



[Sheldon L. Hitchcock]
[HSE Coordinator]

October 23, 2017

Crystal Weaver
Oil Conservation Division, District 2
811 S First St.
Artesia, NM 88210

**Re: Work Plan
Pinto 36 State Com #001H
API #: 30-015-39781
RP#: 2RP-4358
Unit Letter M Section 36, Township 18S, Range 25E
Eddy County, NM**

Ms. Weaver,

COG Operating, LLC (COG) is pleased to submit for your consideration the following remediation work plan for the Pinto 36 State Com #001H. This plan is in response to a produced water release that occurred on August 18, 2017. Subsequent to the release a C-141 initial report was submitted to the New Mexico Oil Conservation Division (NMOCD) on August 23, 2017.

BACKGROUND

The Pinto 36 State Com #001H release located in Unit Letter M, Section 36, Township 18S, and Range 25 East in Eddy County New Mexico. More specifically the latitude and longitude for this release are 32.6977425 North and -104.4458389 West.

On August 18, 2017, a hole developed in a 4-inch valve on a flowline junction due to corrosion. The failure resulted in the release of approximately 33bbls of produced water into the pasture. A vacuum truck was dispatched to recover all freestanding fluids. Approximately 30bbls of produced water were recovered.

A site assessment was conducted in order to vertically and horizontally define the impacted area. A site diagram is included in Appendix I. The analytical results from the site assessment activities are summarized in the table below.

GROUNDWATER AND SITE RANKING

According to the New Mexico Office of the State Engineer (NMOSE) groundwater in the project vicinity is approximately 180-feet below ground surface (BGS) (Appendix II). Therefore the site ranking for this release is zero (0) based on the following:

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

Analytical Results

Sample ID	Depth (feet)	Benzene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)
T-1	0	<0.002	<0.002	1350	<15.0	43.0
T-1	1	<0.002	<0.002	2470	<15.0	<15.0
T-1	2	<0.002	<0.002	1260	<15.0	<15.0
T-1	3	<0.002	<0.002	961	<15.0	<15.0
T-1	4	<0.002	<0.002	118	<15.0	<15.0
T-1	5	<0.002	<0.002	5720	<15.0	<15.0
T-1	6	<0.002	<0.002	859	<15.0	<15.0
T-1	8	<0.002	<0.002	28.3	<15.0	<15.0
T-1	13	<0.002	<0.002	8.45	<15.0	<15.0
T-2	0	<0.002	<0.002	3480	<15.0	<15.0
T-2	1	<0.002	<0.002	971	<15.0	<15.0
T-2	2	<0.002	<0.002	881	<15.0	<15.0
T-2	3	<0.002	<0.002	464	<15.0	<15.0
T-2	4	<0.002	<0.002	<4.95	<15.0	<15.0
T-2	9	<0.002	<0.002	228	<15.0	<15.0
North	0	<0.002	<0.002	<5.00	<15.0	<15.0
North	1	<0.002	<0.002	<5.00	<15.0	<15.0
South	0	<0.002	<0.002	<5.00	<15.0	<15.0
South	1	<0.002	<0.002	<5.00	<15.0	<15.0
East	0	<0.002	<0.002	<5.00	<15.0	<15.0
East	1	<0.002	<0.002	<5.00	<15.0	<15.0
West	0	<0.002	<0.002	66	<15.0	<15.0
West	1	<0.002	<0.002	7.23	<15.0	<15.0

PROPOSED REMEDIAL ACTIONS

- The impacted area in the vicinity of sample location T-1 will be excavated to a depth of 5.5-feet BGS.
- The impacted area in the vicinity of sample location T-2 will be excavated to a depth of 1-foot BGS.
- All of the excavated soil will be hauled to an NMOCD approved solid waste disposal facility.
- The excavation will be backfilled and contoured to match the surrounding terrain.

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

Sincerely,



Sheldon L. Hitchcock

HSE Coordinator

slhitchcock@concho.com

Enclosed:

Appendix I: Site Diagram

Appendix II: Groundwater Data

Appendix III: Initial C-141

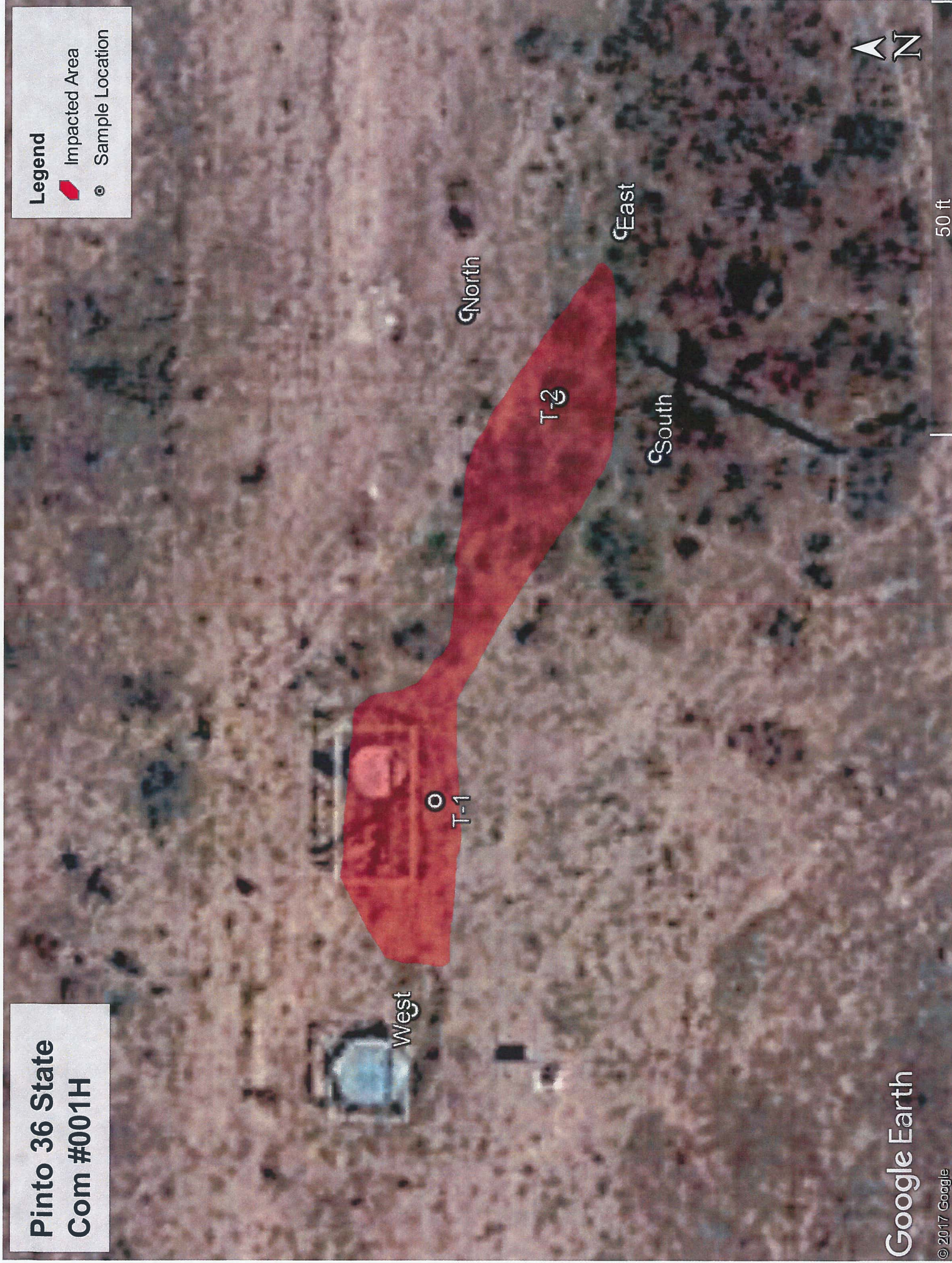
Appendix IV: Analytical Reports and Chain-of-Custody Forms

APPENDIX I

Pinto 36 State
Com #001H

Legend

- Impacted Area
- Sample Location



Google Earth

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APPENDIX II



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

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

(R=POD has
been replaced,
O=orphaned,
C=the file is
closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
RA 03975			ED	3	1	3	36	18S	25E	551942	3618353*	318	430	270	160
RA 07639			ED		3	1	01	19S	25E	552049	3617250*	801	260	172	88
RA 04128			ED			2	02	19S	25E	551443	3617449*	850	211	100	111

Average Depth to Water: **180 feet**

Minimum Depth: **100 feet**

Maximum Depth: **270 feet**

Record Count: 3

Basin/County Search:

County: Eddy

UTMNAD83 Radius Search (in meters):

Easting (X): 552044

Northing (Y): 3618051

Radius: 1000

*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

APPENDIX III

NM OIL CONSERVATION

ARTESIA DISTRICT

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

State of New Mexico
Energy Minerals and Natural Resources

AUG 23 2017

Form C-141
Revised August 8, 2011

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

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

Release Notification and Corrective Action

NAB1724034099

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: COG Operating LLC	OGRID # 229137	Contact: Robert McNeill
Address: 600 West Illinois Avenue, Midland TX 79701	Telephone No. 432-683-7443	
Facility Name: Pinto 36 State Com #001H	Facility Type: Flowline	

Surface Owner: Private	Mineral Owner: Private	API No. 30-015-39781
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LOCATION OF RELEASE

Unit Letter I	Section 2	Township 19S	Range 25E	Feet from the	North/South Line	Feet from the	East/West Line	County Eddy
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Latitude 32.688783 Longitude -104.447143

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release: 33 bbl.	Volume Recovered: 30 bbl.
Source of Release: Four-inch Valve	Date and Hour of Occurrence: August 18, 2017 6:00 pm	Date and Hour of Discovery: August 18, 2017 6:00 pm
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Ms. Weaver - NMOCD	
By Whom? Dakota Neel	Date and Hour: August 19, 2017 9:24 am	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

The release was caused when a hole developed in a four-inch valve on a flowline junction.

Describe Area Affected and Cleanup Action Taken.*

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

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

Signature: <i>Rebecca Haskell</i>	OIL CONSERVATION DIVISION	
Printed Name: Rebecca Haskell	Approved by Environmental Specialist: <i>[Signature]</i>	
Title: Senior HSE Coordinator	Approval Date: 8/28/17	Expiration Date: N/A
E-mail Address: rhaskell@concho.com	Conditions of Approval: see attached	Attached: <i>SRP-4358</i>
Date: August 23, 2017 Phone: 432-683-7443		

* Attach Additional Sheets if Necessary

8/28/17 AM

APPENDIX IV



Certificate of Analysis Summary 562388
COG Operating LLC, Artesia, NM
Project Name: Pinto 36 State #1



Project Id:
Contact: Aaron Lieb
Project Location: Pinto 36 State #1

Date Received in Lab: Fri Sep-08-17 01:45 pm
Report Date: 18-SEP-17
Project Manager: Kelsey Brooks

Analysis Requested		Lab Id:	562388-001	562388-002	562388-003	562388-004	562388-005	562388-006
		Field Id:	T1 - Surface	T1 - 1'	T1 - 2'	T1 - 3'	T1 - 4'	T1 - 5'
		Depth:		1- ft	2- ft	3- ft	4- ft	5- ft
		Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Sampled:	Sep-06-17 09:15	Sep-06-17 09:20	Sep-06-17 09:25	Sep-06-17 09:30	Sep-06-17 09:35	Sep-06-17 09:40
BTEX by EPA 8021B		Extracted:	Sep-11-17 14:00	Sep-12-17 08:15	Sep-12-17 08:15	Sep-12-17 08:15		
		Analyzed:	Sep-11-17 22:48	Sep-12-17 11:50	Sep-12-17 13:06	Sep-12-17 13:25		
		Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene			<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198		
Toluene			<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198		
Ethylbenzene			<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198		
m,p-Xylenes			<0.00399 0.00399	<0.00398 0.00398	<0.00400 0.00400	<0.00397 0.00397		
o-Xylene			<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198		
Total Xylenes			<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198		
Total BTEX			<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198		
Inorganic Anions by EPA 300/300.1		Extracted:	Sep-14-17 12:00	Sep-14-17 12:00	Sep-14-17 12:00	Sep-14-17 12:00	Sep-14-17 12:00	Sep-14-17 12:00
		Analyzed:	Sep-14-17 21:07	Sep-14-17 21:15	Sep-14-17 21:23	Sep-14-17 21:31	Sep-14-17 21:39	Sep-14-17 22:04
		Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride			1350 5.00	2470 25.0	1260 5.00	961 5.00	118 5.00	5720 25.0
TPH By SW8015 Mod		Extracted:	Sep-12-17 16:00	Sep-12-17 16:00	Sep-12-17 16:00	Sep-12-17 16:00		
		Analyzed:	Sep-12-17 23:30	Sep-13-17 00:33	Sep-13-17 00:54	Sep-13-17 01:15		
		Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Gasoline Range Hydrocarbons (GRO)			<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		
Diesel Range Organics (DRO)			43.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		
Oil Range Hydrocarbons (ORO)			<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		
Total TPH			43.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		

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

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

Kelsey Brooks
Project Manager



Certificate of Analysis Summary 562388

COG Operating LLC, Artesia, NM



Project Id:

Contact: Aaron Lieb

Project Location: Pinto 36 State #1

Project Name: Pinto 36 State #1

Date Received in Lab: Fri Sep-08-17 01:45 pm

Report Date: 18-SEP-17

Project Manager: Kelsey Brooks

Analysis Requested		Lab Id:	Field Id:	Depth:	Matrix:	Sampled:	562388-007	562388-008	562388-009	562388-010	562388-011	562388-012
							T1 - 6'	T1 - 8'	T1 - 13'	T2 - Surface	T2 - 1'	T2 - 2'
							6- ft	8- ft	13- ft	SOIL	1- ft	2- ft
							SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
							Sep-06-17 09:45	Sep-06-17 09:50	Sep-06-17 09:55	Sep-06-17 10:00	Sep-06-17 10:05	Sep-06-17 10:10
BTEX by EPA 8021B		Extracted:							Sep-12-17 08:15	Sep-12-17 08:15	Sep-12-17 08:15	Sep-12-17 08:15
		Analyzed:							Sep-12-17 13:42	Sep-12-17 14:01	Sep-12-17 15:55	Sep-12-17 16:14
		Units/RL:							mg/kg	mg/kg	mg/kg	mg/kg
Benzene									RL	RL	RL	RL
									<0.00202	<0.00200	<0.00200	<0.00199
Toluene									0.00202	0.00200	0.00200	0.00199
									<0.00202	<0.00200	<0.00200	<0.00199
Ethylbenzene									0.00202	0.00200	0.00200	0.00199
									<0.00403	<0.00401	<0.00399	<0.00398
m,p-Xylenes									0.00403	0.00401	0.00399	0.00398
									<0.00202	<0.00200	<0.00200	<0.00199
o-Xylene									0.00202	0.00200	0.00200	0.00199
									<0.00202	<0.00200	<0.00200	<0.00199
Total Xylenes									0.00202	0.00200	0.00200	0.00199
									<0.00202	<0.00200	<0.00200	<0.00199
Total BTEX									0.00202	0.00200	0.00200	0.00199
Inorganic Anions by EPA 300/300.1		Extracted:					Sep-14-17 12:00	Sep-15-17 09:00	Sep-15-17 09:00	Sep-15-17 09:00	Sep-15-17 09:00	Sep-15-17 09:00
		Analyzed:					Sep-14-17 22:12	Sep-15-17 13:15	Sep-15-17 13:23	Sep-15-17 13:31	Sep-15-17 13:39	Sep-15-17 13:48
		Units/RL:					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Chloride							859	28.3	8.45	3480	971	881
							5.00	5.00	5.00	25.0	5.00	5.00
TPH By SW8015 Mod		Extracted:							Sep-12-17 16:00	Sep-12-17 16:00	Sep-12-17 16:00	Sep-12-17 16:00
		Analyzed:							Sep-13-17 01:36	Sep-13-17 01:57	Sep-13-17 02:18	Sep-13-17 02:40
		Units/RL:							mg/kg	mg/kg	mg/kg	mg/kg
Gasoline Range Hydrocarbons (GRO)									<14.9	<15.0	<14.9	<15.0
									14.9	15.0	14.9	15.0
Diesel Range Organics (DRO)									<14.9	<15.0	<14.9	<15.0
									14.9	15.0	14.9	15.0
Oil Range Hydrocarbons (ORO)									<14.9	<15.0	<14.9	<15.0
									14.9	15.0	14.9	15.0
Total TPH									<14.9	<15.0	<14.9	<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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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 562388

COG Operating LLC, Artesia, NM



Project Id:

Contact: Aaron Lieb

Project Location: Pinto 36 State #1

Date Received in Lab: Fri Sep-08-17 01:45 pm

Report Date: 18-SEP-17

Project Manager: Kelsey Brooks

Project Name: Pinto 36 State #1

Analysis Requested		Lab Id:	Field Id:	Depth:	Matrix:	Sampled:	562388-013	562388-014	562388-015		
BTEX by EPA 8021B		Extracted:					T2 - 3'	T2 - 4'	T2 - 9'		
		Analyzed:					3- ft	4- ft	9- ft		
		Units/RL:					SOIL	SOIL	SOIL		
Benzene							Sep-06-17 10:15	Sep-06-17 10:20	Sep-06-17 10:30		
Toluene									Sep-12-17 08:15		
Ethylbenzene									Sep-12-17 16:33		
m,p-Xylenes									mg/kg RL		
o-Xylene									<0.00199 0.00199		
Total Xylenes									<0.00199 0.00199		
Total BTEX									<0.00199 0.00199		
Inorganic Anions by EPA 300/300.1		Extracted:					Sep-15-17 13:15	Sep-15-17 13:15	Sep-15-17 13:15		
		Analyzed:					Sep-15-17 14:37	Sep-15-17 15:01	Sep-15-17 15:09		
		Units/RL:					mg/kg RL	mg/kg RL	mg/kg RL		
Chloride							464 4.97	<4.95 4.95	228 4.95		
TPH By SW8015 Mod		Extracted:							Sep-12-17 16:00		
		Analyzed:							Sep-13-17 03:01		
		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		

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

Kelsey Brooks
Project Manager

Analytical Report 562388

**for
COG Operating LLC**

Project Manager: Aaron Lieb

Pinto 36 State #1

18-SEP-17

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
Oklahoma (9218)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295)

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

Xenco-San Antonio: Texas (T104704534)

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

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



18-SEP-17

Project Manager: **Aaron Lieb**

COG Operating LLC

2407 Pecos Avenue

Artesia, NM 88210

Reference: XENCO Report No(s): **562388**

Pinto 36 State #1

Project Address: Pinto 36 State #1

Aaron Lieb:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 562388. 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. 562388 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 562388



COG Operating LLC, Artesia, NM

Pinto 36 State #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
T1 - Surface	S	09-06-17 09:15		562388-001
T1 - 1'	S	09-06-17 09:20	1 ft	562388-002
T1 - 2'	S	09-06-17 09:25	2 ft	562388-003
T1 - 3'	S	09-06-17 09:30	3 ft	562388-004
T1 - 4'	S	09-06-17 09:35	4 ft	562388-005
T1 - 5'	S	09-06-17 09:40	5 ft	562388-006
T1 - 6'	S	09-06-17 09:45	6 ft	562388-007
T1 - 8'	S	09-06-17 09:50	8 ft	562388-008
T1 - 13'	S	09-06-17 09:55	13 ft	562388-009
T2 - Surface	S	09-06-17 10:00	ft	562388-010
T2 - 1'	S	09-06-17 10:05	1 ft	562388-011
T2 - 2'	S	09-06-17 10:10	2 ft	562388-012
T2 - 3'	S	09-06-17 10:15	3 ft	562388-013
T2 - 4'	S	09-06-17 10:20	4 ft	562388-014
T2 - 9'	S	09-06-17 10:30	9 ft	562388-015



CASE NARRATIVE

Client Name: COG Operating LLC

Project Name: Pinto 36 State #1

Project ID:
Work Order Number(s): 562388

Report Date: 18-SEP-17
Date Received: 09/08/2017

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3027292 BTEX by EPA 8021B

Lab Sample ID 562388-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene 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: 562388-001.

The Laboratory Control Sample for Toluene, m,p-Xylenes, Ethylbenzene, o-Xylene 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.

Batch: LBA-3027439 BTEX by EPA 8021B

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

Lab Sample ID 562388-002 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). m,p-Xylenes, o-Xylene 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: 562388-002, -003, -004, -009, -010, -011, -012, -015.

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



Certificate of Analytical Results 562388



COG Operating LLC, Artesia, NM

Pinto 36 State #1

Sample Id: **T1 - Surface**

Matrix: Soil

Date Received: 09.08.17 13.45

Lab Sample Id: 562388-001

Date Collected: 09.06.17 09.15

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MNV

% Moisture:

Analyst: MNV

Date Prep: 09.14.17 12.00

Basis: Wet Weight

Seq Number: 3027673

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1350	5.00	mg/kg	09.14.17 21.07		1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 09.12.17 16.00

Basis: Wet Weight

Seq Number: 3027473

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.12.17 23.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	43.0	15.0	mg/kg	09.12.17 23.30		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	09.12.17 23.30	U	1
Total TPH	PHC635	43.0	15.0	mg/kg	09.12.17 23.30		1

Surrogate

1-Chlorooctane

Cas Number

%
Recovery

Units

Limits

Analysis Date

Flag

111-85-3

121

%

70-135

09.12.17 23.30

o-Terphenyl

84-15-1

116

%

70-135

09.12.17 23.30



Certificate of Analytical Results 562388



COG Operating LLC, Artesia, NM

Pinto 36 State #1

Sample Id: T1 - Surface

Matrix: Soil

Date Received: 09.08.17 13.45

Lab Sample Id: 562388-001

Date Collected: 09.06.17 09.15

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.11.17 14.00

Basis: Wet Weight

Seq Number: 3027292

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.11.17 22.48	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.11.17 22.48	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.11.17 22.48	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	09.11.17 22.48	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.11.17 22.48	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.11.17 22.48	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.11.17 22.48	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	82	%	80-120	09.11.17 22.48		
1,4-Difluorobenzene	540-36-3	98	%	80-120	09.11.17 22.48		



Certificate of Analytical Results 562388



COG Operating LLC, Artesia, NM

Pinto 36 State #1

Sample Id: T1 - 1'

Matrix: Soil

Date Received: 09.08.17 13.45

Lab Sample Id: 562388-002

Date Collected: 09.06.17 09.20

Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MNV

% Moisture:

Analyst: MNV

Date Prep: 09.14.17 12.00

Basis: Wet Weight

Seq Number: 3027673

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2470	25.0	mg/kg	09.14.17 21.15		5

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 09.12.17 16.00

Basis: Wet Weight

Seq Number: 3027473

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.13.17 00.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.13.17 00.33	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	09.13.17 00.33	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.13.17 00.33	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	117	%	70-135	09.13.17 00.33		
o-Terphenyl	84-15-1	113	%	70-135	09.13.17 00.33		



Certificate of Analytical Results 562388



COG Operating LLC, Artesia, NM

Pinto 36 State #1

Sample Id: T1 - 1'
Lab Sample Id: 562388-002

Matrix: Soil
Date Collected: 09.06.17 09.20

Date Received: 09.08.17 13.45
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3027439

Date Prep: 09.12.17 08.15

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.12.17 11.50	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.12.17 11.50	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.12.17 11.50	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.12.17 11.50	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.12.17 11.50	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.12.17 11.50	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.12.17 11.50	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	111	%	80-120	09.12.17 11.50		
4-Bromofluorobenzene	460-00-4	81	%	80-120	09.12.17 11.50		



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COG Operating LLC, Artesia, NM

Pinto 36 State #1

Sample Id: T1 - 2'
Lab Sample Id: 562388-003

Matrix: Soil
Date Collected: 09.06.17 09.25

Date Received: 09.08.17 13.45
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MNV

Analyst: MNV

Seq Number: 3027673

Date Prep: 09.14.17 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1260	5.00	mg/kg	09.14.17 21.23		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3027473

Date Prep: 09.12.17 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.13.17 00.54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.13.17 00.54	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	09.13.17 00.54	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.13.17 00.54	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	100	%	70-135	09.13.17 00.54		
o-Terphenyl	84-15-1	99	%	70-135	09.13.17 00.54		



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COG Operating LLC, Artesia, NM

Pinto 36 State #1

Sample Id: T1 - 2'
Lab Sample Id: 562388-003

Matrix: Soil
Date Collected: 09.06.17 09.25

Date Received: 09.08.17 13.45
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3027439

Date Prep: 09.12.17 08.15

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.12.17 13.06	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.12.17 13.06	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.12.17 13.06	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	09.12.17 13.06	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.12.17 13.06	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.12.17 13.06	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.12.17 13.06	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	94	%	80-120	09.12.17 13.06		
4-Bromofluorobenzene	460-00-4	84	%	80-120	09.12.17 13.06		



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COG Operating LLC, Artesia, NM

Pinto 36 State #1

Sample Id: T1 - 3'
Lab Sample Id: 562388-004

Matrix: Soil
Date Collected: 09.06.17 09.30

Date Received: 09.08.17 13.45
Sample Depth: 3 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MNV

Analyst: MNV

Seq Number: 3027673

Date Prep: 09.14.17 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	961	5.00	mg/kg	09.14.17 21.31		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3027473

Date Prep: 09.12.17 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.13.17 01.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.13.17 01.15	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	09.13.17 01.15	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.13.17 01.15	U	1
Surrogate							
	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	100	%	70-135	09.13.17 01.15		
o-Terphenyl	84-15-1	99	%	70-135	09.13.17 01.15		



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COG Operating LLC, Artesia, NM

Pinto 36 State #1

Sample Id: T1 - 3'
Lab Sample Id: 562388-004

Matrix: Soil
Date Collected: 09.06.17 09.30

Date Received: 09.08.17 13.45
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3027439

Date Prep: 09.12.17 08.15

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	09.12.17 13.25	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	09.12.17 13.25	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	09.12.17 13.25	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	09.12.17 13.25	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	09.12.17 13.25	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	09.12.17 13.25	U	1
Total BTEX		<0.00198	0.00198	mg/kg	09.12.17 13.25	U	1
Surrogate							
	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	84	%	80-120	09.12.17 13.25		
1,4-Difluorobenzene	540-36-3	104	%	80-120	09.12.17 13.25		



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COG Operating LLC, Artesia, NM

Pinto 36 State #1

Sample Id: T1 - 4'

Matrix: Soil

Date Received: 09.08.17 13.45

Lab Sample Id: 562388-005

Date Collected: 09.06.17 09.35

Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MNV

% Moisture:

Analyst: MNV

Date Prep: 09.14.17 12.00

Basis: Wet Weight

Seq Number: 3027673

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	118	5.00	mg/kg	09.14.17 21.39		1



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COG Operating LLC, Artesia, NM

Pinto 36 State #1

Sample Id: T1 - 5'
Lab Sample Id: 562388-006

Matrix: Soil
Date Collected: 09.06.17 09.40

Date Received: 09.08.17 13.45
Sample Depth: 5 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MNV

Analyst: MNV

Seq Number: 3027673

Date Prep: 09.14.17 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5720	25.0	mg/kg	09.14.17 22.04		5



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COG Operating LLC, Artesia, NM

Pinto 36 State #1

Sample Id: T1 - 6'
Lab Sample Id: 562388-007

Matrix: Soil
Date Collected: 09.06.17 09.45

Date Received: 09.08.17 13.45
Sample Depth: 6 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MNV

Analyst: MNV

Seq Number: 3027673

Date Prep: 09.14.17 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	859	5.00	mg/kg	09.14.17 22.12		1



Certificate of Analytical Results 562388



COG Operating LLC, Artesia, NM

Pinto 36 State #1

Sample Id: T1 - 8'
Lab Sample Id: 562388-008

Matrix: Soil
Date Collected: 09.06.17 09.50

Date Received: 09.08.17 13.45
Sample Depth: 8 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MNV

Analyst: MNV

Seq Number: 3027749

Date Prep: 09.15.17 09.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	28.3	5.00	mg/kg	09.15.17 13.15		1



Certificate of Analytical Results 562388



COG Operating LLC, Artesia, NM

Pinto 36 State #1

Sample Id: T1 - 13'

Matrix: Soil

Date Received: 09.08.17 13.45

Lab Sample Id: 562388-009

Date Collected: 09.06.17 09.55

Sample Depth: 13 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MNV

% Moisture:

Analyst: MNV

Date Prep: 09.15.17 09.00

Basis: Wet Weight

Seq Number: 3027749

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8.45	5.00	mg/kg	09.15.17 13.23		1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 09.12.17 16.00

Basis: Wet Weight

Seq Number: 3027473

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	09.13.17 01.36	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	09.13.17 01.36	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9	mg/kg	09.13.17 01.36	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	09.13.17 01.36	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	98	%	70-135	09.13.17 01.36		
o-Terphenyl	84-15-1	96	%	70-135	09.13.17 01.36		



Certificate of Analytical Results 562388



COG Operating LLC, Artesia, NM

Pinto 36 State #1

Sample Id: T1 - 13'
Lab Sample Id: 562388-009

Matrix: Soil
Date Collected: 09.06.17 09.55

Date Received: 09.08.17 13.45
Sample Depth: 13 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3027439

Date Prep: 09.12.17 08.15

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	09.12.17 13.42	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	09.12.17 13.42	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	09.12.17 13.42	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	09.12.17 13.42	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	09.12.17 13.42	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	09.12.17 13.42	U	1
Total BTEX		<0.00202	0.00202	mg/kg	09.12.17 13.42	U	1
Surrogate							
	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	93	%	80-120	09.12.17 13.42		
4-Bromofluorobenzene	460-00-4	86	%	80-120	09.12.17 13.42		



Certificate of Analytical Results 562388



COG Operating LLC, Artesia, NM

Pinto 36 State #1

Sample Id: T2 - Surface

Matrix: Soil

Date Received: 09.08.17 13.45

Lab Sample Id: 562388-010

Date Collected: 09.06.17 10.00

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MNV

% Moisture:

Analyst: MNV

Date Prep: 09.15.17 09.00

Basis: Wet Weight

Seq Number: 3027749

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3480	25.0	mg/kg	09.15.17 13.31		5

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 09.12.17 16.00

Basis: Wet Weight

Seq Number: 3027473

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.13.17 01.57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.13.17 01.57	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	09.13.17 01.57	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.13.17 01.57	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	97	%	70-135	09.13.17 01.57		
o-Terphenyl	84-15-1	96	%	70-135	09.13.17 01.57		



Certificate of Analytical Results 562388



COG Operating LLC, Artesia, NM

Pinto 36 State #1

Sample Id: T2 - Surface

Matrix: Soil

Date Received: 09.08.17 13.45

Lab Sample Id: 562388-010

Date Collected: 09.06.17 10.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.12.17 08.15

Basis: Wet Weight

Seq Number: 3027439

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.12.17 14.01	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.12.17 14.01	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.12.17 14.01	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	09.12.17 14.01	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.12.17 14.01	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.12.17 14.01	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.12.17 14.01	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	98		%	80-120	09.12.17 14.01	
4-Bromofluorobenzene	460-00-4	90		%	80-120	09.12.17 14.01	



Certificate of Analytical Results 562388



COG Operating LLC, Artesia, NM

Pinto 36 State #1

Sample Id: T2 - 1'
Lab Sample Id: 562388-011

Matrix: Soil
Date Collected: 09.06.17 10.05

Date Received: 09.08.17 13.45
Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MNV

Analyst: MNV

Seq Number: 3027749

Date Prep: 09.15.17 09.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	971	5.00	mg/kg	09.15.17 13.39		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3027473

Date Prep: 09.12.17 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	09.13.17 02.18	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	09.13.17 02.18	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9	mg/kg	09.13.17 02.18	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	09.13.17 02.18	U	1

Surrogate

1-Chlorooctane

o-Terphenyl

Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
111-85-3	117	%	70-135	09.13.17 02.18	
84-15-1	114	%	70-135	09.13.17 02.18	



Certificate of Analytical Results 562388



COG Operating LLC, Artesia, NM

Pinto 36 State #1

Sample Id: T2 - 1'
Lab Sample Id: 562388-011

Matrix: Soil
Date Collected: 09.06.17 10.05

Date Received: 09.08.17 13.45
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3027439

Date Prep: 09.12.17 08.15

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.12.17 15.55	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.12.17 15.55	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.12.17 15.55	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	09.12.17 15.55	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.12.17 15.55	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.12.17 15.55	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.12.17 15.55	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	86		%	80-120	09.12.17 15.55	
1,4-Difluorobenzene	540-36-3	96		%	80-120	09.12.17 15.55	



Certificate of Analytical Results 562388



COG Operating LLC, Artesia, NM

Pinto 36 State #1

Sample Id: T2 - 2'
Lab Sample Id: 562388-012

Matrix: Soil
Date Collected: 09.06.17 10.10

Date Received: 09.08.17 13.45
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MNV

Analyst: MNV

Seq Number: 3027749

Date Prep: 09.15.17 09.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	881	5.00	mg/kg	09.15.17 13.48		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3027473

Date Prep: 09.12.17 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.13.17 02.40	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.13.17 02.40	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	09.13.17 02.40	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.13.17 02.40	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	113	%	70-135	09.13.17 02.40		
o-Terphenyl	84-15-1	107	%	70-135	09.13.17 02.40		



Certificate of Analytical Results 562388



COG Operating LLC, Artesia, NM

Pinto 36 State #1

Sample Id: T2 - 2'
Lab Sample Id: 562388-012

Matrix: Soil
Date Collected: 09.06.17 10.10

Date Received: 09.08.17 13.45
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3027439

Date Prep: 09.12.17 08.15

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.12.17 16.14	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.12.17 16.14	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.12.17 16.14	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.12.17 16.14	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.12.17 16.14	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.12.17 16.14	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.12.17 16.14	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	96	%	80-120	09.12.17 16.14		
4-Bromofluorobenzene	460-00-4	87	%	80-120	09.12.17 16.14		



Certificate of Analytical Results 562388



COG Operating LLC, Artesia, NM

Pinto 36 State #1

Sample Id: T2 - 3'
Lab Sample Id: 562388-013

Matrix: Soil
Date Collected: 09.06.17 10.15

Date Received: 09.08.17 13.45
Sample Depth: 3 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MNV

Analyst: MNV

Seq Number: 3027941

Date Prep: 09.15.17 13.15

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	464	4.97	mg/kg	09.15.17 14.37		1



Certificate of Analytical Results 562388



COG Operating LLC, Artesia, NM

Pinto 36 State #1

Sample Id: T2 - 4'
Lab Sample Id: 562388-014

Matrix: Soil
Date Collected: 09.06.17 10.20

Date Received: 09.08.17 13.45
Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MNV

Prep Method: E300P

Analyst: MNV

Date Prep: 09.15.17 13.15

% Moisture:

Seq Number: 3027941

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.95	4.95	mg/kg	09.15.17 15.01	U	1



Certificate of Analytical Results 562388



COG Operating LLC, Artesia, NM

Pinto 36 State #1

Sample Id: T2 - 9'
Lab Sample Id: 562388-015

Matrix: Soil
Date Collected: 09.06.17 10.30

Date Received: 09.08.17 13.45
Sample Depth: 9 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MNV

Analyst: MNV

Seq Number: 3027941

Date Prep: 09.15.17 13.15

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	228	4.95	mg/kg	09.15.17 15.09		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3027473

Date Prep: 09.12.17 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.13.17 03.01	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.13.17 03.01	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	09.13.17 03.01	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.13.17 03.01	U	1

Surrogate

1-Chlorooctane

o-Terphenyl

Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
111-85-3	99	%	70-135	09.13.17 03.01	
84-15-1	96	%	70-135	09.13.17 03.01	



Certificate of Analytical Results 562388



COG Operating LLC, Artesia, NM

Pinto 36 State #1

Sample Id: T2 - 9'
Lab Sample Id: 562388-015

Matrix: Soil
Date Collected: 09.06.17 10.30

Date Received: 09.08.17 13.45
Sample Depth: 9 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3027439

Date Prep: 09.12.17 08.15

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.12.17 16.33	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.12.17 16.33	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.12.17 16.33	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.12.17 16.33	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.12.17 16.33	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.12.17 16.33	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.12.17 16.33	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	85		%	80-120	09.12.17 16.33	
1,4-Difluorobenzene	540-36-3	95		%	80-120	09.12.17 16.33	



Flagging Criteria



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

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

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

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QC Summary 562388

COG Operating LLC

Pinto 36 State #1

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3027673

Matrix: Solid

Prep Method: E300P

Date Prep: 09.14.17

MB Sample Id: 730954-1-BLK

LCS Sample Id: 730954-1-BKS

LCSD Sample Id: 730954-1-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	258	103	258	103	90-110	0	20	mg/kg	09.14.17 17:07	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3027749

Matrix: Solid

Prep Method: E300P

Date Prep: 09.15.17

MB Sample Id: 730955-1-BLK

LCS Sample Id: 730955-1-BKS

LCSD Sample Id: 730955-1-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	254	102	256	102	90-110	1	20	mg/kg	09.15.17 09:37	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3027941

Matrix: Solid

Prep Method: E300P

Date Prep: 09.15.17

MB Sample Id: 731046-1-BLK

LCS Sample Id: 731046-1-BKS

LCSD Sample Id: 731046-1-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	257	103	257	103	90-110	0	20	mg/kg	09.15.17 14:20	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3027673

Matrix: Soil

Prep Method: E300P

Date Prep: 09.14.17

Parent Sample Id: 562387-006

MS Sample Id: 562387-006 S

MSD Sample Id: 562387-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	262	105	262	105	90-110	0	20	mg/kg	09.14.17 20:34	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3027673

Matrix: Soil

Prep Method: E300P

Date Prep: 09.14.17

Parent Sample Id: 562392-001

MS Sample Id: 562392-001 S

MSD Sample Id: 562392-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	3330	250	3560	92	3570	96	90-110	0	20	mg/kg	09.14.17 17:32	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3027749

Matrix: Soil

Prep Method: E300P

Date Prep: 09.15.17

Parent Sample Id: 562396-003

MS Sample Id: 562396-003 S

MSD Sample Id: 562396-003 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	270	108	271	108	90-110	0	20	mg/kg	09.15.17 12:09	



QC Summary 562388

COG Operating LLC

Pinto 36 State #1

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3027749

Matrix: Soil

Prep Method: E300P

Date Prep: 09.15.17

Parent Sample Id: 562537-001

MS Sample Id: 562537-001 S

MSD Sample Id: 562537-001 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	272	109	271	108	90-110	0	20	mg/kg	09.15.17 10:15	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3027941

Matrix: Soil

Prep Method: E300P

Date Prep: 09.15.17

Parent Sample Id: 562388-013

MS Sample Id: 562388-013 S

MSD Sample Id: 562388-013 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	464	249	692	92	702	96	90-110	1	20	mg/kg	09.15.17 14:45	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3027941

Matrix: Soil

Prep Method: E300P

Date Prep: 09.15.17

Parent Sample Id: 562407-004

MS Sample Id: 562407-004 S

MSD Sample Id: 562407-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	5690	249	5690	0	5760	28	90-110	1	20	mg/kg	09.15.17 17:50	X

Analytical Method: TPH By SW8015 Mod

Seq Number: 3027473

Matrix: Solid

Prep Method: TX1005P

Date Prep: 09.12.17

MB Sample Id: 730846-1-BLK

LCS Sample Id: 730846-1-BKS

LCSD Sample Id: 730846-1-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	1090	109	1070	107	70-135	2	35	mg/kg	09.12.17 22:48	
Diesel Range Organics (DRO)	<15.0	1000	1100	110	1100	110	70-135	0	35	mg/kg	09.12.17 22:48	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	109		108		104		70-135	%	09.12.17 22:48
o-Terphenyl	110		101		102		70-135	%	09.12.17 22:48



QC Summary 562388

COG Operating LLC

Pinto 36 State #1

Analytical Method: TPH By SW8015 Mod

Seq Number: 3027473

Parent Sample Id: 562388-001

Matrix: Soil

MS Sample Id: 562388-001 S

Prep Method: TX1005P

Date Prep: 09.12.17

MSD Sample Id: 562388-001 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	1040	104	977	98	70-135	6	35	mg/kg	09.12.17 23:50	
Diesel Range Organics (DRO)	43.0	999	1100	106	1060	102	70-135	4	35	mg/kg	09.12.17 23:50	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	101		100		70-135	%	09.12.17 23:50
o-Terphenyl	97		95		70-135	%	09.12.17 23:50

Analytical Method: BTEX by EPA 8021B

Seq Number: 3027292

MB Sample Id: 730734-1-BLK

Matrix: Solid

LCS Sample Id: 730734-1-BKS

Prep Method: SW5030B

Date Prep: 09.11.17

LCSD Sample Id: 730734-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.106	105	0.106	106	70-130	0	35	mg/kg	09.11.17 20:57	
Toluene	<0.00202	0.101	0.100	99	0.100	100	70-130	0	35	mg/kg	09.11.17 20:57	
Ethylbenzene	<0.00202	0.101	0.0995	99	0.0991	99	71-129	0	35	mg/kg	09.11.17 20:57	
m,p-Xylenes	<0.00403	0.202	0.193	96	0.192	96	70-135	1	35	mg/kg	09.11.17 20:57	
o-Xylene	<0.00202	0.101	0.0941	93	0.0931	93	71-133	1	35	mg/kg	09.11.17 20:57	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	93		97		96		80-120	%	09.11.17 20:57
4-Bromofluorobenzene	86		92		89		80-120	%	09.11.17 20:57

Analytical Method: BTEX by EPA 8021B

Seq Number: 3027439

MB Sample Id: 730824-1-BLK

Matrix: Solid

LCS Sample Id: 730824-1-BKS

Prep Method: SW5030B

Date Prep: 09.12.17

LCSD Sample Id: 730824-1-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	0.109	109	0.106	106	70-130	3	35	mg/kg	09.12.17 09:32	
Toluene	<0.00200	0.100	0.103	103	0.100	100	70-130	3	35	mg/kg	09.12.17 09:32	
Ethylbenzene	<0.00200	0.100	0.101	101	0.0987	99	71-129	2	35	mg/kg	09.12.17 09:32	
m,p-Xylenes	<0.00401	0.200	0.196	98	0.192	96	70-135	2	35	mg/kg	09.12.17 09:32	
o-Xylene	<0.00200	0.100	0.0948	95	0.0928	93	71-133	2	35	mg/kg	09.12.17 09:32	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	93		95		95		80-120	%	09.12.17 09:32
4-Bromofluorobenzene	83		89		90		80-120	%	09.12.17 09:32



QC Summary 562388

COG Operating LLC

Pinto 36 State #1

Analytical Method: BTEX by EPA 8021B

Seq Number: 3027292

Parent Sample Id: 562388-001

Matrix: Soil

MS Sample Id: 562388-001 S

Prep Method: SW5030B

Date Prep: 09.11.17

MSD Sample Id: 562388-001 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	0.0733	73	0.0791	79	70-130	8	35	mg/kg	09.11.17 21:35	
Toluene	<0.00200	0.100	0.0618	62	0.0692	69	70-130	11	35	mg/kg	09.11.17 21:35	X
Ethylbenzene	<0.00200	0.100	0.0549	55	0.0587	59	71-129	7	35	mg/kg	09.11.17 21:35	X
m,p-Xylenes	<0.00400	0.200	0.103	52	0.109	54	70-135	6	35	mg/kg	09.11.17 21:35	X
o-Xylene	<0.00200	0.100	0.0553	55	0.0565	57	71-133	2	35	mg/kg	09.11.17 21:35	X

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		98		80-120	%	09.11.17 21:35
4-Bromofluorobenzene	87		91		80-120	%	09.11.17 21:35

Analytical Method: BTEX by EPA 8021B

Seq Number: 3027439

Parent Sample Id: 562388-002

Matrix: Soil

MS Sample Id: 562388-002 S

Prep Method: SW5030B

Date Prep: 09.12.17

MSD Sample Id: 562388-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.102	101	0.0862	85	70-130	17	35	mg/kg	09.12.17 10:10	
Toluene	<0.00202	0.101	0.0835	83	0.0786	78	70-130	6	35	mg/kg	09.12.17 10:10	
Ethylbenzene	<0.00202	0.101	0.0725	72	0.0723	72	71-129	0	35	mg/kg	09.12.17 10:10	
m,p-Xylenes	<0.00404	0.202	0.134	66	0.138	69	70-135	3	35	mg/kg	09.12.17 10:10	X
o-Xylene	<0.00202	0.101	0.0682	68	0.0695	69	71-133	2	35	mg/kg	09.12.17 10:10	X

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	119		96		80-120	%	09.12.17 10:10
4-Bromofluorobenzene	84		89		80-120	%	09.12.17 10:10



Page 1 of 2

Phoenix, Arizona (480-355-0900)

5102200

Notice: Notice: Signature of this document and reimbursement of samples constitutes a valid purchase order from client company to Xencio. Its affiliates and subcontractors. It assigns standard terms and conditions of service. Xencio will be liable only for the costs or expenses incurred by the Client if such losses are due to circumstances beyond the control of Xencio. A minimum charge of \$75 will be applied to each project. Xencio's liability will be limited to the cost of samples. Any samples received by Xencio but not used will be enforced unless previously negotiated under a fully executed client contract.

Temp: 4.2
CF: (0.6; -0.2°C)
(6-23; +0.2°C)
Corrected Temp: 4.0
IR ID: R-1



Setting the Standard since 1980
Stafford, Texas (281-240-4200)
Dallas Texas (214-902-0300)

CHAIN OF CUSTODY

Page 2 of 2

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

Phoenix, Arizona (480-355-0900)

www.xenco.com

Client / Reporting Information										Project Information										Xenco Quote #		Xenco Job #		Matrix Codes	
Company Name / Branch: COG Operating LLC										Project Name/Number: Pinto 36 State #1										Xenco Quote #		Xenco Job #		Matrix Codes	
Company Address: 2407 PECOS Avenue Atesta NM 88210										Project Location: Pinto 36 State #1															
Email: aaleb@xenco.com daniel@xenco.com rhashe@xenco.com										Invoice To: COG Operating LLC Attn: Robert McNeill 600 W. Illinois Midland TX 79701															
Project Contact: Aaron Lieb										PO Number:															
Samplers Name: Aaron Lieb																									
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCI	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MeOH	NONE	TPH/ EXTENDED	BTEX	Chloride	Field Comments							
1	T2- Surf	5'±	9/8/17	10:00am	S	1									X	X	X								
2	T2- 1'	1'		10:05		1									X	X	X								
3	T2- 2'	2'		10:10		1									X	X	X								
4	T2- 3'	3'		10:15		1									X	X	X								
5	T2- 4'	4'		10:20		1									X	X	X								
6	T2- 9'	9'		10:30		1									X	X	X								
7																									
8																									
9																									
10																									
Turnaround Time (Business days)										Data Deliverable Information															
☐ Same Day TAT										☐ 5 Day TAT															
☐ Next Day EMERGENCY										☐ 7 Day TAT															
☐ 2 Day EMERGENCY										☐ Contract TAT															
☐ 3 Day EMERGENCY										☐ TRRP Checklist															
TAT Starts Day received by Lab, if received by 5:00 pm																									
Relinquished by Sampler:										SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY															
Date Time: 9/8/17 11:50 am										Received By: 2nd Butler															
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XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In



Client: COG Operating LLC

Date/ Time Received: 09/08/2017 01:45:00 PM

Work Order #: 562388

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)?	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: Jessica Kramer
Jessica Kramer

Date: 09/11/2017

Checklist reviewed by: Kelsey Brooks
Kelsey Brooks

Date: 09/11/2017



Certificate of Analysis Summary 562387

COG Operating LLC, Artesia, NM

Project Name: Pinto 36 State #1



Project Id: Aaron Lieb
Contact: Pinto 36 State #1
Project Location:

Date Received in Lab: Fri Sep-08-17 01:45 pm
Report Date: 15-SEP-17
Project Manager: Kelsey Brooks

Analysis Requested		Lab Id: Field Id: Depth: Matrix: Sampled:	562387-001 North - Surface SOIL Sep-06-17 11:00	562387-002 North - 1' - ft SOIL Sep-06-17 11:10	562387-003 South - Surface SOIL Sep-06-17 11:15	562387-004 South - 1' - ft SOIL Sep-06-17 11:20	562387-005 East - Surface SOIL Sep-06-17 11:30	562387-006 East - 1' - ft SOIL Sep-06-17 11:35
BTEX by EPA 8021B		Extracted: Analyzed: Units/RL:	Sep-11-17 14:00 Sep-12-17 03:26 mg/kg RL <0.00199 0.00199	Sep-11-17 14:00 Sep-12-17 03:44 mg/kg RL <0.00198 0.00198	Sep-11-17 14:00 Sep-12-17 04:02 mg/kg RL <0.00200 0.00200	Sep-11-17 14:00 Sep-12-17 04:21 mg/kg RL <0.00202 0.00202	Sep-11-17 14:00 Sep-12-17 04:39 mg/kg RL <0.00201 0.00201	Sep-12-17 08:15 Sep-12-17 12:09 mg/kg RL <0.00199 0.00199
Benzene								
Toluene								
Ethylbenzene								
m,p-Xylenes								
o-Xylene								
Total Xylenes								
Total BTEX								
Inorganic Anions by EPA 300/300.1		Extracted: Analyzed: Units/RL:	Sep-14-17 12:00 Sep-14-17 19:29 mg/kg RL <5.00 5.00	Sep-14-17 12:00 Sep-14-17 19:37 mg/kg RL <5.00 5.00	Sep-14-17 12:00 Sep-14-17 19:45 mg/kg RL <5.00 5.00	Sep-14-17 12:00 Sep-14-17 19:53 mg/kg RL <5.00 5.00	Sep-14-17 12:00 Sep-14-17 20:01 mg/kg RL <5.00 5.00	Sep-14-17 12:00 Sep-14-17 20:26 mg/kg RL <5.00 5.00
Chloride								
TPH By SW8015 Mod		Extracted: Analyzed: Units/RL:	Sep-11-17 17:00 Sep-12-17 01:32 mg/kg RL <14.9 14.9	Sep-11-17 17:00 Sep-12-17 01:53 mg/kg RL <15.0 15.0	Sep-11-17 17:00 Sep-12-17 02:13 mg/kg RL <14.9 14.9	Sep-11-17 17:00 Sep-12-17 02:33 mg/kg RL <15.0 15.0	Sep-11-17 17:00 Sep-12-17 02:54 mg/kg RL <15.0 15.0	Sep-11-17 17:00 Sep-12-17 03:15 mg/kg RL <15.0 15.0
Gasoline Range Hydrocarbons (GRO)								
Diesel Range Organics (DRO)								
Oil Range Hydrocarbons (ORO)								
Total TPH								

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

Kelsey Brooks
Project Manager



Certificate of Analysis Summary 562387

COG Operating LLC, Artesia, NM

Project Name: Pinto 36 State #1



Date Received in Lab: Fri Sep-08-17 01:45 pm
Report Date: 15-SEP-17
Project Manager: Kelsey Brooks

Project Id: Aaron Lieb
Contact: Pinto 36 State #1
Project Location:

Analysis Requested		Lab Id:	562387-007	562387-008			
		Field Id:	West - Surface	West -1'			
		Depth:		1- ft			
		Matrix:	SOIL	SOIL			
		Sampled:	Sep-06-17 11:40	Sep-06-17 11:45			
BTEX by EPA 8021B	Extracted:	Sep-12-17 08:15	Sep-12-17 08:15	Sep-12-17 08:15			
	Analyzed:	Sep-12-17 12:28	Sep-12-17 12:28	Sep-12-17 12:47			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201			
		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201			
Benzene			<0.00399 0.00399	<0.00402 0.00402			
Toluene			<0.00200 0.00200	<0.00201 0.00201			
Ethylbenzene			<0.00200 0.00200	<0.00201 0.00201			
m,p-Xylenes			<0.00200 0.00200	<0.00201 0.00201			
o-Xylene			<0.00200 0.00200	<0.00201 0.00201			
Total Xylenes			<0.00200 0.00200	<0.00201 0.00201			
Total BTEX			<0.00200 0.00200	<0.00201 0.00201			
Inorganic Anions by EPA 300/300.1	Extracted:	Sep-14-17 12:00	Sep-14-17 12:00	Sep-14-17 12:00			
	Analyzed:	Sep-14-17 20:50	Sep-14-17 20:50	Sep-14-17 20:59			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride			66.0 5.00	7.23 5.00			
TPH By SW8015 Mod	Extracted:	Sep-11-17 17:00	Sep-11-17 17:00	Sep-11-17 17:00			
	Analyzed:	Sep-12-17 03:34	Sep-12-17 03:34	Sep-12-17 03:56			
	Units/RL:	mg/kg 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

Kelsey Brooks
Project Manager

Analytical Report 562387

**for
COG Operating LLC**

**Project Manager: Aaron Lieb
Pinto 36 State #1**

15-SEP-17

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
Oklahoma (9218)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295)

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

Xenco-San Antonio: Texas (T104704534)

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

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



15-SEP-17

Project Manager: **Aaron Lieb**
COG Operating LLC
2407 Pecos Avenue
Artesia, NM 88210

Reference: XENCO Report No(s): **562387**
Pinto 36 State #1
Project Address: Pinto 36 State #1

Aaron Lieb:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 562387. 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. 562387 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 562387



COG Operating LLC, Artesia, NM

Pinto 36 State #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
North - Surface	S	09-06-17 11:00		562387-001
North - 1'	S	09-06-17 11:10	1 ft	562387-002
South - Surface	S	09-06-17 11:15		562387-003
South - 1'	S	09-06-17 11:20	1 ft	562387-004
East - Surface	S	09-06-17 11:30		562387-005
East - 1'	S	09-06-17 11:35	1 ft	562387-006
West - Surface	S	09-06-17 11:40	ft	562387-007
West -1'	S	09-06-17 11:45	1 ft	562387-008



CASE NARRATIVE

Client Name: COG Operating LLC

Project Name: Pinto 36 State #1

Project ID:

Work Order Number(s): 562387

Report Date: 15-SEP-17

Date Received: 09/08/2017

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3027292 BTEX by EPA 8021B

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

Batch: LBA-3027439 BTEX by EPA 8021B

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



Certificate of Analytical Results 562387



COG Operating LLC, Artesia, NM

Pinto 36 State #1

Sample Id: North - Surface

Matrix: Soil

Date Received: 09.08.17 13.45

Lab Sample Id: 562387-001

Date Collected: 09.06.17 11.00

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MNV

% Moisture:

Analyst: MNV

Date Prep: 09.14.17 12.00

Basis: Wet Weight

Seq Number: 3027673

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	09.14.17 19.29	U	1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 09.11.17 17.00

Basis: Wet Weight

Seq Number: 3027282

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	09.12.17 01.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	09.12.17 01.32	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9	mg/kg	09.12.17 01.32	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	09.12.17 01.32	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	92	%	70-135	09.12.17 01.32		
o-Terphenyl	84-15-1	89	%	70-135	09.12.17 01.32		



Certificate of Analytical Results 562387



COG Operating LLC, Artesia, NM

Pinto 36 State #1

Sample Id: North - Surface

Matrix: Soil

Date Received: 09.08.17 13.45

Lab Sample Id: 562387-001

Date Collected: 09.06.17 11.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.11.17 14.00

Basis: Wet Weight

Seq Number: 3027292

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.12.17 03.26	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.12.17 03.26	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.12.17 03.26	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.12.17 03.26	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.12.17 03.26	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.12.17 03.26	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.12.17 03.26	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	89	%	80-120	09.12.17 03.26		
1,4-Difluorobenzene	540-36-3	91	%	80-120	09.12.17 03.26		



Certificate of Analytical Results 562387



COG Operating LLC, Artesia, NM

Pinto 36 State #1

Sample Id: North - 1'

Lab Sample Id: 562387-002

Matrix: Soil

Date Collected: 09.06.17 11.10

Date Received: 09.08.17 13.45

Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MNV

Analyst: MNV

Seq Number: 3027673

Date Prep: 09.14.17 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	09.14.17 19.37	U	1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3027282

Date Prep: 09.11.17 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.12.17 01.53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.12.17 01.53	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	09.12.17 01.53	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.12.17 01.53	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	97	%	70-135	09.12.17 01.53		
o-Terphenyl	84-15-1	97	%	70-135	09.12.17 01.53		



Certificate of Analytical Results 562387



COG Operating LLC, Artesia, NM

Pinto 36 State #1

Sample Id: North - 1'

Lab Sample Id: 562387-002

Matrix: Soil

Date Collected: 09.06.17 11.10

Date Received: 09.08.17 13.45

Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3027292

Date Prep: 09.11.17 14.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	09.12.17 03.44	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	09.12.17 03.44	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	09.12.17 03.44	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	09.12.17 03.44	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	09.12.17 03.44	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	09.12.17 03.44	U	1
Total BTEX		<0.00198	0.00198	mg/kg	09.12.17 03.44	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	93	%	80-120	09.12.17 03.44		
4-Bromofluorobenzene	460-00-4	89	%	80-120	09.12.17 03.44		



Certificate of Analytical Results 562387



COG Operating LLC, Artesia, NM Pinto 36 State #1

Sample Id: **South - Surface**
Lab Sample Id: 562387-003

Matrix: Soil
Date Collected: 09.06.17 11.15

Date Received: 09.08.17 13.45

Analytical Method: Inorganic Anions by EPA 300/300.1
Tech: MNV
Analyst: MNV
Seq Number: 3027673

Prep Method: E300P
% Moisture:
Date Prep: 09.14.17 12.00
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	09.14.17 19.45	U	1

Analytical Method: TPH By SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3027282

Prep Method: TX1005P
% Moisture:
Date Prep: 09.11.17 17.00
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	09.12.17 02.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	09.12.17 02.13	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9	mg/kg	09.12.17 02.13	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	09.12.17 02.13	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	100	%	70-135	09.12.17 02.13		
o-Terphenyl	84-15-1	98	%	70-135	09.12.17 02.13		



Certificate of Analytical Results 562387



COG Operating LLC, Artesia, NM

Pinto 36 State #1

Sample Id: **South - Surface**

Matrix: **Soil**

Date Received: 09.08.17 13.45

Lab Sample Id: 562387-003

Date Collected: 09.06.17 11.15

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: **ALJ**

% Moisture:

Analyst: **ALJ**

Date Prep: **09.11.17 14.00**

Basis: **Wet Weight**

Seq Number: 3027292

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.12.17 04.02	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.12.17 04.02	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.12.17 04.02	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	09.12.17 04.02	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.12.17 04.02	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.12.17 04.02	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.12.17 04.02	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	82	%	80-120	09.12.17 04.02		
1,4-Difluorobenzene	540-36-3	99	%	80-120	09.12.17 04.02		



Certificate of Analytical Results 562387



COG Operating LLC, Artesia, NM

Pinto 36 State #1

Sample Id: **South - 1'**

Matrix: **Soil**

Date Received: 09.08.17 13.45

Lab Sample Id: 562387-004

Date Collected: 09.06.17 11.20

Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: **MNV**

% Moisture:

Analyst: **MNV**

Date Prep: 09.14.17 12.00

Basis: **Wet Weight**

Seq Number: 3027673

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	09.14.17 19.53	U	1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: **ARM**

% Moisture:

Analyst: **ARM**

Date Prep: 09.11.17 17.00

Basis: **Wet Weight**

Seq Number: 3027282

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.12.17 02.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.12.17 02.33	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	09.12.17 02.33	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.12.17 02.33	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	98	%	70-135	09.12.17 02.33		
o-Terphenyl	84-15-1	96	%	70-135	09.12.17 02.33		



Certificate of Analytical Results 562387



COG Operating LLC, Artesia, NM

Pinto 36 State #1

Sample Id: **South - 1'**

Matrix: **Soil**

Date Received: 09.08.17 13.45

Lab Sample Id: 562387-004

Date Collected: 09.06.17 11.20

Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: **ALJ**

% Moisture:

Analyst: **ALJ**

Date Prep: 09.11.17 14.00

Basis: **Wet Weight**

Seq Number: 3027292

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	09.12.17 04.21	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	09.12.17 04.21	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	09.12.17 04.21	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	09.12.17 04.21	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	09.12.17 04.21	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	09.12.17 04.21	U	1
Total BTEX		<0.00202	0.00202	mg/kg	09.12.17 04.21	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	86	%	80-120	09.12.17 04.21		
1,4-Difluorobenzene	540-36-3	94	%	80-120	09.12.17 04.21		



Certificate of Analytical Results 562387



COG Operating LLC, Artesia, NM

Pinto 36 State #1

Sample Id: East - Surface

Matrix: Soil

Date Received: 09.08.17 13.45

Lab Sample Id: 562387-005

Date Collected: 09.06.17 11.30

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MNV

% Moisture:

Analyst: MNV

Date Prep: 09.14.17 12.00

Basis: Wet Weight

Seq Number: 3027673

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	09.14.17 20.01	U	1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 09.11.17 17.00

Basis: Wet Weight

Seq Number: 3027282

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.12.17 02.54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.12.17 02.54	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	09.12.17 02.54	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.12.17 02.54	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	100	%	70-135	09.12.17 02.54		
o-Terphenyl	84-15-1	99	%	70-135	09.12.17 02.54		



Certificate of Analytical Results 562387



COG Operating LLC, Artesia, NM

Pinto 36 State #1

Sample Id: East - Surface

Matrix: Soil

Date Received: 09.08.17 13.45

Lab Sample Id: 562387-005

Date Collected: 09.06.17 11.30

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.11.17 14.00

Basis: Wet Weight

Seq Number: 3027292

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	09.12.17 04.39	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	09.12.17 04.39	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	09.12.17 04.39	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	09.12.17 04.39	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	09.12.17 04.39	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	09.12.17 04.39	U	1
Total BTEX		<0.00201	0.00201	mg/kg	09.12.17 04.39	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	94		%	80-120	09.12.17 04.39	
4-Bromofluorobenzene	460-00-4	87		%	80-120	09.12.17 04.39	



Certificate of Analytical Results 562387



COG Operating LLC, Artesia, NM

Pinto 36 State #1

Sample Id: East - 1'
Lab Sample Id: 562387-006

Matrix: Soil
Date Collected: 09.06.17 11.35

Date Received: 09.08.17 13.45
Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MNV

Analyst: MNV

Seq Number: 3027673

Date Prep: 09.14.17 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	09.14.17 20.26	U	1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3027282

Date Prep: 09.11.17 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.12.17 03.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.12.17 03.15	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	09.12.17 03.15	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.12.17 03.15	U	1

Surrogate

1-Chlorooctane

o-Terphenyl

Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
111-85-3	94	%	70-135	09.12.17 03.15	
84-15-1	93	%	70-135	09.12.17 03.15	



Certificate of Analytical Results 562387



COG Operating LLC, Artesia, NM

Pinto 36 State #1

Sample Id: East - 1'
Lab Sample Id: 562387-006

Matrix: Soil
Date Collected: 09.06.17 11.35

Date Received: 09.08.17 13.45
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3027439

Date Prep: 09.12.17 08.15

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.12.17 12.09	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.12.17 12.09	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.12.17 12.09	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.12.17 12.09	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.12.17 12.09	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.12.17 12.09	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.12.17 12.09	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	83	%	80-120	09.12.17 12.09		
1,4-Difluorobenzene	540-36-3	97	%	80-120	09.12.17 12.09		



Certificate of Analytical Results 562387



COG Operating LLC, Artesia, NM

Pinto 36 State #1

Sample Id: West - Surface

Matrix: Soil

Date Received: 09.08.17 13.45

Lab Sample Id: 562387-007

Date Collected: 09.06.17 11.40

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MNV

% Moisture:

Analyst: MNV

Date Prep: 09.14.17 12.00

Basis: Wet Weight

Seq Number: 3027673

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	66.0	5.00	mg/kg	09.14.17 20.50		1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 09.11.17 17.00

Basis: Wet Weight

Seq Number: 3027282

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.12.17 03.34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.12.17 03.34	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	09.12.17 03.34	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.12.17 03.34	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	101	%	70-135	09.12.17 03.34		
o-Terphenyl	84-15-1	100	%	70-135	09.12.17 03.34		



Certificate of Analytical Results 562387



COG Operating LLC, Artesia, NM

Pinto 36 State #1

Sample Id: West - Surface

Matrix: Soil

Date Received: 09.08.17 13.45

Lab Sample Id: 562387-007

Date Collected: 09.06.17 11.40

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.12.17 08.15

Basis: Wet Weight

Seq Number: 3027439

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.12.17 12.28	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.12.17 12.28	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.12.17 12.28	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	09.12.17 12.28	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.12.17 12.28	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.12.17 12.28	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.12.17 12.28	U	1
Surrogate							
	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	95	%	80-120	09.12.17 12.28		
4-Bromofluorobenzene	460-00-4	83	%	80-120	09.12.17 12.28		



Certificate of Analytical Results 562387



COG Operating LLC, Artesia, NM

Pinto 36 State #1

Sample Id: West -1'

Matrix: Soil

Date Received: 09.08.17 13.45

Lab Sample Id: 562387-008

Date Collected: 09.06.17 11.45

Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MNV

% Moisture:

Analyst: MNV

Date Prep: 09.14.17 12.00

Basis: Wet Weight

Seq Number: 3027673

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7.23	5.00	mg/kg	09.14.17 20.59		1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 09.11.17 17.00

Basis: Wet Weight

Seq Number: 3027282

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.12.17 03.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.12.17 03.56	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	09.12.17 03.56	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.12.17 03.56	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	98	%	70-135	09.12.17 03.56		
o-Terphenyl	84-15-1	97	%	70-135	09.12.17 03.56		



Certificate of Analytical Results 562387



COG Operating LLC, Artesia, NM

Pinto 36 State #1

Sample Id: West -1'
Lab Sample Id: 562387-008

Matrix: Soil
Date Collected: 09.06.17 11.45

Date Received: 09.08.17 13.45
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3027439

Date Prep: 09.12.17 08.15

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	09.12.17 12.47	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	09.12.17 12.47	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	09.12.17 12.47	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	09.12.17 12.47	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	09.12.17 12.47	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	09.12.17 12.47	U	1
Total BTEX		<0.00201	0.00201	mg/kg	09.12.17 12.47	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	96		%	80-120	09.12.17 12.47	
4-Bromofluorobenzene	460-00-4	83		%	80-120	09.12.17 12.47	



Flagging Criteria



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

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(210) 509-3334	(210) 509-3335
(432) 563-1800	(432) 563-1713
(602) 437-0330	



QC Summary 562387

COG Operating LLC

Pinto 36 State #1

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3027673

Matrix: Solid

Prep Method: E300P

Date Prep: 09.14.17

MB Sample Id: 730954-1-BLK

LCS Sample Id: 730954-1-BKS

LCSD Sample Id: 730954-1-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	258	103	258	103	90-110	0	20	mg/kg	09.14.17 17:07	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3027673

Matrix: Soil

Prep Method: E300P

Date Prep: 09.14.17

Parent Sample Id: 562387-006

MS Sample Id: 562387-006 S

MSD Sample Id: 562387-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	262	105	262	105	90-110	0	20	mg/kg	09.14.17 20:34	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3027673

Matrix: Soil

Prep Method: E300P

Date Prep: 09.14.17

Parent Sample Id: 562392-001

MS Sample Id: 562392-001 S

MSD Sample Id: 562392-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	3330	250	3560	92	3570	96	90-110	0	20	mg/kg	09.14.17 17:32	

Analytical Method: TPH By SW8015 Mod

Seq Number: 3027282

Matrix: Solid

Prep Method: TX1005P

Date Prep: 09.11.17

MB Sample Id: 730741-1-BLK

LCS Sample Id: 730741-1-BKS

LCSD Sample Id: 730741-1-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	1190	119	1020	102	70-135	15	35	mg/kg	09.11.17 19:25	
Diesel Range Organics (DRO)	<15.0	1000	1180	118	1150	115	70-135	3	35	mg/kg	09.11.17 19:25	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	128		121		106		70-135	%	09.11.17 19:25
o-Terphenyl	129		118		105		70-135	%	09.11.17 19:25



QC Summary 562387

COG Operating LLC Pinto 36 State #1

Analytical Method: TPH By SW8015 Mod

Seq Number: 3027282

Parent Sample Id: 562309-001

Matrix: Soil

MS Sample Id: 562309-001 S

Prep Method: TX1005P

Date Prep: 09.11.17

MSD Sample Id: 562309-001 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	998	1040	104	1070	107	70-135	3	35	mg/kg	09.11.17 20:25	
Diesel Range Organics (DRO)	<15.0	998	1110	111	1190	119	70-135	7	35	mg/kg	09.11.17 20:25	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	101		115		70-135	%	09.11.17 20:25
o-Terphenyl	94		107		70-135	%	09.11.17 20:25

Analytical Method: BTEX by EPA 8021B

Seq Number: 3027292

MB Sample Id: 730734-1-BLK

Matrix: Solid

LCS Sample Id: 730734-1-BKS

Prep Method: SW5030B

Date Prep: 09.11.17

LCSD Sample Id: 730734-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.106	105	0.106	106	70-130	0	35	mg/kg	09.11.17 20:57	
Toluene	<0.00202	0.101	0.100	99	0.100	100	70-130	0	35	mg/kg	09.11.17 20:57	
Ethylbenzene	<0.00202	0.101	0.0995	99	0.0991	99	71-129	0	35	mg/kg	09.11.17 20:57	
m,p-Xylenes	<0.00403	0.202	0.193	96	0.192	96	70-135	1	35	mg/kg	09.11.17 20:57	
o-Xylene	<0.00202	0.101	0.0941	93	0.0931	93	71-133	1	35	mg/kg	09.11.17 20:57	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	93		97		96		80-120	%	09.11.17 20:57
4-Bromofluorobenzene	86		92		89		80-120	%	09.11.17 20:57

Analytical Method: BTEX by EPA 8021B

Seq Number: 3027439

MB Sample Id: 730824-1-BLK

Matrix: Solid

LCS Sample Id: 730824-1-BKS

Prep Method: SW5030B

Date Prep: 09.12.17

LCSD Sample Id: 730824-1-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	0.109	109	0.106	106	70-130	3	35	mg/kg	09.12.17 09:32	
Toluene	<0.00200	0.100	0.103	103	0.100	100	70-130	3	35	mg/kg	09.12.17 09:32	
Ethylbenzene	<0.00200	0.100	0.101	101	0.0987	99	71-129	2	35	mg/kg	09.12.17 09:32	
m,p-Xylenes	<0.00401	0.200	0.196	98	0.192	96	70-135	2	35	mg/kg	09.12.17 09:32	
o-Xylene	<0.00200	0.100	0.0948	95	0.0928	93	71-133	2	35	mg/kg	09.12.17 09:32	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	93		95		95		80-120	%	09.12.17 09:32
4-Bromofluorobenzene	83		89		90		80-120	%	09.12.17 09:32



QC Summary 562387

COG Operating LLC

Pinto 36 State #1

Analytical Method: BTEX by EPA 8021B

Seq Number: 3027292

Parent Sample Id: 562388-001

Matrix: Soil

MS Sample Id: 562388-001 S

Prep Method: SW5030B

Date Prep: 09.11.17

MSD Sample Id: 562388-001 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	0.0733	73	0.0791	79	70-130	8	35	mg/kg	09.11.17 21:35	
Toluene	<0.00200	0.100	0.0618	62	0.0692	69	70-130	11	35	mg/kg	09.11.17 21:35	X
Ethylbenzene	<0.00200	0.100	0.0549	55	0.0587	59	71-129	7	35	mg/kg	09.11.17 21:35	X
m,p-Xylenes	<0.00400	0.200	0.103	52	0.109	54	70-135	6	35	mg/kg	09.11.17 21:35	X
o-Xylene	<0.00200	0.100	0.0553	55	0.0565	57	71-133	2	35	mg/kg	09.11.17 21:35	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		98		80-120	%	09.11.17 21:35
4-Bromofluorobenzene	87		91		80-120	%	09.11.17 21:35

Analytical Method: BTEX by EPA 8021B

Seq Number: 3027439

Parent Sample Id: 562388-002

Matrix: Soil

MS Sample Id: 562388-002 S

Prep Method: SW5030B

Date Prep: 09.12.17

MSD Sample Id: 562388-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.102	101	0.0862	85	70-130	17	35	mg/kg	09.12.17 10:10	
Toluene	<0.00202	0.101	0.0835	83	0.0786	78	70-130	6	35	mg/kg	09.12.17 10:10	
Ethylbenzene	<0.00202	0.101	0.0725	72	0.0723	72	71-129	0	35	mg/kg	09.12.17 10:10	
m,p-Xylenes	<0.00404	0.202	0.134	66	0.138	69	70-135	3	35	mg/kg	09.12.17 10:10	X
o-Xylene	0.00251	0.101	0.0682	65	0.0695	66	71-133	2	35	mg/kg	09.12.17 10:10	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	119		96		80-120	%	09.12.17 10:10
4-Bromofluorobenzene	84		89		80-120	%	09.12.17 10:10



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

CHAIN OF CUSTODY

Page 1 of 1

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

Phoenix, Arizona (480-355-0900)

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Client / Reporting Information				Project Information				Xenco Quote #		Xenco Job #								
Company Name / Branch: COG Operating LLC				Project Name/Number: Pinto 36 State #1				Analytical Information		Matrix Codes								
Company Address: 2407 PECOS Avenue Artesia NM 88210				Project Location: Pinto 36 State #1														
Email: alibb@concho.com daniel@concho.com thaskel@concho.com				Phone No: 575-746-1553				Invoice To: COG Operating LLC Attn: Robert McNeill 600 W. Illinois Midland TX 79701										
Project Contact: Aaron Lieb				PO Number:														
Sampler's Name: Aaron Lieb																		
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MeOH	NONE	TPH/ EXTENDED	BTEX	Chloride	Field Comments
1	North - Surf	Surf	9/8/17	11:00 am	S	1									X	X	X	
2	North - 1'	1'		11:10 am		1									X	X	X	
3	South - Surf	Surf		11:15 am		1									X	X	X	
4	South - 1'	1'		11:20 am		1									X	X	X	
5	East - Surf	Surf		11:30 am		1									X	X	X	
6	East - 1'	1'		11:35 am		1									X	X	X	
7	West - Surf	Surf		11:40 am		1									X	X	X	
8	West - 1'	1'		11:45 am		1									X	X	X	
9																		
10																		
Turnaround Time (Business days)																		
Data Deliverable Information																		
Notes:																		
TAT Starts Day received by Lab, if received by 5:00 pm																		
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY																		
FED-EX / UPS: Tracking #																		
Relinquished by Sampler: [Signature] Date Time: 9/8/17 11:50 AM Received By: [Signature] Date Time: 9-8-17 145																		
Relinquished by: [Signature] Date Time: 9/8/17 11:50 AM Received By: [Signature] Date Time: 9-8-17 145																		
Relinquished by: [Signature] Date Time: 9/8/17 11:50 AM Received By: [Signature] Date Time: 9-8-17 145																		
Temp: 4.2 IR ID: R-8																		
CF: (0-6: -0.2°C)																		
(6-23: +0.2°C)																		
Corrected Temp: 4.0																		



XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In



Client: COG Operating LLC

Date/ Time Received: 09/08/2017 01:45:00 PM

Work Order #: 562387

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)?	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:

Jessica Kramer

Jessica Kramer

Date: 09/11/2017

Checklist reviewed by:

Kelsey Brooks

Kelsey Brooks

Date: 09/11/2017