

September 18, 2017

Mike Bratcher
Oil Conservation Division
District 2 – Artesia
811 S. First St.
Artesia, NM 88210

Henryetta Price
Bureau of Land Management
620 E. Greene St.
Carlsbad, NM 88220

**Re: Work Plan
Woolley Federal Tank Battery (2RP-4279)
Unit Letter C, Section 28, Township 17S, Range 30E
Eddy County, NM**

Mr. Mike Bratcher/Ms. Price,

COG Operating LLC is pleased to submit for your consideration the following work plan for the Woolley Federal Tank Battery. The work plan is in response to a crude oil and produced water release that occurred on June 27, 2017. Subsequent to the release a C-141 Initial Report was submitted to the New Mexico Oil Conservation Division (NMOCD) and the Bureau of Land Management (BLM) on June 27, 2017.

BACKGROUND

This release was caused by a one-inch (1") drain on the transfer pump filter casing. All fluid was contained within the unlined bermed area. A vacuum truck was dispatched to remove any standing fluids and a crew was dispatched to shovel and remove the top two (2) feet of impacted soil. The impacted material was hauled to an NMOCD approved disposal facility.

SITE RANKING

A groundwater database maintained by the New Mexico Office of the State Engineer (NMOSE) did not identify any registered water wells in Section 28, Township 17S, Range 30E. The Chevron Trend Map utilized by the NMOCD Artesia District II Office indicates depth to groundwater is approximately 275 feet below ground surface (bgs). No water wells or surface water was observed within 1,000 feet of the release site. Based

on the NMOCD ranking criteria, the release area would be classified at a site ranking of zero (0).

Analytical Results

On July 27, 2017, COG personnel collected six (6) soil samples from the subject area. Only one (1) trench was installed within the firewall due to the close proximity of production equipment and corresponding safety concerns. Soil samples were collected at depths ranging from surface to six (6) feet bgs. The soil samples were submitted to a laboratory for analysis of benzene, toluene, ethylbenzene and xylenes (BTEX), total petroleum hydrocarbons (TPH) and chloride.

Analytical results indicate TPH and BTEX concentrations are within the recommended remedial action levels (RRAL) for a site ranking of zero (0). Chloride concentrations in the T1 sampling area were elevated to a depth of one (1) foot bgs (see attached site diagram). The T1 surface sample exhibited a chloride concentration of 4,250 mg/Kg and the T1 one (1) foot sample exhibited a chloride concentration of 640 mg/Kg.

Site Ranking: Zero						
Depth to GW per SEO: >275'						
T1	DRO	GRO	ORO	TPH	BTEX	Cl-
Surf	<15	110	28.8	139	0.00745	4250
1'	<15	<15	<15	<15	<0.300	640
2'	<15	<15	<15	<15	<0.300	6.09
3'	<15	<15	<15	<15	<0.300	17
4'	<15	<15	<15	<15	<0.300	14.6
6'	<15	<15	<15	<15	<0.300	9.74
Bold values exceed RRALs per NMOCD Guidelines						

Work Plan

Based on the analytical results of soil samples collected on July 27, 2017, COG proposes the excavation of one (1) foot of material within the facility. The excavated soil will be transported to a NMOCD approved disposal facility and non-impacted soil will be utilized to backfill the excavated area. If there are no objections or further stipulations, COG Operating LLC, would like to begin remediation at this time. Please feel free to contact me with any questions or concerns at (432) 215-2783.

Sincerely,

A handwritten signature in black ink, appearing to read 'D. Neel', with a stylized flourish at the end.

Dakota Neel
HSE Coordinator

Enclosed

- (1) Site Diagram and Summary Table
- (2) Laboratory Analysis
- (3) C-141 Initial (Copy)

Woolley Federal Tank Battery

Woolley Federal Tank Battery

32 810887° - 103 879342°

Legend
 ● Sample Point
 ■ Excavate 1 foot

Site Ranking: Zero

Depth to GW per SEO: >275'

T1	DR0	GRO	ORO	TPH	BTEX	Cl-
Surf	<15	110	28.8	139	0.00745	4250
1'	<15	<15	<15	<15	<0.300	640
2'	<15	<15	<15	<15	<0.300	6.09
3'	<15	<15	<15	<15	<0.300	17
4'	<15	<15	<15	<15	<0.300	14.6
6'	<15	<15	<15	<15	<0.300	9.74

Bold values exceed RRALs per NMOCD Guidelines

WOOLLEY FEDERAL TANK BATTERY



100 ft



Certificate of Analysis Summary 559041
COG Operating LLC, Artesia, NM
Project Name: Woolley Federal Tk Battery



Project Id:

Contact: Aaron Lieb

Project Location:

Date Received in Lab: Tue Aug-01-17 03:06 pm

Report Date: 08-AUG-17

Project Manager: Kelsey Brooks

Analysis Requested		Lab Id:	Field Id:	Depth:	Matrix:	Sampled:	559041-001	559041-002	559041-003	559041-004	559041-005	559041-006
							T1 SOIL	T1 SOIL	T1 SOIL	T1 SOIL	T1 SOIL	T1 SOIL
BTEX by EPA 8021B		Extracted:	Aug-07-17 08:00				Jul-27-17 09:30	Jul-27-17 09:30	Jul-27-17 09:30	Jul-27-17 09:30	Jul-27-17 09:30	Jul-27-17 09:30
		Analyzed:	Aug-07-17 12:20				Aug-04-17 08:15	Aug-04-17 08:15	Aug-07-17 08:00	Aug-07-17 13:35	Aug-04-17 08:15	Aug-04-17 19:52
		Units/RL:	mg/kg	RL			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Benzene			<0.00338	0.00338			<0.00338	<0.00338	<0.00202	<0.00202	<0.00202	<0.00201
Toluene			<0.00338	0.00338			<0.00338	<0.00338	<0.00202	<0.00202	<0.00202	<0.00201
Ethylbenzene			<0.00338	0.00338			<0.00338	<0.00338	<0.00202	<0.00202	<0.00202	<0.00201
m,p-Xylenes			0.00745	0.00676			<0.00338	<0.00338	<0.00404	<0.00404	<0.00404	<0.00402
o-Xylene			<0.00338	0.00338			<0.00338	<0.00338	<0.00202	<0.00202	<0.00202	<0.00201
Total Xylenes			0.00745	0.00338			<0.00338	<0.00338	<0.00202	<0.00202	<0.00202	<0.00201
Total BTEX			0.00745	0.00338			<0.00338	<0.00338	<0.00202	<0.00202	<0.00202	<0.00201
Inorganic Anions by EPA 300/300.1		Extracted:	Aug-04-17 12:00				Aug-04-17 12:00	Aug-04-17 12:00	Aug-04-17 12:00	Aug-04-17 12:00	Aug-04-17 12:00	Aug-04-17 12:00
		Analyzed:	Aug-04-17 14:41				Aug-04-17 14:49	Aug-04-17 14:57	Aug-04-17 15:20	Aug-04-17 15:27	Aug-04-17 15:50	Aug-04-17 15:50
		Units/RL:	mg/kg	RL			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Chloride			4250	49.6			640	5.00	17.0	4.92	14.6	9.74
TPH By SW8015 Mod		Extracted:	Aug-04-17 07:00				Aug-04-17 07:00	Aug-04-17 07:00	Aug-04-17 07:00	Aug-04-17 07:00	Aug-04-17 07:00	Aug-04-17 07:00
		Analyzed:	Aug-04-17 14:58				Aug-04-17 15:19	Aug-04-17 15:40	Aug-04-17 16:00	Aug-04-17 16:21	Aug-04-17 16:41	Aug-04-17 16:41
		Units/RL:	mg/kg	RL			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Gasoline Range Hydrocarbons (GRO)			<15.0	15.0			<14.9	14.9	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)			110	15.0			<14.9	14.9	<15.0	15.0	<15.0	15.0
Oil Range Hydrocarbons (ORO)			28.8	15.0			<14.9	14.9	<15.0	15.0	<15.0	15.0
Total TPH			139	15.0			<14.9	14.9	<15.0	15.0	<15.0	15.0

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

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

Kelsey Brooks

Kelsey Brooks
Project Manager



Certificate of Analysis Summary 559041
COG Operating LLC, Artesia, NM
Project Name: Woolley Federal Tk Battery



Project Id:

Contact: Aaron Lieb

Project Location:

Date Received in Lab: Tue Aug-01-17 03:06 pm

Report Date: 08-AUG-17

Project Manager: Kelsey Brooks

Analysis Requested		Lab Id:	Field Id:	Depth:	Matrix:	Sampled:	559041-007	559041-008	559041-009	559041-010	559041-011
BTEX by EPA 8021B		Extracted:	T1	8- ft	SOIL	Jul-27-17 09:30	Aug-04-17 15:45	Aug-04-17 15:45	Aug-04-17 15:45	Aug-04-17 15:45	Aug-07-17 08:00
		Analyzed:	Aug-07-17 12:57			Aug-05-17 00:11	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		Units/RL:	RL			RL	<0.00199	<0.00199	<0.00199	<0.00199	RL
Benzene							<0.00199	<0.00199	<0.00199	<0.00199	<0.00199
Toluene							<0.00199	<0.00199	<0.00199	<0.00199	<0.00199
Ethylbenzene							<0.00199	<0.00199	<0.00199	<0.00199	<0.00199
m,p-Xylenes							<0.00398	<0.00398	<0.00398	<0.00398	<0.00398
o-Xylene							<0.00199	<0.00199	<0.00199	<0.00199	<0.00199
Total Xylenes							<0.00199	<0.00199	<0.00199	<0.00199	<0.00199
Total BTEX							<0.00199	<0.00199	<0.00199	<0.00199	<0.00199
Inorganic Anions by EPA 300/300.1		Extracted:	Aug-04-17 12:00				Aug-04-17 12:00	Aug-04-17 12:00	Aug-04-17 12:00	Aug-04-17 12:00	Aug-04-17 12:00
		Analyzed:	Aug-04-17 15:58				Aug-04-17 16:06	Aug-04-17 16:13	Aug-04-17 16:21	Aug-04-17 16:29	Aug-04-17 16:29
		Units/RL:	RL				RL	RL	RL	RL	RL
Chloride			98.7	4.91			218	4.90	47.6	164	245
TPH By SW8015 Mod		Extracted:	Aug-04-17 07:00				Aug-04-17 07:00	Aug-04-17 07:00	Aug-04-17 07:00	Aug-04-17 07:00	Aug-04-17 16:00
		Analyzed:	Aug-04-17 17:02				Aug-04-17 17:23	Aug-04-17 17:43	Aug-04-17 18:04	Aug-04-17 22:27	Aug-04-17 22:27
		Units/RL:	RL				RL	RL	RL	RL	RL
Gasoline Range Hydrocarbons (GRO)			<15.0	15.0			<15.0	<15.0	<15.0	<15.0	<15.0
Diesel Range Organics (DRO)			<15.0	15.0			<15.0	<15.0	<15.0	<15.0	<15.0
Oil Range Hydrocarbons (ORO)			<15.0	15.0			<15.0	<15.0	<15.0	<15.0	<15.0
Total TPH			<15.0	15.0			<15.0	<15.0	<15.0	<15.0	<15.0

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 in writing.

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

Kelsey Brooks

Kelsey Brooks
Project Manager

Analytical Report 559041

**for
COG Operating LLC**

**Project Manager: Aaron Lieb
Woolley Federal Tk Battery**

08-AUG-17

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

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

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400)
Xenco-San Antonio: Texas (T104704534)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)



08-AUG-17

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

Reference: XENCO Report No(s): 559041
Woolley Federal Tk Battery
Project Address:

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) 559041. 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. 559041 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 559041



COG Operating LLC, Artesia, NM

Woolley Federal Tk Battery

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Tl	S	07-27-17 09:30		559041-001
Tl	S	07-27-17 09:30	1 ft	559041-002
Tl	S	07-27-17 09:30	2 ft	559041-003
Tl	S	07-27-17 09:30	3 ft	559041-004
Tl	S	07-27-17 09:30	4 ft	559041-005
Tl	S	07-27-17 09:30	6 ft	559041-006
Tl	S	07-27-17 09:30	8 ft	559041-007
Tl	S	07-27-17 09:30	10 ft	559041-008
Tl	S	07-27-17 09:30	12 ft	559041-009
Tl	S	07-27-17 09:30	14 ft	559041-010
Tl	S	07-27-17 09:30	16 ft	559041-011



CASE NARRATIVE

Client Name: COG Operating LLC

Project Name: Woolley Federal Tk Battery

Project ID:

Work Order Number(s): 559041

Report Date: 08-AUG-17

Date Received: 08/01/2017

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3024166 BTEX by EPA 8021B

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

Batch: LBA-3024179 BTEX by EPA 8021B

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

Batch: LBA-3024257 BTEX by EPA 8021B

Lab Sample ID 559041-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Ethylbenzene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Benzene, Toluene recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 559041-001, -003, -005, -007, -011. The Laboratory Control Sample for Toluene, Benzene, 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.



Certificate of Analytical Results 559041



COG Operating LLC, Artesia, NM Woolley Federal Tk Battery

Sample Id: T1 Matrix: Soil Date Received: 08.01.17 15.06
Lab Sample Id: 559041-001 Date Collected: 07.27.17 09.30
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 08.04.17 12.00 Basis: Wet Weight
Seq Number: 3024184

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4250	49.6	mg/kg	08.04.17 14.41		10

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 08.04.17 07.00 Basis: Wet Weight
Seq Number: 3024174

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.04.17 14.58	U	1
Diesel Range Organics (DRO)	C10C28DRO	110	15.0	mg/kg	08.04.17 14.58		1
Oil Range Hydrocarbons (ORO)	PHCG2835	28.8	15.0	mg/kg	08.04.17 14.58		1
Total TPH	PHC635	139	15.0	mg/kg	08.04.17 14.58		1
Surrogate							
	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	125	%	70-135	08.04.17 14.58		
o-Terphenyl	84-15-1	93	%	70-135	08.04.17 14.58		



Certificate of Analytical Results 559041



COG Operating LLC, Artesia, NM Woolley Federal Tk Battery

Sample Id: T1
Lab Sample Id: 559041-001

Matrix: Soil
Date Collected: 07.27.17 09.30

Date Received: 08.01.17 15.06

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.07.17 08.00

Basis: Wet Weight

Seq Number: 3024257

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00338	0.00338	mg/kg	08.07.17 12.20	U	1
Toluene	108-88-3	<0.00338	0.00338	mg/kg	08.07.17 12.20	U	1
Ethylbenzene	100-41-4	<0.00338	0.00338	mg/kg	08.07.17 12.20	U	1
m,p-Xylenes	179601-23-1	0.00745	0.00676	mg/kg	08.07.17 12.20		1
o-Xylene	95-47-6	<0.00338	0.00338	mg/kg	08.07.17 12.20	U	1
Total Xylenes	1330-20-7	0.00745	0.00338	mg/kg	08.07.17 12.20		1
Total BTEX		0.00745	0.00338	mg/kg	08.07.17 12.20		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	97	%	80-120	08.07.17 12.20		
4-Bromofluorobenzene	460-00-4	113	%	80-120	08.07.17 12.20		



Certificate of Analytical Results 559041



COG Operating LLC, Artesia, NM Woolley Federal Tk Battery

Sample Id: T1
Lab Sample Id: 559041-002

Matrix: Soil
Date Collected: 07.27.17 09.30

Date Received: 08.01.17 15.06
Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MGO

Analyst: MGO

Seq Number: 3024184

Date Prep: 08.04.17 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	640	4.94	mg/kg	08.04.17 14.49		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3024174

Date Prep: 08.04.17 07.00

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	08.04.17 15.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	08.04.17 15.19	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9	mg/kg	08.04.17 15.19	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	08.04.17 15.19	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	123	%	70-135	08.04.17 15.19		
o-Terphenyl	84-15-1	91	%	70-135	08.04.17 15.19		



Certificate of Analytical Results 559041



COG Operating LLC, Artesia, NM Woolley Federal Tk Battery

Sample Id: T1
Lab Sample Id: 559041-002

Matrix: Soil
Date Collected: 07.27.17 09.30

Date Received: 08.01.17 15.06
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B
Tech: ALJ
Analyst: ALJ
Seq Number: 3024166

Prep Method: SW5030B
% Moisture:
Date Prep: 08.04.17 08.15
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.04.17 17.06	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.04.17 17.06	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.04.17 17.06	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.04.17 17.06	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.04.17 17.06	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.04.17 17.06	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.04.17 17.06	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	108	%	80-120	08.04.17 17.06		
1,4-Difluorobenzene	540-36-3	96	%	80-120	08.04.17 17.06		



Certificate of Analytical Results 559041



COG Operating LLC, Artesia, NM Woolley Federal Tk Battery

Sample Id: T1
Lab Sample Id: 559041-003

Matrix: Soil
Date Collected: 07.27.17 09.30

Date Received: 08.01.17 15.06
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MGO

Analyst: MGO

Seq Number: 3024184

Date Prep: 08.04.17 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.09	5.00	mg/kg	08.04.17 14.57		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3024174

Date Prep: 08.04.17 07.00

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	08.04.17 15.40	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	08.04.17 15.40	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9	mg/kg	08.04.17 15.40	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	08.04.17 15.40	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	123	%	70-135	08.04.17 15.40		
o-Terphenyl	84-15-1	91	%	70-135	08.04.17 15.40		



Certificate of Analytical Results 559041



COG Operating LLC, Artesia, NM Woolley Federal Tk Battery

Sample Id: T1
Lab Sample Id: 559041-003

Matrix: Soil
Date Collected: 07.27.17 09.30

Date Received: 08.01.17 15.06
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3024257

Date Prep: 08.07.17 08.00

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	08.07.17 18.36	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	08.07.17 18.36	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	08.07.17 18.36	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	08.07.17 18.36	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	08.07.17 18.36	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	08.07.17 18.36	U	1
Total BTEX		<0.00201	0.00201	mg/kg	08.07.17 18.36	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	101	%	80-120	08.07.17 18.36		
4-Bromofluorobenzene	460-00-4	110	%	80-120	08.07.17 18.36		



Certificate of Analytical Results 559041



COG Operating LLC, Artesia, NM Woolley Federal Tk Battery

Sample Id: T1 Matrix: Soil Date Received: 08.01.17 15.06
Lab Sample Id: 559041-004 Date Collected: 07.27.17 09.30 Sample Depth: 3 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 08.04.17 12.00 Basis: Wet Weight
Seq Number: 3024184

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	17.0	4.92	mg/kg	08.04.17 15.20		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 08.04.17 07.00 Basis: Wet Weight
Seq Number: 3024174

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.04.17 16.00	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.04.17 16.00	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.04.17 16.00	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.04.17 16.00	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	124	%	70-135	08.04.17 16.00		
o-Terphenyl	84-15-1	92	%	70-135	08.04.17 16.00		



Certificate of Analytical Results 559041



COG Operating LLC, Artesia, NM Woolley Federal Tk Battery

Sample Id: T1
Lab Sample Id: 559041-004

Matrix: Soil
Date Collected: 07.27.17 09.30

Date Received: 08.01.17 15.06
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3024166

Date Prep: 08.04.17 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	08.04.17 19.15	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	08.04.17 19.15	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	08.04.17 19.15	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	08.04.17 19.15	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	08.04.17 19.15	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	08.04.17 19.15	U	1
Total BTEX		<0.00202	0.00202	mg/kg	08.04.17 19.15	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	108	%	80-120	08.04.17 19.15		
1,4-Difluorobenzene	540-36-3	100	%	80-120	08.04.17 19.15		



Certificate of Analytical Results 559041



COG Operating LLC, Artesia, NM Woolley Federal Tk Battery

Sample Id: T1
Lab Sample Id: 559041-005

Matrix: Soil
Date Collected: 07.27.17 09.30

Date Received: 08.01.17 15.06
Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MGO

Analyst: MGO

Seq Number: 3024184

Date Prep: 08.04.17 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	14.6	4.98	mg/kg	08.04.17 15.27		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3024174

Date Prep: 08.04.17 07.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.04.17 16.21	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.04.17 16.21	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.04.17 16.21	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.04.17 16.21	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	125	%	70-135	08.04.17 16.21		
o-Terphenyl	84-15-1	91	%	70-135	08.04.17 16.21		



Certificate of Analytical Results 559041



COG Operating LLC, Artesia, NM Woolley Federal Tk Battery

Sample Id: T1
Lab Sample Id: 559041-005

Matrix: Soil
Date Collected: 07.27.17 09.30

Date Received: 08.01.17 15.06
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3024257

Date Prep: 08.07.17 08.00

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	08.07.17 13.35	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.07.17 13.35	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.07.17 13.35	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	08.07.17 13.35	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.07.17 13.35	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.07.17 13.35	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.07.17 13.35	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	93	%	80-120	08.07.17 13.35		
4-Bromofluorobenzene	460-00-4	102	%	80-120	08.07.17 13.35		



Certificate of Analytical Results 559041



COG Operating LLC, Artesia, NM Woolley Federal Tk Battery

Sample Id: T1 Matrix: Soil Date Received: 08.01.17 15.06
Lab Sample Id: 559041-006 Date Collected: 07.27.17 09.30 Sample Depth: 6 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 08.04.17 12.00 Basis: Wet Weight
Seq Number: 3024184

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9.74	4.95	mg/kg	08.04.17 15.50		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 08.04.17 07.00 Basis: Wet Weight
Seq Number: 3024174

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.04.17 16.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.04.17 16.41	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.04.17 16.41	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.04.17 16.41	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	129	%	70-135	08.04.17 16.41		
o-Terphenyl	84-15-1	108	%	70-135	08.04.17 16.41		



Certificate of Analytical Results 559041



COG Operating LLC, Artesia, NM Woolley Federal Tk Battery

Sample Id: T1
Lab Sample Id: 559041-006

Matrix: Soil
Date Collected: 07.27.17 09.30

Date Received: 08.01.17 15.06
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.04.17 08.15

Basis: Wet Weight

Seq Number: 3024166

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	08.04.17 19.52	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	08.04.17 19.52	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	08.04.17 19.52	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	08.04.17 19.52	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	08.04.17 19.52	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	08.04.17 19.52	U	1
Total BTEX		<0.00201	0.00201	mg/kg	08.04.17 19.52	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	90	%	80-120	08.04.17 19.52		
1,4-Difluorobenzene	540-36-3	104	%	80-120	08.04.17 19.52		



Certificate of Analytical Results 559041



COG Operating LLC, Artesia, NM Woolley Federal Tk Battery

Sample Id: T1
Lab Sample Id: 559041-007

Matrix: Soil
Date Collected: 07.27.17 09.30

Date Received: 08.01.17 15.06
Sample Depth: 8 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MGO

Analyst: MGO

Seq Number: 3024184

Date Prep: 08.04.17 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	98.7	4.91	mg/kg	08.04.17 15.58		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3024174

Date Prep: 08.04.17 07.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.04.17 17.02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.04.17 17.02	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.04.17 17.02	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.04.17 17.02	U	1
Surrogate							
	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	125	%	70-135	08.04.17 17.02		
o-Terphenyl	84-15-1	92	%	70-135	08.04.17 17.02		



Certificate of Analytical Results 559041



COG Operating LLC, Artesia, NM Woolley Federal Tk Battery

Sample Id: T1
Lab Sample Id: 559041-007

Matrix: Soil
Date Collected: 07.27.17 09.30

Date Received: 08.01.17 15.06
Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3024257

Date Prep: 08.07.17 08.00

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	08.07.17 12.57	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.07.17 12.57	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.07.17 12.57	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.07.17 12.57	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.07.17 12.57	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.07.17 12.57	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.07.17 12.57	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	109	%	80-120	08.07.17 12.57		
1,4-Difluorobenzene	540-36-3	97	%	80-120	08.07.17 12.57		



Certificate of Analytical Results 559041



COG Operating LLC, Artesia, NM Woolley Federal Tk Battery

Sample Id: T1 Matrix: Soil Date Received: 08.01.17 15.06
Lab Sample Id: 559041-008 Date Collected: 07.27.17 09.30 Sample Depth: 10 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 08.04.17 12.00 Basis: Wet Weight
Seq Number: 3024184

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	218	4.90	mg/kg	08.04.17 16.06		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 08.04.17 07.00 Basis: Wet Weight
Seq Number: 3024174

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.04.17 17.23	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.04.17 17.23	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.04.17 17.23	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.04.17 17.23	U	1
Surrogate							
	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	125	%	70-135	08.04.17 17.23		
o-Terphenyl	84-15-1	92	%	70-135	08.04.17 17.23		



Certificate of Analytical Results 559041



COG Operating LLC, Artesia, NM Woolley Federal Tk Battery

Sample Id: T1
Lab Sample Id: 559041-008

Matrix: Soil
Date Collected: 07.27.17 09.30

Date Received: 08.01.17 15.06
Sample Depth: 10 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.04.17 15.45

Basis: Wet Weight

Seq Number: 3024179

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	08.05.17 00.11	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	08.05.17 00.11	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	08.05.17 00.11	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	08.05.17 00.11	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	08.05.17 00.11	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	08.05.17 00.11	U	1
Total BTEX		<0.00202	0.00202	mg/kg	08.05.17 00.11	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	80-120	08.05.17 00.11		
4-Bromofluorobenzene	460-00-4	103	%	80-120	08.05.17 00.11		



Certificate of Analytical Results 559041



COG Operating LLC, Artesia, NM Woolley Federal Tk Battery

Sample Id: T1
Lab Sample Id: 559041-009

Matrix: Soil
Date Collected: 07.27.17 09.30

Date Received: 08.01.17 15.06
Sample Depth: 12 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MGO

Analyst: MGO

Seq Number: 3024184

Date Prep: 08.04.17 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	47.6	4.99	mg/kg	08.04.17 16.13		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3024174

Date Prep: 08.04.17 07.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.04.17 17.43	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.04.17 17.43	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.04.17 17.43	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.04.17 17.43	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	125	%	70-135	08.04.17 17.43		
o-Terphenyl	84-15-1	92	%	70-135	08.04.17 17.43		



Certificate of Analytical Results 559041



COG Operating LLC, Artesia, NM Woolley Federal Tk Battery

Sample Id: T1
Lab Sample Id: 559041-009

Matrix: Soil
Date Collected: 07.27.17 09:30

Date Received: 08.01.17 15:06
Sample Depth: 12 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.04.17 15:45

Basis: Wet Weight

Seq Number: 3024179

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.05.17 00:30	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.05.17 00:30	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.05.17 00:30	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.05.17 00:30	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.05.17 00:30	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.05.17 00:30	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.05.17 00:30	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	97	%	80-120	08.05.17 00:30		
4-Bromofluorobenzene	460-00-4	96	%	80-120	08.05.17 00:30		



Certificate of Analytical Results 559041



COG Operating LLC, Artesia, NM Woolley Federal Tk Battery

Sample Id: T1
Lab Sample Id: 559041-010

Matrix: Soil
Date Collected: 07.27.17 09.30

Date Received: 08.01.17 15.06
Sample Depth: 14 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MGO

Analyst: MGO

Seq Number: 3024184

Date Prep: 08.04.17 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	164	4.96	mg/kg	08.04.17 16.21		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3024174

Date Prep: 08.04.17 07.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.04.17 18.04	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.04.17 18.04	U	1
Oil Range Hydrocarbons (ORO)	PHC62835	<15.0	15.0	mg/kg	08.04.17 18.04	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.04.17 18.04	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	123	%	70-135	08.04.17 18.04		
o-Terphenyl	84-15-1	91	%	70-135	08.04.17 18.04		



Certificate of Analytical Results 559041



COG Operating LLC, Artesia, NM Woolley Federal Tk Battery

Sample Id: T1
Lab Sample Id: 559041-010

Matrix: Soil
Date Collected: 07.27.17 09.30

Date Received: 08.01.17 15.06
Sample Depth: 14 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3024179

Date Prep: 08.04.17 15.45

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	08.05.17 00.47	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.05.17 00.47	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.05.17 00.47	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.05.17 00.47	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.05.17 00.47	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.05.17 00.47	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.05.17 00.47	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	80-120	08.05.17 00.47		
4-Bromofluorobenzene	460-00-4	101	%	80-120	08.05.17 00.47		



Certificate of Analytical Results 559041



COG Operating LLC, Artesia, NM Woolley Federal Tk Battery

Sample Id: TI Matrix: Soil Date Received: 08.01.17 15.06
Lab Sample Id: 559041-011 Date Collected: 07.27.17 09.30 Sample Depth: 16 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 08.04.17 12.00 Basis: Wet Weight
Seq Number: 3024184

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	245	4.99	mg/kg	08.04.17 16.29		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 08.04.17 16.00 Basis: Wet Weight
Seq Number: 3024175

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.04.17 22.27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.04.17 22.27	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.04.17 22.27	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.04.17 22.27	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	129	%	70-135	08.04.17 22.27		
o-Terphenyl	84-15-1	92	%	70-135	08.04.17 22.27		



Certificate of Analytical Results 559041



COG Operating LLC, Artesia, NM Woolley Federal Tk Battery

Sample Id: T1
Lab Sample Id: 559041-011

Matrix: Soil
Date Collected: 07.27.17 09.30

Date Received: 08.01.17 15.06
Sample Depth: 16 ft

Analytical Method: BTEX by EPA 8021B
Tech: ALJ
Analyst: ALJ
Seq Number: 3024257

Prep Method: SW5030B
% Moisture:
Date Prep: 08.07.17 08.00
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.07.17 13.16	U	1
Toluene	108-88-3	0.0109	0.00199	mg/kg	08.07.17 13.16		1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.07.17 13.16	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.07.17 13.16	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.07.17 13.16	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.07.17 13.16	U	1
Total BTEX		0.0109	0.00199	mg/kg	08.07.17 13.16		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	85	%	80-120	08.07.17 13.16		
1,4-Difluorobenzene	540-36-3	114	%	80-120	08.07.17 13.16		



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 **SQL** 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

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 - San Antonio - Atlanta - Midland/Odessa - Tampa/Lakeland - Phoenix - Latin America

4147 Greenbriar Dr, Stafford, TX 77477
9701 Harry Hines Blvd, Dallas, TX 75220
5332 Blackberry Drive, San Antonio TX 78238
1211 W Florida Ave, Midland, TX 79701
2525 W. Huntington Dr - Suite 102, Tempe AZ 85282

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



QC Summary 559041

COG Operating LLC Woolley Federal Tk Battery

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3024184

Matrix: Solid

Prep Method: E300P

Date Prep: 08.04.17

MB Sample Id: 728776-1-BLK

LCS Sample Id: 728776-1-BKS

LCSD Sample Id: 728776-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	259	104	257	103	90-110	1	20	mg/kg	08.04.17 12:54	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3024184

Matrix: Soil

Prep Method: E300P

Date Prep: 08.04.17

Parent Sample Id: 559040-001

MS Sample Id: 559040-001 S

MSD Sample Id: 559040-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<4.97	249	256	103	261	105	90-110	2	20	mg/kg	08.04.17 13:17	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3024184

Matrix: Soil

Prep Method: E300P

Date Prep: 08.04.17

Parent Sample Id: 559041-003

MS Sample Id: 559041-003 S

MSD Sample Id: 559041-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	6.09	250	268	105	265	104	90-110	1	20	mg/kg	08.04.17 15:04	

Analytical Method: TPH By SW8015 Mod

Seq Number: 3024174

Matrix: Solid

Prep Method: TX1005P

Date Prep: 08.04.17

MB Sample Id: 728838-1-BLK

LCS Sample Id: 728838-1-BKS

LCSD Sample Id: 728838-1-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	956	96	929	93	70-135	3	35	mg/kg	08.04.17 09:34	
Diesel Range Organics (DRO)	<15.0	1000	1060	106	1060	106	70-135	0	35	mg/kg	08.04.17 09:34	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	129		126		126		70-135	%	08.04.17 09:34
o-Terphenyl	97		97		100		70-135	%	08.04.17 09:34



QC Summary 559041

COG Operating LLC Woolley Federal Tk Battery

Analytical Method: TPH By SW8015 Mod

Seq Number: 3024175

MB Sample Id: 728839-1-BLK

Matrix: Solid

LCS Sample Id: 728839-1-BKS

Prep Method: TX1005P

Date Prep: 08.04.17

LCSD Sample Id: 728839-1-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	805	81	949	95	70-135	16	35	mg/kg	08.04.17 19:11	
Diesel Range Organics (DRO)	<15.0	1000	886	89	983	98	70-135	10	35	mg/kg	08.04.17 19:11	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	130		113		128		70-135	%	08.04.17 19:11
o-Terphenyl	96		80		90		70-135	%	08.04.17 19:11

Analytical Method: TPH By SW8015 Mod

Seq Number: 3024174

Parent Sample Id: 559039-001

Matrix: Soil

MS Sample Id: 559039-001 S

Prep Method: TX1005P

Date Prep: 08.04.17

MSD Sample Id: 559039-001 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	1000	926	93	948	95	70-135	2	35	mg/kg	08.04.17 10:34	
Diesel Range Organics (DRO)	40.8	1000	1010	97	1020	98	70-135	1	35	mg/kg	08.04.17 10:34	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	125		124		70-135	%	08.04.17 10:34
o-Terphenyl	87		86		70-135	%	08.04.17 10:34

Analytical Method: TPH By SW8015 Mod

Seq Number: 3024175

Parent Sample Id: 559042-025

Matrix: Soil

MS Sample Id: 559042-025 S

Prep Method: TX1005P

Date Prep: 08.04.17

MSD Sample Id: 559042-025 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	997	1020	102	997	100	70-135	2	35	mg/kg	08.04.17 20:17	
Diesel Range Organics (DRO)	<15.0	997	1020	102	1000	100	70-135	2	35	mg/kg	08.04.17 20:17	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	127		127		70-135	%	08.04.17 20:17
o-Terphenyl	91		90		70-135	%	08.04.17 20:17



QC Summary 559041

COG Operating LLC
Woolley Federal Tk Battery

Analytical Method: BTEX by EPA 8021B

Seq Number: 3024166

MB Sample Id: 728837-1-BLK

Matrix: Solid

LCS Sample Id: 728837-1-BKS

Prep Method: SW5030B

Date Prep: 08.04.17

LCSD Sample Id: 728837-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.101	0.108	107	0.116	115	70-130	7	35	mg/kg	08.04.17 08.18	
Toluene	<0.00201	0.101	0.107	106	0.115	114	70-130	7	35	mg/kg	08.04.17 08.18	
Ethylbenzene	<0.00201	0.101	0.110	109	0.117	116	71-129	6	35	mg/kg	08.04.17 08.18	
m,p-Xylenes	<0.00402	0.201	0.213	106	0.228	113	70-135	7	35	mg/kg	08.04.17 08.18	
o-Xylene	<0.00201	0.101	0.106	105	0.113	112	71-133	6	35	mg/kg	08.04.17 08.18	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits			Units	Analysis Date	
1,4-Difluorobenzene	100		106		105		80-120			%	08.04.17 08.18	
4-Bromofluorobenzene	103		104		103		80-120			%	08.04.17 08.18	

Analytical Method: BTEX by EPA 8021B

Seq Number: 3024179

MB Sample Id: 728847-1-BLK

Matrix: Solid

LCS Sample Id: 728847-1-BKS

Prep Method: SW5030B

Date Prep: 08.04.17

LCSD Sample Id: 728847-1-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	0.107	106	0.117	116	70-130	9	35	mg/kg	08.04.17 20.49	
Toluene	<0.00202	0.101	0.109	108	0.119	118	70-130	9	35	mg/kg	08.04.17 20.49	
Ethylbenzene	<0.00202	0.101	0.110	109	0.122	121	71-129	10	35	mg/kg	08.04.17 20.49	
m,p-Xylenes	<0.00403	0.202	0.215	106	0.238	118	70-135	10	35	mg/kg	08.04.17 20.49	
o-Xylene	<0.00202	0.101	0.108	107	0.119	118	71-133	10	35	mg/kg	08.04.17 20.49	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits			Units	Analysis Date	
1,4-Difluorobenzene	98		98		103		80-120			%	08.04.17 20.49	
4-Bromofluorobenzene	96		101		107		80-120			%	08.04.17 20.49	

Analytical Method: BTEX by EPA 8021B

Seq Number: 3024257

MB Sample Id: 728907-1-BLK

Matrix: Solid

LCS Sample Id: 728907-1-BKS

Prep Method: SW5030B

Date Prep: 08.07.17

LCSD Sample Id: 728907-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.101	0.0969	96	0.0977	98	70-130	1	35	mg/kg	08.07.17 08.13	
Toluene	<0.00201	0.101	0.104	103	0.104	104	70-130	0	35	mg/kg	08.07.17 08.13	
Ethylbenzene	<0.00201	0.101	0.0984	97	0.0993	99	71-129	1	35	mg/kg	08.07.17 08.13	
m,p-Xylenes	<0.00402	0.201	0.192	96	0.194	97	70-135	1	35	mg/kg	08.07.17 08.13	
o-Xylene	<0.00201	0.101	0.0945	94	0.0962	96	71-133	2	35	mg/kg	08.07.17 08.13	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits			Units	Analysis Date	
1,4-Difluorobenzene	99		104		105		80-120			%	08.07.17 08.13	
4-Bromofluorobenzene	105		104		105		80-120			%	08.07.17 08.13	



QC Summary 559041

COG Operating LLC Woolley Federal Tk Battery

Analytical Method: BTEX by EPA 8021B

Seq Number: 3024166

Parent Sample Id: 559039-005

Matrix: Soil

MS Sample Id: 559039-005 S

Prep Method: SW5030B

Date Prep: 08.04.17

MSD Sample Id: 559039-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.101	0.0988	98	0.101	100	70-130	2	35	mg/kg	08.04.17 08:56	
Toluene	<0.00201	0.101	0.0983	97	0.100	99	70-130	2	35	mg/kg	08.04.17 08:56	
Ethylbenzene	<0.00201	0.101	0.101	100	0.102	101	71-129	1	35	mg/kg	08.04.17 08:56	
m,p-Xylenes	<0.00402	0.201	0.196	98	0.199	99	70-135	2	35	mg/kg	08.04.17 08:56	
o-Xylene	<0.00201	0.101	0.0977	97	0.0990	98	71-133	1	35	mg/kg	08.04.17 08:56	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		105		80-120	%	08.04.17 08:56
4-Bromofluorobenzene	107		108		80-120	%	08.04.17 08:56

Analytical Method: BTEX by EPA 8021B

Seq Number: 3024179

Parent Sample Id: 559258-001

Matrix: Soil

MS Sample Id: 559258-001 S

Prep Method: SW5030B

Date Prep: 08.04.17

MSD Sample Id: 559258-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.0851	85	0.101	101	70-130	17	35	mg/kg	08.04.17 21:26	
Toluene	<0.00201	0.100	0.0804	80	0.0965	97	70-130	18	35	mg/kg	08.04.17 21:26	
Ethylbenzene	<0.00201	0.100	0.0828	83	0.0975	98	71-129	16	35	mg/kg	08.04.17 21:26	
m,p-Xylenes	<0.00402	0.201	0.161	80	0.188	94	70-135	15	35	mg/kg	08.04.17 21:26	
o-Xylene	<0.00201	0.100	0.0849	85	0.0962	96	71-133	12	35	mg/kg	08.04.17 21:26	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		103		80-120	%	08.04.17 21:26
4-Bromofluorobenzene	109		107		80-120	%	08.04.17 21:26

Analytical Method: BTEX by EPA 8021B

Seq Number: 3024257

Parent Sample Id: 559041-001

Matrix: Soil

MS Sample Id: 559041-001 S

Prep Method: SW5030B

Date Prep: 08.07.17

MSD Sample Id: 559041-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0757	75	0.0640	64	70-130	17	35	mg/kg	08.07.17 15:10	X
Toluene	<0.00202	0.101	0.0718	71	0.0683	68	70-130	5	35	mg/kg	08.07.17 15:10	X
Ethylbenzene	<0.00202	0.101	0.0620	61	0.0561	56	71-129	10	35	mg/kg	08.07.17 15:10	X
m,p-Xylenes	0.00745	0.202	0.119	55	0.109	51	70-135	9	35	mg/kg	08.07.17 15:10	X
o-Xylene	0.00285	0.101	0.0606	57	0.0553	52	71-133	9	35	mg/kg	08.07.17 15:10	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	97		106		80-120	%	08.07.17 15:10
4-Bromofluorobenzene	105		114		80-120	%	08.07.17 15:10

CHAIN OF CUSTODY

Page 1 of 2

San Antonio, Texas (210-609-3334)
Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0800)

WWW.2000.5000

[illegible]

CHAIN OF CUSTODY

Page 2 of 2

Setting the Standard since 1990
Stafford, Texas (281-240-4200)

Dallas Texas (214-802-0300)

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

Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

www.knoed.com[illegible]

Notas: **Notas:** Signature of this document and rembursement of samples constitutes a valid purchase order from client company to Xerco. As affiliates and subcontratados, Xerco assigns standard terms and conditions of service. Xerco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the Client if such losses are due to circumstances beyond the control of Xerco. A minimum charge of \$75 will be applied to each project. Xerco's liability will be limited to the cost of samples. Any samples received by Xerco but not analyzed will be involved at \$5 per sample. These terms will be enforced unless previously informed client contact.



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

CHAIN OF CUSTODY

Page 1 of 2

San Antonio, Texas (210-508-3344)
Midland, Texas (432-704-6261)

Phoenix, Arizona (480-355-0900)

WWW.XENOCO.COM

Client / Reporting Information

Company Name / Branch:
COG Operating LLC
Company Address:
2407 PECOS Avenue Ariesa Nat 88210

Email:
shelb@concho.com daniel@concho.com thshelb@concho.com
Phone No: 875-748-1833

Project Contact: Aaron Lieb

Project Name/Number:
CHC-2004-188 WUOMY FOLLOWS TK Bury
Project Location:
BRU 05344
Invoice To:
COG Operating LLC
Attn: Robert McNeill
600 W. Illinois
Midland TX 79701

PO Number:

Project Information

Analytical Information

Matrix Codes

W = Water
S = Solid/Sediment
GW = Ground Water
DW = Drinking Water
P = Product
SW = Surface water
SL = Sludge
OW = Ocean/Sea Water
WI = Wipes
O = Oil
WW = Waste Water
A = Air

Field Comments

No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	Number of preservatives	TPH/ EXTENDED	BTEX	Chloride
1	T1	SURF	7-27	7:30AM	S	21	NaOH, Zn Acetate, HNO3, H2SO4, NaOH, NaHSO4, MECH, NONE	X	X	X
2	T1	1'						X	X	X
3	T1	2'						X	X	X
4	T1	3'						X	X	X
5	T1	4'						X	X	X
6	T1	6'						X	X	X
7	T1	8'						X	X	X
8	T1	10'						X	X	X
9	T1	12'						X	X	X
10	T1	14'						X	X	X

Turnaround Time (Business days)

Date Deliverable Information

Notes:

☐ Same Day TAT

☐ Level II Std QC

☐ Level IV (Full Data Plug / new data)

☐ Level II Std QC + Forms

☐ TRRP Level IV

☐ 2 Day EMERGENCY

☐ 2 Day EMERGENCY

☐ Contract TAT

☐ Level 3 (CLP Forms)

☐ UST / NO-411

☐ 3 Day EMERGENCY

☐ TRRP Checklist

TAT Starts Day received by Lab, if received by 5:00 pm

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COLUMBIA DELIVERY

Relinquished by Sampler:

Date Time:

Received By:

Date Time:

Relinquished By:

Date Time:

Received By:

Date Time:

Received By:

Relinquished by:

Date Time:

Received By:

Date Time:

Relinquished By:

Date Time:

Received By:

Date Time:

Received By:

Relinquished by:

Date Time:

Received By:

Date Time:

Relinquished By:

Date Time:

Received By:

Date Time:

Received By:

Notes: Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenoco. Its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenoco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the Client if such losses are due to circumstances beyond the control of Xenoco. A minimum charge of \$75 will be applied to each project. Xenoco's liability will be limited to the cost of samples. Any samples received by Xenoco but not analyzed will be invoiced at \$5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.



Setting the Standard since 1990
Stafford, Texas (281-240-4200)
Dallas, Texas (214-802-0300)

CHAIN OF CUSTODY

Page 2 of 2

San Antonio, Texas (210-598-3334)
Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

www.xenco.com

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes			
Company Name / Branch: COG Operating LLC				Project Name/Number: BRL0036H				Xenoco Quote # 55904				Xenoco Job # 55904			
Company Address: 2487 PECOS Avenue Artesia NM 88210				Project Location: BRL0036H											
Email: allinfo@xenco.com Phone No: 875-748-1823				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															
Field ID / Point of Collection				Sample Depth				Sample Date				Sample Time			
1 T1				16'				7-27				9:30 AM			
2															
3															
4															
5															
6															
7															
8															
9															
10															
Turnaround Time (Business days)				Days Deliverable Information				Number of preserved bottles				Number of preserved bottles			
☐ Same Day TAT				☐ 5 Day TAT				☐ Level II Std QC				☐ Level IV (Full Data Pkg raw data)			
☐ Next Day EMERGENCY				☐ 7 Day TAT				☐ Level III Std QC + Forms				☐ TRRP Level IV			
☐ 2 Day EMERGENCY				☐ Contract TAT				☐ Level 3 (CLP Forms)				☐ UST / RG-411			
☐ 3 Day EMERGENCY								☐ TRRP Checklist							
TAT Starts Day received by Lab, if received by 5:00 pm															
Relinquished by Sampler:				Date Time:				Relinquished By:				Date Time:			
1 <i>[Signature]</i>				8-1-19 1:17 PM				2 <i>[Signature]</i>				8-1-19 3:09 PM			
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
3								3							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
4								4							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
5								5							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
6								6							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
7								7							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
8								8							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
9								9							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
10								10							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
11								11							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
12								12							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
13								13							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
14								14							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
15								15							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
16								16							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
17								17							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
18								18							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
19								19							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
20								20							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
21								21							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
22								22							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
23								23							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
24								24							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
25								25							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
26								26							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
27								27							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
28								28							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
29								29							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
30								30							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
31								31							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
32								32							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
33								33							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
34								34							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
35								35							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
36								36							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
37								37							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
38								38							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
39								39							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
40								40							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
41								41							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
42								42							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
43								43							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
44								44							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
45								45							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
46								46							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
47								47							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
48								48							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
49								49							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
50								50							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
51								51							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
52								52							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
53								53							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
54								54							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
55								55							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
56								56							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
57								57							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
58								58							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
59								59							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
60								60							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
61								61							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
62								62							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
63								63							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
64								64							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
65								65							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
66								66							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
67								67							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
68								68							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
69								69							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
70								70							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
71								71							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
72								72							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
73								73							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
74								74							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
75								75							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
76								76							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
77								77							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
78								78							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
79								79							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
80								80							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
81								81							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
82								82							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
83								83							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
84								84							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
85								85							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
86								86							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
87								87							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
88								88							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
89								89							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
90								90							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
91								91							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
92								92							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
93								93							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
94								94							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
95								95							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
96								96							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
97								97							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
98								98							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
99								99							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			
100								100							
Relinquished by:				Date Time:				Relinquished By:				Date Time:			

Notes: Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco. It entitles and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any business or expenses incurred by the Client if such losses are due to circumstances beyond the control of Xenco. A maximum charge of \$75 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at \$5 per sample. These terms will be enforced unless previously negotiated under a duly executed client contract.



XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In



Client: COG Operating LLC

Date/ Time Received: 08/01/2017 03:06:00 PM

Work Order #: 559041

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	2.9
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seal present on shipping container/ cooler?	N/A
#5 *Custody Seals intact on shipping container/ cooler?	N/A
#6 Custody Seals intact on sample bottles?	N/A
#7 *Custody Seals Signed and dated?	N/A
#8 *Chain of Custody present?	Yes
#9 Sample instructions complete on Chain of Custody?	Yes
#10 Any missing/extra samples?	No
#11 Chain of Custody signed when relinquished/ received?	Yes
#12 Chain of Custody agrees with sample label(s)?	Yes
#13 Container label(s) legible and intact?	Yes
#14 Sample matrix/ properties agree with Chain of Custody?	Yes
#15 Samples in proper container/ bottle?	Yes
#16 Samples properly preserved?	Yes
#17 Sample container(s) intact?	Yes
#18 Sufficient sample amount for indicated test(s)?	Yes
#19 All samples received within hold time?	Yes
#20 Subcontract of sample(s)?	N/A
#21 VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by: Jessica Kramer
Jessica Kramer

Date: 08/02/2017

Checklist reviewed by: Kelsey Brooks
Kelsey Brooks

Date: 08/02/2017

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

JUN 29 2017

Form C-141
Revised August 8, 2011

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

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

Release Notification and Corrective Action

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: Woolley Federal Tank Battery	Facility Type: Tank Battery
Surface Owner: Federal	Mineral Owner: API No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
	28	17S	30E					Eddy

Latitude 32.81099878 Longitude -103.9793623

NATURE OF RELEASE

Type of Release: Oil and Produced Water	Volume of Release: 1 bbl. Oil & 63 bbl. PW	Volume Recovered: 0 bbl. Oil & 60 bbl. PW
Source of Release: Transfer Pump	Date and Hour of Occurrence: June 27, 2017 10:00 am	Date and Hour of Discovery: June 27, 2017 10:00 am
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Ms. Weaver - NMOCD / Ms. Groves - SLO	
By Whom? Dakota Neel	Date and Hour: June 27, 2017 4:59 pm	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	
If a Watercourse was Impacted, Describe Fully.*		
Describe Cause of Problem and Remedial Action Taken.*		
The release was caused by a one-inch drain on the transfer pump filter casing. Installed a new stainless steel drain on filter casing.		
Describe Area Affected and Cleanup Action Taken.*		
The release was within an unlined berm. 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>Crystal Wee</i>	
Title: Senior HSE Coordinator	Approval Date: 7/3/17	Expiration Date: NA
E-mail Address: rhaskell@concho.com	Conditions of Approval: <i>see attached</i>	Attached ☒
Date: June 29, 2017 Phone: 432-683-7443		

* Attach Additional Sheets if Necessary

Please refer to the New Mexico Oil
Conservation Division Website for
updated form(s) at:
[http://www.emnrd.state.nm.us/
OCD/forms.html](http://www.emnrd.state.nm.us/OCD/forms.html)
Thank you

2RP-4279