrix: Solid

LCS Sample Id: 7638393-1-BKS

Prep Method: E300P

Date Prep: 02.01.18

LCSD Sample Id: 7638393-1-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	274	110	275	110	90-110	0	20	mg/kg	02.01.18 09:41	

Analytical Method: Chloride by EPA 300

Seq Number: 3040180

MB Sample Id: 7638469-1-BLK

Matrix: Solid

LCS Sample Id: 7638469-1-BKS

Prep Method: E300P

Date Prep: 02.01.18

LCSD Sample Id: 7638469-1-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	249	100	254	102	90-110	2	20	mg/kg	02.01.18 13:38	

Analytical Method: Chloride by EPA 300

Seq Number: 3039878

Parent Sample Id: 574882-009

Matrix: Soil

MS Sample Id: 574882-009 S

Prep Method: E300P

Date Prep: 02.01.18

MSD Sample Id: 574882-009 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	38.6	250	301	105	311	109	90-110	3	20	mg/kg	02.01.18 11:39	

Analytical Method: Chloride by EPA 300

Seq Number: 3039878

Parent Sample Id: 575054-001

Matrix: Soil

MS Sample Id: 575054-001 S

Prep Method: E300P

Date Prep: 02.01.18

MSD Sample Id: 575054-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	232	93	239	96	90-110	3	20	mg/kg	02.01.18 10:02	

Analytical Method: Chloride by EPA 300

Seq Number: 3040180

Parent Sample Id: 574884-006

Matrix: Soil

MS Sample Id: 574884-006 S

Prep Method: E300P

Date Prep: 02.01.18

MSD Sample Id: 574884-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	151	247	393	98	386	95	90-110	2	20	mg/kg	02.01.18 13:59	

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

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

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

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



COG Operating LLC

Myox 8 State #4 H

Analytical Method: TPH By SW8015 Mod

Seq Number: 3039742

MB Sample Id: 7638359-1-BLK

Matrix: Solid

LCS Sample Id: 7638359-1-BKS

Prep Method: TX1005P

Date Prep: 01.30.18

LCSD Sample Id: 7638359-1-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	868	87	857	86	70-135	1	35	mg/kg	01.31.18 00:08	
Diesel Range Organics (DRO)	<15.0	1000	933	93	916	92	70-135	2	35	mg/kg	01.31.18 00:08	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane	107		110		108		70-135	%	01.31.18 00:08			
o-Terphenyl	111		100		99		70-135	%	01.31.18 00:08			

Analytical Method: TPH By SW8015 Mod

Seq Number: 3040013

MB Sample Id: 7638497-1-BLK

Matrix: Solid

LCS Sample Id: 7638497-1-BKS

Prep Method: TX1005P

Date Prep: 02.01.18

LCSD Sample Id: 7638497-1-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	858	86	841	84	70-135	2	35	mg/kg	02.01.18 10:47	
Diesel Range Organics (DRO)	<15.0	1000	925	93	925	93	70-135	0	35	mg/kg	02.01.18 10:47	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane	88		115		114		70-135	%	02.01.18 10:47			
o-Terphenyl	93		118		100		70-135	%	02.01.18 10:47			

Analytical Method: TPH By SW8015 Mod

Seq Number: 3039742

Parent Sample Id: 574882-002

Matrix: Soil

MS Sample Id: 574882-002 S

Prep Method: TX1005P

Date Prep: 01.30.18

MSD Sample Id: 574882-002 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	997	887	89	919	92	70-135	4	35	mg/kg	01.31.18 01:34	
Diesel Range Organics (DRO)	62.6	997	896	84	1020	96	70-135	13	35	mg/kg	01.31.18 01:34	
Surrogate			MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane			106		116		70-135	%	01.31.18 01:34			
o-Terphenyl			90		103		70-135	%	01.31.18 01:34			

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

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

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

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



QC Summary 574884

COG Operating LLC

Myox 8 State #4 H

Analytical Method: TPH By SW8015 Mod

Seq Number: 3040013

Parent Sample Id: 574884-007

Matrix: Soil

MS Sample Id: 574884-007 S

Prep Method: TX1005P

Date Prep: 02.01.18

MSD Sample Id: 574884-007 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	799	80	886	89	70-135	10	35	mg/kg	02.01.18 11:51	
Diesel Range Organics (DRO)	<15.0	997	884	89	970	97	70-135	9	35	mg/kg	02.01.18 11:51	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	105		103		70-135	%	02.01.18 11:51
o-Terphenyl	93		102		70-135	%	02.01.18 11:51

Analytical Method: BTEX by EPA 8021B

Seq Number: 3039836

MB Sample Id: 7638380-1-BLK

Matrix: Solid

LCS Sample Id: 7638380-1-BKS

Prep Method: SW5030B

Date Prep: 01.31.18

LCSD Sample Id: 7638380-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.0900	90	0.0861	85	70-130	4	35	mg/kg	01.31.18 07:38	
Toluene	<0.00201	0.100	0.0946	95	0.0905	90	70-130	4	35	mg/kg	01.31.18 07:38	
Ethylbenzene	<0.00201	0.100	0.104	104	0.0978	97	71-129	6	35	mg/kg	01.31.18 07:38	
m,p-Xylenes	<0.00402	0.201	0.204	101	0.193	96	70-135	6	35	mg/kg	01.31.18 07:38	
o-Xylene	<0.00201	0.100	0.0997	100	0.0953	94	71-133	5	35	mg/kg	01.31.18 07:38	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	86		86		86		80-120	%	01.31.18 07:38
4-Bromofluorobenzene	87		96		96		80-120	%	01.31.18 07:38

Analytical Method: BTEX by EPA 8021B

Seq Number: 3039842

MB Sample Id: 7638381-1-BLK

Matrix: Solid

LCS Sample Id: 7638381-1-BKS

Prep Method: SW5030B

Date Prep: 01.31.18

LCSD Sample Id: 7638381-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.0100	0.500	0.444	89	0.453	91	70-130	2	35	mg/kg	01.31.18 18:20	
Toluene	<0.0100	0.500	0.490	98	0.494	99	70-130	1	35	mg/kg	01.31.18 18:20	
Ethylbenzene	<0.0100	0.500	0.512	102	0.533	107	71-129	4	35	mg/kg	01.31.18 18:20	
m,p-Xylenes	<0.0200	1.00	1.01	101	0.996	100	70-135	1	35	mg/kg	01.31.18 18:20	
o-Xylene	<0.0100	0.500	0.505	101	0.516	103	71-133	2	35	mg/kg	01.31.18 18:20	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	84		89		84		80-120	%	01.31.18 18:20
4-Bromofluorobenzene	92		101		92		80-120	%	01.31.18 18:20

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

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

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

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



COG Operating LLC

Myox 8 State #4 H

Analytical Method: BTEX by EPA 8021B

Seq Number: 3039856

MB Sample Id: 7638412-1-BLK

Matrix: Solid

LCS Sample Id: 7638412-1-BKS

Prep Method: SW5030B

Date Prep: 02.01.18

LCSD Sample Id: 7638412-1-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	0.100	0.0856	86	0.0860	86	70-130	0	35	mg/kg	02.01.18 04:27	
Toluene	<0.00200	0.100	0.0890	89	0.0901	90	70-130	1	35	mg/kg	02.01.18 04:27	
Ethylbenzene	<0.00200	0.100	0.0947	95	0.0950	95	71-129	0	35	mg/kg	02.01.18 04:27	
m,p-Xylenes	<0.00401	0.200	0.186	93	0.187	94	70-135	1	35	mg/kg	02.01.18 04:27	
o-Xylene	<0.00200	0.100	0.0933	93	0.0935	94	71-133	0	35	mg/kg	02.01.18 04:27	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	84		89		89		80-120	%	02.01.18 04:27
4-Bromofluorobenzene	83		95		98		80-120	%	02.01.18 04:27

Analytical Method: BTEX by EPA 8021B

Seq Number: 3039836

Parent Sample Id: 574882-001

Matrix: Soil

MS Sample Id: 574882-001 S

Prep Method: SW5030B

Date Prep: 01.31.18

MSD Sample Id: 574882-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0796	79	0.0789	79	70-130	1	35	mg/kg	01.31.18 08:16	
Toluene	0.00573	0.101	0.0829	76	0.0817	76	70-130	1	35	mg/kg	01.31.18 08:16	
Ethylbenzene	<0.00202	0.101	0.0808	80	0.0846	85	71-129	5	35	mg/kg	01.31.18 08:16	
m,p-Xylenes	<0.00403	0.202	0.159	79	0.167	84	70-135	5	35	mg/kg	01.31.18 08:16	
o-Xylene	<0.00202	0.101	0.0796	79	0.0824	82	71-133	3	35	mg/kg	01.31.18 08:16	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	81		86		80-120	%	01.31.18 08:16
4-Bromofluorobenzene	88		94		80-120	%	01.31.18 08:16

Analytical Method: BTEX by EPA 8021B

Seq Number: 3039842

Parent Sample Id: 575068-002

Matrix: Soil

MS Sample Id: 575068-002 S

Prep Method: SW5030B

Date Prep: 01.31.18

MSD Sample Id: 575068-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.0100	0.500	0.295	59	0.299	60	70-130	1	35	mg/kg	01.31.18 18:58	X
Toluene	<0.0100	0.500	0.243	49	0.246	49	70-130	1	35	mg/kg	01.31.18 18:58	X
Ethylbenzene	0.0209	0.500	0.216	39	0.212	38	71-129	2	35	mg/kg	01.31.18 18:58	X
m,p-Xylenes	0.0319	1.00	0.389	36	0.383	35	70-135	2	35	mg/kg	01.31.18 18:58	X
o-Xylene	<0.0100	0.500	0.200	40	0.203	41	71-133	1	35	mg/kg	01.31.18 18:58	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	86		90		80-120	%	01.31.18 18:58
4-Bromofluorobenzene	102		97		80-120	%	01.31.18 18:58

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

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

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

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



COG Operating LLC

Myox 8 State #4 H

Analytical Method: BTEX by EPA 8021B

Seq Number: 3039856

Parent Sample Id: 574885-007

Matrix: Soil

MS Sample Id: 574885-007 S

Prep Method: SW5030B

Date Prep: 02.01.18

MSD Sample Id: 574885-007 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	0.100	0.0739	74	0.0754	75	70-130	2	35	mg/kg	02.01.18 05:05	
Toluene	<0.00201	0.100	0.0770	77	0.0781	77	70-130	1	35	mg/kg	02.01.18 05:05	
Ethylbenzene	<0.00201	0.100	0.0785	79	0.0799	79	71-129	2	35	mg/kg	02.01.18 05:05	
m,p-Xylenes	<0.00402	0.201	0.153	76	0.156	77	70-135	2	35	mg/kg	02.01.18 05:05	
o-Xylene	<0.00201	0.100	0.0777	78	0.0783	78	71-133	1	35	mg/kg	02.01.18 05:05	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	92		89		80-120	%	02.01.18 05:05
4-Bromofluorobenzene	108		93		80-120	%	02.01.18 05:05

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

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

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

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

Page 1 Of 1

Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

Xenco Job #

574884

Final 1.000



XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In



Client: COG Operating LLC

Date/ Time Received: 01/29/2018 03:00:00 PM

Work Order #: 574884

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)?	2.7
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Shawnee Smith

Date: 01/30/2018

Checklist reviewed by:

Kelsey Brooks

Date: 01/30/2018