



Certificate of Analysis Summary 577421

COG Operating LLC, Artesia, NM

Project Name: GJ West Loop Unit 210



Project Id:

Contact: Sheldon Hitchcock

Project Location:

Date Received in Lab: Mon Feb-26-18 07:45 am

Report Date: 27-FEB-18

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	577421-001				
	Field Id:	S4-Bottom Hole				
	Depth:	2.5- ft				
	Matrix:	SOIL				
	Sampled:	Feb-23-18 11:00				
BTEX by EPA 8021B	Extracted:	Feb-26-18 10:00				
	Analyzed:	Feb-26-18 14:04				
	Units/RL:	mg/kg RL				
	Benzene	<0.00199 0.00199				
	Toluene	<0.00199 0.00199				
	Ethylbenzene	<0.00199 0.00199				
	m,p-Xylenes	0.00414 0.00398				
	o-Xylene	<0.00199 0.00199				
Total Xylenes	0.00414 0.00199					
Total BTEX	0.00414 0.00199					
Chloride by EPA 300	Extracted:	Feb-26-18 14:00				
	Analyzed:	Feb-26-18 21:36				
	Units/RL:	mg/kg RL				
Chloride	153 4.90					
TPH By SW8015 Mod	Extracted:	Feb-26-18 08:00				
	Analyzed:	Feb-26-18 10:34				
	Units/RL:	mg/kg RL				
	Gasoline Range Hydrocarbons (GRO)	<15.0 15.0				
	Diesel Range Organics (DRO)	<15.0 15.0				
Oil Range Hydrocarbons (ORO)	<15.0 15.0					
Total TPH	<15.0 15.0					

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Version: 1.0%

Jessica Kramer
Project Assistant

Analytical Report 577421

for
COG Operating LLC

Project Manager: Sheldon Hitchcock

GJ West Loop Unit 210

27-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)



27-FEB-18

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

Reference: XENCO Report No(s): **577421**
GJ West Loop Unit 210
Project Address:

Sheldon Hitchcock:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 577421. 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. 577421 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer
Project Assistant

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Sample Cross Reference 577421



COG Operating LLC, Artesia, NM

GJ West Loop Unit 210

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
S4-Bottom Hole	S	02-23-18 11:00	2.5 ft	577421-001



CASE NARRATIVE

Client Name: COG Operating LLC

Project Name: GJ West Loop Unit 210

Project ID:
Work Order Number(s): 577421

Report Date: 27-FEB-18
Date Received: 02/26/2018

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3042157 BTEX by EPA 8021B

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

Lab Sample ID 577421-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Benzene, Toluene recovered below QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 577421-001.

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

COG Operating LLC, Artesia, NM GJ West Loop Unit 210

Sample Id: S4-Bottom Hole	Matrix: Soil	Date Received: 02.26.18 07.45
Lab Sample Id: 577421-001	Date Collected: 02.23.18 11.00	Sample Depth: 2.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: OJS		% Moisture:
Analyst: OJS	Date Prep: 02.26.18 14.00	Basis: Wet Weight
Seq Number: 3042243		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	153	4.90	mg/kg	02.26.18 21.36		1

Analytical Method: TPH By SW8015 Mod	Prep Method: TX1005P
Tech: ARM	% Moisture:
Analyst: ARM	Date Prep: 02.26.18 08.00
Seq Number: 3042219	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.26.18 10.34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.26.18 10.34	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.26.18 10.34	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.26.18 10.34	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
	1-Chlorooctane	111-85-3	94	%	70-135	02.26.18 10.34	
	o-Terphenyl	84-15-1	96	%	70-135	02.26.18 10.34	

COG Operating LLC, Artesia, NM

GJ West Loop Unit 210

Sample Id: **S4-Bottom Hole**

Matrix: Soil

Date Received: 02.26.18 07.45

Lab Sample Id: 577421-001

Date Collected: 02.23.18 11.00

Sample Depth: 2.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 02.26.18 10.00

Basis: Wet Weight

Seq Number: 3042157

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.26.18 14.04	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.26.18 14.04	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.26.18 14.04	U	1
m,p-Xylenes	179601-23-1	0.00414	0.00398	mg/kg	02.26.18 14.04		1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.26.18 14.04	U	1
Total Xylenes	1330-20-7	0.00414	0.00199	mg/kg	02.26.18 14.04		1
Total BTEX		0.00414	0.00199	mg/kg	02.26.18 14.04		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	111	%	80-120	02.26.18 14.04		
1,4-Difluorobenzene	540-36-3	81	%	80-120	02.26.18 14.04		

- 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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COG Operating LLC
GJ West Loop Unit 210

Analytical Method: Chloride by EPA 300

Seq Number: 3042243

MB Sample Id: 7639810-1-BLK

Matrix: Solid

LCS Sample Id: 7639810-1-BKS

Prep Method: E300P

Date Prep: 02.26.18

LCSD Sample Id: 7639810-1-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	262	105	262	105	90-110	0	20	mg/kg	02.26.18 19:35	

Analytical Method: Chloride by EPA 300

Seq Number: 3042243

Parent Sample Id: 577014-031

Matrix: Soil

MS Sample Id: 577014-031 S

Prep Method: E300P

Date Prep: 02.26.18

MSD Sample Id: 577014-031 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	596	250	835	96	859	105	90-110	3	20	mg/kg	02.26.18 19:51	

Analytical Method: Chloride by EPA 300

Seq Number: 3042243

Parent Sample Id: 577094-006

Matrix: Soil

MS Sample Id: 577094-006 S

Prep Method: E300P

Date Prep: 02.26.18

MSD Sample Id: 577094-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.05	253	268	106	282	111	90-110	5	20	mg/kg	02.26.18 21:05	X

Analytical Method: TPH By SW8015 Mod

Seq Number: 3042219

MB Sample Id: 7639805-1-BLK

Matrix: Solid

LCS Sample Id: 7639805-1-BKS

Prep Method: TX1005P

Date Prep: 02.26.18

LCSD Sample Id: 7639805-1-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	887	89	1020	102	70-135	14	35	mg/kg	02.26.18 09:41	
Diesel Range Organics (DRO)	<15.0	1000	915	92	1040	104	70-135	13	35	mg/kg	02.26.18 09:41	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	109		109		124		70-135	%	02.26.18 09:41
o-Terphenyl	112		107		121		70-135	%	02.26.18 09:41

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

GJ West Loop Unit 210

Analytical Method: TPH By SW8015 Mod

Seq Number: 3042219

Parent Sample Id: 577421-001

Matrix: Soil

MS Sample Id: 577421-001 S

Prep Method: TX1005P

Date Prep: 02.26.18

MSD Sample Id: 577421-001 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	999	971	97	907	91	70-135	7	35	mg/kg	02.26.18 11:02	
Diesel Range Organics (DRO)	<15.0	999	1070	107	1000	100	70-135	7	35	mg/kg	02.26.18 11:02	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	115		107		70-135	%	02.26.18 11:02
o-Terphenyl	113		107		70-135	%	02.26.18 11:02

Analytical Method: BTEX by EPA 8021B

Seq Number: 3042157

MB Sample Id: 7639793-1-BLK

Matrix: Solid

LCS Sample Id: 7639793-1-BKS

Prep Method: SW5030B

Date Prep: 02.26.18

LCSD Sample Id: 7639793-1-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	0.0931	93	0.0925	93	70-130	1	35	mg/kg	02.26.18 09:57	
Toluene	<0.00199	0.0996	0.0994	100	0.0979	98	70-130	2	35	mg/kg	02.26.18 09:57	
Ethylbenzene	<0.00199	0.0996	0.115	115	0.113	113	71-129	2	35	mg/kg	02.26.18 09:57	
m,p-Xylenes	<0.00398	0.199	0.230	116	0.226	113	70-135	2	35	mg/kg	02.26.18 09:57	
o-Xylene	<0.00199	0.0996	0.112	112	0.110	110	71-133	2	35	mg/kg	02.26.18 09:57	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	82		81		84		80-120	%	02.26.18 09:57
4-Bromofluorobenzene	110		120		116		80-120	%	02.26.18 09:57

Analytical Method: BTEX by EPA 8021B

Seq Number: 3042157

Parent Sample Id: 577421-001

Matrix: Soil

MS Sample Id: 577421-001 S

Prep Method: SW5030B

Date Prep: 02.26.18

MSD Sample Id: 577421-001 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	0.100	0.0638	64	0.0720	72	70-130	12	35	mg/kg	02.26.18 10:36	X
Toluene	<0.00200	0.100	0.0679	68	0.0750	75	70-130	10	35	mg/kg	02.26.18 10:36	X
Ethylbenzene	<0.00200	0.100	0.0787	79	0.0845	85	71-129	7	35	mg/kg	02.26.18 10:36	
m,p-Xylenes	0.00414	0.200	0.155	75	0.170	83	70-135	9	35	mg/kg	02.26.18 10:36	
o-Xylene	<0.00200	0.100	0.0745	75	0.0856	86	71-133	14	35	mg/kg	02.26.18 10:36	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	80		82		80-120	%	02.26.18 10:36
4-Bromofluorobenzene	103		117		80-120	%	02.26.18 10:36

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



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: COG Operating LLC

Date/ Time Received: 02/26/2018 07:45:00 AM

Work Order #: 577421

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1.4
#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)?	N/A
#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: 
Katie Lowe

Date: 02/26/2018

Checklist reviewed by: 
Jessica Kramer

Date: 02/26/2018