

# **Analytical Report 578037**

**for  
COG Operating LLC**

**Project Manager: Sheldon Hitchcock**

**GJ West COOP Unit#210**

**05-MAR-18**

Collected By: Client



**1211 W. Florida Ave, Midland TX 79701**

Xenco-Houston (EPA Lab code: TX00122):

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

Xenco-Dallas (EPA Lab code: TX01468):

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

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

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

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

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

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

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

Xenco-Atlanta (LELAP Lab ID #04176)



05-MAR-18

Project Manager: **Sheldon Hitchcock**

**COG Operating LLC**

2407 Pecos Avenue

Artesia, NM 88210

Reference: XENCO Report No(s): **578037**

**GJ West COOP Unit#210**

Project Address: Eddy County, NM

**Sheldon Hitchcock:**

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 578037. 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. 578037 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,

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**Jessica Kramer**

Project Assistant

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## Sample Cross Reference 578037



**COG Operating LLC, Artesia, NM**

GJ West COOP Unit#210

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
S-3 BTM	S	02-28-18 11:00	4' - 2"	578037-001
S-3 E. Sidewall	S	02-28-18 11:10		578037-002
S-3 W. Sidewall	S	02-28-18 11:20		578037-003



## CASE NARRATIVE

*Client Name: COG Operating LLC*

*Project Name: GJ West COOP Unit#210*

Project ID:

Work Order Number(s): 578037

Report Date: 05-MAR-18

Date Received: 03/02/2018

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**Sample receipt non conformances and comments:**

None

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**Sample receipt non conformances and comments per sample:**

None

**Analytical non conformances and comments:**

Batch: LBA-3042714 BTEX by EPA 8021B

Lab Sample ID 578037-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Ethylbenzene, m,p-Xylenes recovered below QC limits in the Matrix Spike. Benzene, Toluene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 578037-001, -002, -003.

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

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



# Certificate of Analysis Summary 578037

COG Operating LLC, Artesia, NM

Project Name: GJ West COOP Unit#210



Project Id:

Contact: Sheldon Hitchcock

Project Location: Eddy County, NM

Date Received in Lab: Fri Mar-02-18 11:50 am

Report Date: 05-MAR-18

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	578037-001	578037-002	578037-003			
	<i>Field Id:</i>	S-3 BTM	S-3 E. Sidewall	S-3 W. Sidewall			
	<i>Depth:</i>	4'-2"					
	<i>Matrix:</i>	SOIL	SOIL	SOIL			
	<i>Sampled:</i>	Feb-28-18 11:00	Feb-28-18 11:10	Feb-28-18 11:20			
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Mar-03-18 08:00	Mar-03-18 08:00	Mar-03-18 08:00			
	<i>Analyzed:</i>	Mar-03-18 11:15	Mar-03-18 16:39	Mar-03-18 16:58			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199			
Toluene		0.0122 0.00200	<0.00199 0.00199	<0.00199 0.00199			
Ethylbenzene		0.00447 0.00200	<0.00199 0.00199	<0.00199 0.00199			
m,p-Xylenes		0.00812 0.00401	<0.00398 0.00398	<0.00398 0.00398			
o-Xylene		0.00412 0.00200	<0.00199 0.00199	<0.00199 0.00199			
Total Xylenes		0.0122 0.00200	<0.00199 0.00199	<0.00199 0.00199			
Total BTEX		0.0289 0.00200	<0.00199 0.00199	<0.00199 0.00199			
<b>Chloride by EPA 300</b>	<i>Extracted:</i>	Mar-02-18 16:00	Mar-02-18 16:00	Mar-02-18 16:00			
	<i>Analyzed:</i>	Mar-03-18 01:13	Mar-03-18 01:19	Mar-03-18 01:24			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		13.7 4.99	22.8 5.00	47.0 4.98			
<b>TPH by SW8015 Mod</b>	<i>Extracted:</i>	Mar-02-18 18:00	Mar-02-18 18:00	Mar-02-18 18:00			
	<i>Analyzed:</i>	Mar-03-18 08:00	Mar-03-18 08:19	Mar-03-18 08:41			
	<i>Units/RL:</i>	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			
Diesel Range Organics (DRO)		<14.9 14.9	<15.0 15.0	<15.0 15.0			
Oil Range Hydrocarbons (ORO)		<14.9 14.9	<15.0 15.0	<15.0 15.0			
Total TPH		<14.9 14.9	<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.

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*Jessica Kramer*

Jessica Kramer  
Project Assistant

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

\*\* Surrogate recovered outside laboratory control limit.

**BRL** Below Reporting Limit.

**RL** Reporting Limit

**MDL** Method Detection Limit      **SDL** Sample Detection Limit      **LOD** Limit of Detection

**PQL** Practical Quantitation Limit      **MQL** Method Quantitation Limit      **LOQ** Limit of Quantitation

**DL** Method Detection Limit

**NC** Non-Calculable

+ NELAC certification not offered for this compound.

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

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

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



# Form 2 - Surrogate Recoveries

Project Name: GJ West COOP Unit#210

Work Orders : 578037,

Lab Batch #: 3042782

Sample: 578037-001 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 03/03/18 08:00

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.9	99.6	99	70-135	
o-Terphenyl	50.4	49.8	101	70-135	

Lab Batch #: 3042782

Sample: 578037-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 03/03/18 08:19

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	105	99.8	105	70-135	
o-Terphenyl	52.2	49.9	105	70-135	

Lab Batch #: 3042782

Sample: 578037-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 03/03/18 08:41

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.4	99.9	96	70-135	
o-Terphenyl	48.3	50.0	97	70-135	

Lab Batch #: 3042714

Sample: 578037-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 03/03/18 11:15

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0247	0.0300	82	70-130	
4-Bromofluorobenzene	0.0322	0.0300	107	70-130	

Lab Batch #: 3042714

Sample: 578037-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 03/03/18 16:39

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0245	0.0300	82	70-130	
4-Bromofluorobenzene	0.0317	0.0300	106	70-130	

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] =  $100 * A / B$

All results are based on MDL and validated for QC purposes.



# Form 2 - Surrogate Recoveries

Project Name: GJ West COOP Unit#210

Work Orders : 578037,

Lab Batch #: 3042714

Sample: 578037-003 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 03/03/18 16:58

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0237	0.0300	79	70-130	
4-Bromofluorobenzene	0.0304	0.0300	101	70-130	

Lab Batch #: 3042782

Sample: 7640130-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 03/03/18 04:17

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.0	100	92	70-135	
o-Terphenyl	48.2	50.0	96	70-135	

Lab Batch #: 3042714

Sample: 7640101-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 03/03/18 10:56

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0243	0.0300	81	70-130	
4-Bromofluorobenzene	0.0318	0.0300	106	70-130	

Lab Batch #: 3042782

Sample: 7640130-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 03/03/18 04:37

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	100	104	70-135	
o-Terphenyl	50.9	50.0	102	70-135	

Lab Batch #: 3042714

Sample: 7640101-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 03/03/18 09:00

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0263	0.0300	88	70-130	
4-Bromofluorobenzene	0.0344	0.0300	115	70-130	

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] =  $100 * A / B$

All results are based on MDL and validated for QC purposes.





# Form 2 - Surrogate Recoveries

Project Name: GJ West COOP Unit#210

Work Orders : 578037,

Lab Batch #: 3042782

Sample: 7640130-1-BSD / BSD

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 03/03/18 04:56

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	110	100	110	70-135	
o-Terphenyl	54.6	50.0	109	70-135	

Lab Batch #: 3042714

Sample: 7640101-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 03/03/18 09:19

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0274	0.0300	91	70-130	
4-Bromofluorobenzene	0.0364	0.0300	121	70-130	

Lab Batch #: 3042782

Sample: 578034-003 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 03/03/18 06:18

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	99.7	101	70-135	
o-Terphenyl	48.6	49.9	97	70-135	

Lab Batch #: 3042714

Sample: 578037-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 03/03/18 09:39

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0253	0.0300	84	70-130	
4-Bromofluorobenzene	0.0348	0.0300	116	70-130	

Lab Batch #: 3042782

Sample: 578034-003 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 03/03/18 06:38

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	99.9	107	70-135	
o-Terphenyl	52.9	50.0	106	70-135	

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] =  $100 * A / B$

All results are based on MDL and validated for QC purposes.



# Form 2 - Surrogate Recoveries

Project Name: GJ West COOP Unit#210

Work Orders : 578037,

Lab Batch #: 3042714

Sample: 578037-001 SD / MSD

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 03/03/18 09:58

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0261	0.0300	87	70-130	
4-Bromofluorobenzene	0.0344	0.0300	115	70-130	

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] =  $100 * A / B$

All results are based on MDL and validated for QC purposes.



# BS / BSD Recoveries



Project Name: GJ West COOP Unit#210

Work Order #: 578037

Project ID:

Analyst: ALJ

Date Prepared: 03/03/2018

Date Analyzed: 03/03/2018

Lab Batch ID: 3042714

Sample: 7640101-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

<b>BTEX by EPA 8021B</b>	<b>Blank Sample Result [A]</b>	<b>Spike Added [B]</b>	<b>Blank Spike Result [C]</b>	<b>Blank Spike %R [D]</b>	<b>Spike Added [E]</b>	<b>Blank Spike Duplicate Result [F]</b>	<b>Blk. Spk Dup. %R [G]</b>	<b>RPD %</b>	<b>Control Limits %R</b>	<b>Control Limits %RPD</b>	<b>Flag</b>
<b>Analytes</b>											
Benzene	<0.00199	0.0996	0.0877	88	0.100	0.0869	87	1	70-130	35	
Toluene	<0.00199	0.0996	0.0933	94	0.100	0.0926	93	1	70-130	35	
Ethylbenzene	<0.00199	0.0996	0.110	110	0.100	0.107	107	3	70-130	35	
m,p-Xylenes	<0.00398	0.199	0.217	109	0.200	0.211	106	3	70-130	35	
o-Xylene	<0.00199	0.0996	0.107	107	0.100	0.103	103	4	70-130	35	

Analyst: OJS

Date Prepared: 03/02/2018

Date Analyzed: 03/02/2018

Lab Batch ID: 3042830

Sample: 7640137-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

<b>Chloride by EPA 300</b>	<b>Blank Sample Result [A]</b>	<b>Spike Added [B]</b>	<b>Blank Spike Result [C]</b>	<b>Blank Spike %R [D]</b>	<b>Spike Added [E]</b>	<b>Blank Spike Duplicate Result [F]</b>	<b>Blk. Spk Dup. %R [G]</b>	<b>RPD %</b>	<b>Control Limits %R</b>	<b>Control Limits %RPD</b>	<b>Flag</b>
<b>Analytes</b>											
Chloride	<5.00	250	235	94	250	228	91	3	90-110	20	

Relative Percent Difference RPD =  $200 * |(C-F)/(C+F)|$

Blank Spike Recovery [D] =  $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] =  $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



## BS / BSD Recoveries



**Project Name: GJ West COOP Unit#210**

**Work Order #: 578037**

**Project ID:**

**Analyst: ARM**

**Date Prepared: 03/02/2018**

**Date Analyzed: 03/03/2018**

**Lab Batch ID: 3042782**

**Sample: 7640130-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

<b>TPH by SW8015 Mod</b>	<b>Blank Sample Result [A]</b>	<b>Spike Added [B]</b>	<b>Blank Spike Result [C]</b>	<b>Blank Spike %R [D]</b>	<b>Spike Added [E]</b>	<b>Blank Spike Duplicate Result [F]</b>	<b>Blk. Spk Dup. %R [G]</b>	<b>RPD %</b>	<b>Control Limits %R</b>	<b>Control Limits %RPD</b>	<b>Flag</b>
<b>Analytes</b>											
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	1030	103	1000	1150	115	11	70-135	35	
Diesel Range Organics (DRO)	<15.0	1000	852	85	1000	932	93	9	70-135	35	

Relative Percent Difference RPD =  $200 * |(C-F)/(C+F)|$

Blank Spike Recovery [D] =  $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] =  $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes

**Project Name: GJ West COOP Unit#210**

**Work Order # :** 578037

**Project ID:**

**Lab Batch ID:** 3042714

**QC- Sample ID:** 578037-001 S

**Batch #:** 1 **Matrix:** Soil

**Date Analyzed:** 03/03/2018

**Date Prepared:** 03/03/2018

**Analyst:** ALJ

**Reporting Units:** mg/kg

**MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY**

<b>BTEX by EPA 8021B</b>	<b>Parent Sample Result [A]</b>	<b>Spike Added [B]</b>	<b>Spiked Sample Result [C]</b>	<b>Spiked Sample %R [D]</b>	<b>Spike Added [E]</b>	<b>Duplicate Spiked Sample Result [F]</b>	<b>Spiked Dup. %R [G]</b>	<b>RPD %</b>	<b>Control Limits %R</b>	<b>Control Limits %RPD</b>	<b>Flag</b>
<b>Analytes</b>											
Benzene	<0.00199	0.0994	0.0599	60	0.0998	0.0667	67	11	70-130	35	X
Toluene	0.0122	0.0994	0.0689	57	0.0998	0.0794	67	14	70-130	35	X
Ethylbenzene	0.00447	0.0994	0.0717	68	0.0998	0.0787	74	9	70-130	35	X
m,p-Xylenes	0.00812	0.199	0.142	67	0.200	0.153	72	7	70-130	35	X
o-Xylene	0.00412	0.0994	0.0736	70	0.0998	0.0772	73	5	70-130	35	

**Lab Batch ID:** 3042830

**QC- Sample ID:** 578034-001 S

**Batch #:** 1 **Matrix:** Soil

**Date Analyzed:** 03/02/2018

**Date Prepared:** 03/02/2018

**Analyst:** OJS

**Reporting Units:** mg/kg

**MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY**

<b>Chloride by EPA 300</b>	<b>Parent Sample Result [A]</b>	<b>Spike Added [B]</b>	<b>Spiked Sample Result [C]</b>	<b>Spiked Sample %R [D]</b>	<b>Spike Added [E]</b>	<b>Duplicate Spiked Sample Result [F]</b>	<b>Spiked Dup. %R [G]</b>	<b>RPD %</b>	<b>Control Limits %R</b>	<b>Control Limits %RPD</b>	<b>Flag</b>
<b>Analytes</b>											
Chloride	588	250	790	81	250	807	88	2	90-110	20	X

**Lab Batch ID:** 3042830

**QC- Sample ID:** 578036-002 S

**Batch #:** 1 **Matrix:** Soil

**Date Analyzed:** 03/03/2018

**Date Prepared:** 03/02/2018

**Analyst:** OJS

**Reporting Units:** mg/kg

**MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY**

<b>Chloride by EPA 300</b>	<b>Parent Sample Result [A]</b>	<b>Spike Added [B]</b>	<b>Spiked Sample Result [C]</b>	<b>Spiked Sample %R [D]</b>	<b>Spike Added [E]</b>	<b>Duplicate Spiked Sample Result [F]</b>	<b>Spiked Dup. %R [G]</b>	<b>RPD %</b>	<b>Control Limits %R</b>	<b>Control Limits %RPD</b>	<b>Flag</b>
<b>Analytes</b>											
Chloride	<4.95	248	237	96	248	233	94	2	90-110	20	

Matrix Spike Percent Recovery  $[D] = 100 \times (C-A)/B$   
Relative Percent Difference  $RPD = 200 \times |(C-F)/(C+F)|$

Matrix Spike Duplicate Percent Recovery  $[G] = 100 \times (F-A)/E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



# Form 3 - MS / MSD Recoveries



Project Name: GJ West COOP Unit#210

Work Order # : 578037

Project ID:

Lab Batch ID: 3042782

QC- Sample ID: 578034-003 S

Batch #: 1 Matrix: Soil

Date Analyzed: 03/03/2018

Date Prepared: 03/02/2018

Analyst: ARM

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	997	1020	102	999	1090	109	7	70-135	35	
Diesel Range Organics (DRO)	<15.0	997	825	83	999	880	88	6	70-135	35	

Matrix Spike Percent Recovery  $[D] = 100 * (C - A) / B$   
Relative Percent Difference  $RPD = 200 * |(C - F) / (C + F)|$

Matrix Spike Duplicate Percent Recovery  $[G] = 100 * (F - A) / E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable  
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

# CHAIN OF CUSTODY

Page 1 Of 1

San Antonio, Texas (210-509-3334)

Midland, Texas (432-704-5251)

[www.xenco.com](http://www.xenco.com)

Phoenix, Arizona (480-355-0900)

Xenco Quote #

Xenco Job #

7007

Client / Reporting Information			Project Information			Analytical Information			Matrix Codes													
Company Name / Branch: COG Operating, LLC			Project Name/Number: GJ West COOP Unit #210						W = Water S = Soil/Sed/Solid GW = Ground Water DW = Drinking Water P = Product SW = Surface water SL = Sludge OW = Ocean/Sea Water WI = Wipe O = Oil WW = Waste Water A = Air													
Company Address: 2407 Pecos Ave. Artesia NM 88210			Project Location: Eddy County, NM																			
Email: <a href="mailto:shitchcock@concho.com">shitchcock@concho.com</a>			Invoice To: COG Operating, LLC Attn: Robert McNeill 600 W. Illinois Ave. Midland Tx, 79701																			
Phone No: 575-703-6475 dhee12@concho.com, cgray@concho.com, rmaskell@concho.com			PO Number:																			
Project Contact: Sheldon Hitchcock																						
Sampler's Name: Sheldon Hitchcock																						
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	Number of preserved bottles				TPH EXTENDED (EPA8015M)			BTEX (EPA 8021B)			CHLORIDES (EPA 300)			Field Comments		
							HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	ICE								
1	S-3 BITTM	4' 2"	2/28/2018	11:00	S	1								X	X	X	X					
2	S-3 E. SIDEWALL	N/A	2/28/2018	11:10	S	1								X	X	X	X					
3	S-3 W. SIDEWALL	N/A	2/28/2018	11:20	S	1								X	X	X	X					
4					S	1																
5					S	1																
6					S	1																
7					S	1																
8					S	1																
9					S	1																
10					S	1																
Turnaround Time (Business days)						Data Deliverable Information						Notes:										
<input type="checkbox"/> Same Day TAT			<input type="checkbox"/> 5 Day TAT			<input type="checkbox"/> Level II Std QC			<input type="checkbox"/> Level IV (Full Data Pkg /raw data)													
<input checked="" type="checkbox"/> Next Day EMERGENCY			<input type="checkbox"/> 7 Day TAT			<input type="checkbox"/> Level III Std QC+ Forms			<input type="checkbox"/> TRRP Level IV													
<input type="checkbox"/> 2 Day EMERGENCY			<input type="checkbox"/> Contract TAT			<input type="checkbox"/> Level 3 (CLP Forms)			<input type="checkbox"/> UST / RG -411													
<input type="checkbox"/> 3 Day EMERGENCY						<input type="checkbox"/> TRRP Checklist																
TAT Starts Day received by Lab, if received by 5:00 pm												FED-EX / UPS: Tracking #										
Relinquished by Sampler:			Date Time:			Received By:			Relinquished By:			Date Time:			Received By:							
Sheldon Hitchcock			3-1-18 1:05			1 Carson Lopez			2 Carson Lopez			3-1-18 3:32			2 Carson Lopez							
Relinquished by:			Date Time:			Received By:			Relinquished By:			Date Time:			Received By:							
3						3			4													
Relinquished by:			Date Time:			Received By:			Relinquished By:			Date Time:			Received By:							
5						5																
Temp: 3.4			IR ID: R-8			CF: (0-6; -0.2°C)																





# XENCO Laboratories

## Prelogin/Nonconformance Report- Sample Log-In



Client: COG Operating LLC

Date/ Time Received: 03/02/2018 11:50:00 AM

Work Order #: 578037

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)?	3.4	
#2 *Shipping container in good condition?	Yes	
#3 *Samples received on ice?	Yes	
#4 *Custody Seals intact on shipping container/ cooler?	Yes	
#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	NM JOB
#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:

Katie Lowe

Date: 03/02/2018

Checklist reviewed by:

Jessica Kramer

Date: 03/02/2018