



REMEDIATION WORK PLAN

Property:

**Concho Operating, LLC.
N G Phillips State #037
Eddy County, New Mexico
Unit Letter "P", Section 27, Township 17 South, Range 28 East
Latitude 32.8017197, Longitude -104.1586685
2RP- 4195**

November 2017

Prepared for:

**Concho Operating, LLC.
600 West Illinois Avenue
Midland, TX 79701
Attn: Mrs. Rebecca Haskell**

Prepared by:

Thomas Franklin
Environmental Manager

Ryan Reich
Environmental Project Manager

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WORK PLAN

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Unit Letter "P", Section 27, Township 17 South, Range 28 East
Latitude 32.8017197, Longitude -104.1586685
2RP-4195**

November 2017

1.0 INTRODUCTION

1.1 Site Description & Background

American Safety Services Inc. (ASSI) has prepared this Work Plan for the Concho Operating, LLC. (COG) N G Phillips State #037 (referred to hereinafter as the "Site" or "subject Site"). This Work Plan is based upon the interpretation of the data collected by COG.

The N G Phillips State #037 is located in Unit Letter "P", Section 27, Township 17 South, Range 28 East, Eddy County, New Mexico (GPS 32.8017197, -104.1586685). Figures 1 and 2 (Appendix A) show the Site location.

Remedial actions will be conducted in accordance with New Mexico Energy, Minerals, and Natural Resources Department (EMNRD), Oil Conservation Division (NMOCD) rules (*NMAC 19.15.29 Release Notification*) and the *NMOCD Guidelines for Remediation of Leaks, Spills and Releases* as guidance.

1.2 Project Objective

The objective of the Work Plan is to present documentation of the activities that were performed to date and to request an effective means to remediate the Site.

1.3 Standard of Care

ASSI's services are performed in accordance with standards provided by a firm rendering the same or similar services in the area during the same time frame. ASSI makes no warranties, express or implied, as to the services performed hereunder. Additionally, ASSI does not warranty the work of third parties supplying information used in the report (e.g. laboratories, regulatory agencies, or other third parties). This scope of services will be performed in accordance with the scope of work agreed with the client.

1.4 Reliance

This report has been prepared for the exclusive use of COG, and any authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the Site) is prohibited without the express written authorization of COG and ASSI. Any unauthorized distribution or reuse is at the sole risk of COG. Notwithstanding the foregoing, reliance by authorized parties will be subject to the terms, conditions and limitations stated in the proposal, the report, and ASSI's Agreement. The limitation of liability defined in the agreement is the aggregate limit of ASSI's liability to the client.

2.0 SITE RANKING & PROPOSED REMEDIAL ACTION GOALS

The Site is subject to regulatory oversight by the NMOCD. To address activities related to releases, the NMOCD utilizes the *Guidelines for Remediation of Leaks, Spills and Releases* as guidance, in addition to the NMOCD rules, specifically NMAC 19.15.29 *Release Notification*. These documents establish investigation and abatement action requirements for sites subject to reporting and/or corrective action.

In accordance with the NMOCD's *Guidelines for Remediation of Leaks, Spills and Releases*, ASSI utilized the general site characteristics to determine the appropriate "ranking" for the Site. The ranking criteria and associated scoring are provided in the table below:

Ranking Criteria			Ranking Score
Depth to Groundwater	<50 feet	20	0
	50 to 99 feet	10	
	>100 feet	0	
Wellhead Protection Area, <1,000 feet from a water source, or; <200 feet from private domestic water source.	Yes	20	0
	No	0	
Distance to Surface Water Body	<200 feet	20	0
	200 to 1,000 feet	10	
	>1,000 feet	0	
Total Ranking Score			0

Based on ASSI's evaluation of the scoring criteria, the Site would have a Total Ranking Score of 0. This ranking is based on the following:

- The depth to the initial groundwater-bearing zone is greater than 100 feet at the Site.
- The impacted area is greater than 200 feet from a private domestic water source.
- Distance to the nearest surface water body is greater than 1,000 ft.

Based on the Total Ranking Score of 0, cleanup goals for soils remaining in-place include: 10 milligrams per Kilogram (mg/Kg) for Benzene, 50 mg/Kg for Total Benzene, Toluene, Ethylbenzene and Xylene (BTEX), 5,000 mg/Kg for Total Petroleum Hydrocarbons (TPH) and 600 mg/Kg for Chloride.

3.0 INITIAL RESPONSE & TRENCHING ACTIVITIES

3.1 Initial Response

On May 23, 2017, COG personnel performed a site evaluation in response to a release at the Site (i.e., N G Phillips State #037). The site evaluation was in response to a release directly to the ground of five (5) barrels (bbls) of oil and three (3) bbls of produced water. Four (4) bbls of oil and two bbls of produced water were recovered. The release impacted approximately four thousand-five hundred and fifty (4,550) square feet of surrounding pasture area.

3.2 Sampling Activities

Sampling activities were conducted on May 23, 2017 by COG and GCI Construction (subcontractor) personnel, using mechanical means (i.e., backhoe tractor). COG environmental professionals were present to document onsite activities. Five (5) test trenches (i.e., T1, T2, T3, T4, and T5) were installed, using the backhoe tractor, each to various depths ranging from surface to fourteen (14) feet below ground surface (bgs). Table 1 (Appendix B) present analytical results and Figure 3 and Figure 4 (Appendix A) show the release footprint and trench/sample point locations respectively. Discrete samples were collected from all test trenches at the following intervals: Surface, 1', 2', 3', 4', 5', 6', 7', 8', 10, 12, and 14' bgs. Soil was field screened for Chloride utilizing electro conductivity during sampling activities.

3.2.1 Trenching Activities

Further delineation trenching was conducted on October 17th by ASSI utilizing a trackhoe excavator. ASSI installed one (1) trench in the area adjacent to T1 down to eight (8) feet bgs collecting samples at eight (8) foot and nine (9) foot bgs. Table 1 (Appendix B) present analytical results and Figure 3 and Figure 4 (Appendix A) show the release footprint and trench/sample point locations respectively.

3.3 Soil Sampling Analytical Results

Forty-five (45) soil samples were collected from six (6) locations (i.e., Trench 1 @ T1, T1, T2, T3, T4, and T5) for laboratory analysis. The samples were analyzed for BTEX, TPH, and Chloride (Table 1). Analytical results were compared to the NMOCD *Guidelines for Remediation of Leaks, Spills and Releases* (Section VI A. Contaminated Soils) and show both TPH and Chloride exceedances exist above the NMOCD clean-up goals.

Regarding the May 2017 sampling event, vertical delineation was achieved at all of the sample locations for both TPH and Chloride except for the area of T1. Accordingly, NMOCD's threshold of 600 mg/Kg to satisfy clean-up goals for Chloride was not met. However, all trench locations require a removal action as part of the proposed remediation.

Specifically, T1 has TPH exceedances at depth ranging between 5,690 and 6,550 mg/kg from three (3) to seven (7) foot bgs and Chloride exceedances at depth ranging between 616 and 2,590 mg/Kg from two (2) to eight (8) feet bgs. T2 has a TPH exceedance of 14,300 mg/Kg at surface and Chloride exceedances ranging between 1,070 and 2,420 mg/Kg from surface to eight (8) foot bgs. T3 has TPH exceedances from surface to eight (8) feet bgs ranging between 5,460 and 10,700 mg/Kg and Chloride exceedances ranging between 716 and 5,770 mg/Kg from surface to six (6) feet bgs. T5 has TPH exceedances ranging between 20,800 and 24,700 mg/Kg from surface to one (1) foot bgs and Chloride exceedances ranging between 1,800 and 5,630 mg/Kg from surface to two (2) feet bgs. At T4, Chloride concentrations above NMOCD clean-up goals exist from surface to one (1) foot bgs ranging between 2,830 and 6,170 mg/Kg.

4.0 LABORATORY ANALYTICAL METHODS

The samples were analyzed for TPH GRO/DRO utilizing EPA method SW-846 8015, BTEX using EPA method SW-846 8021B, and Chloride utilizing EPA method SW-846 300.1. Laboratory analysis is provided in Appendix C. Table 1 in Appendix B shows analytical results.

Soil was collected, in laboratory prepared glassware, placed on ice, and packed in a cooler. The sample coolers and completed chain-of-custody forms were relinquished to Xenco Laboratories in Midland, Texas for normal turn-around time.

Figure 4 (Appendix A) indicates the approximate location of sample locations, T1 thru T5, previously installed in relation to pertinent land features and general Site boundaries and anticipated excavation depths during the proposed removal action.

5.0 WORK PLAN

Based upon the analytical data, COG and ASSI propose to remove the impacted material as presented in Table 1 and indicated on Figure 4. The area adjacent to and around T1 and T3 will be initially excavated to a depth of approximately four (4) feet bgs and have a 20 mil liner installed at the bottom of the excavated area. The areas adjacent to and around locations T2 and T4 will be excavated to a depth of one (1) foot bgs to remove existing Chloride and TPH concerns. Finally, the area adjacent to and around T5 will be excavated to a depth of two (2) foot bgs to remove existing Chloride and TPH concerns. All material excavated will be stockpiled onsite and subsequently removed (hauled away) offsite to a proper disposal facility under appropriate manifest. Excavated areas will then be backfilled to grade with clean material and the surface grade contoured to the surrounding landscape.



APPENDIX A

Figures

COG- NG Phillips State #37

Figure 1

Legend



NG Phillips State #37 Flowline



COG- NG Phillips State #37

Figure 2

Legend



NG Phillips State #37 Flowline



NG Phillips State #37 Flowline



Google Earth
200 ft



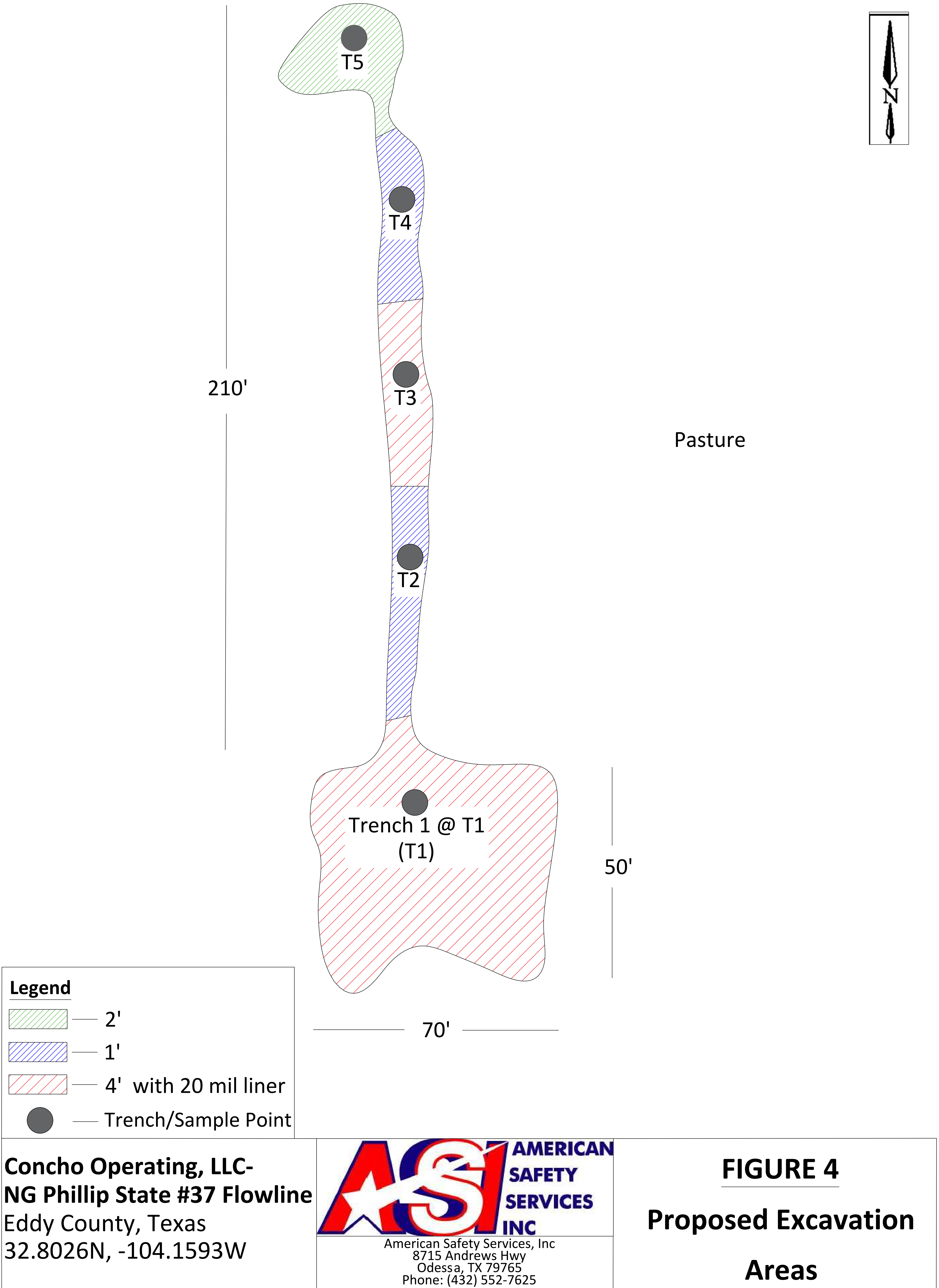
COG- NG Phillips State #37

Figure 3

Legend

-  NG Phillips State #37 Flowline
-  Release Footprint







APPENDIX B

Table 1

TABLE 1
Summary of Delineation Sampling Analytical Results
Concentrations of Benzene, BTEX, TPH & Chloride in Soil
Concho Operating, LLC
N G Phillips State #037
Eddy County, New Mexico
NMOCD REF: 2RP-4195

SAMPLE LOCATION	SAMPLE DEPTH (bgs)	SAMPLE DATE	SOIL STATUS	8021B					8015M				300.0
				BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYLBENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)	TOTAL BTEX (mg/Kg)	GRO (mg/Kg)	DRO (mg/Kg)	ORO (mg/Kg)	Total TPH (mg/Kg)	CHLORIDE (mg/Kg)
NMOCD - Guidelines for Remediation of Leaks, Spills and Releases				10	NE	NE	NE	50	NE	NE	NE	5,000	600
Vertical Delineation Sampling													
T1	Surface	5/23/2017	In-Situ	<0.00341	<0.00341	<0.00341	<0.00341	<0.00341	<15.0	749	-	840	314
T1	1'	5/23/2017	In-Situ	<0.00387	0.00799	<0.00341	<0.00341	0.0119	<15.0	99.8	-	99.8	476
T1	2'	5/23/2017	In-Situ	0.00664	0.0099	<0.00348	<0.00348	0.0165	169	3,550	-	4,090	618
T1	3'	5/23/2017	In-Situ	<0.00358	0.00471	0.0489	0.168	0.222	793	5,600	-	6,550	2,590
T1	4'	5/23/2017	In-Situ	0.00698	0.0163	0.105	0.475	0.603	900	3,990	-	4,970	862
T1	6'	5/23/2017	In-Situ	0.00505	0.0197	0.292	1.32	1.64	1,350	4,210	-	5,690	616
T1	7'	5/23/2017	In-Situ	<0.00360	0.0165	0.264	1.09	1.37	1,290	4,710	-	6,190	596
Trench 1 @ T1	8'	10/17/2017	In-Situ	<0.00197	<0.00197	<0.00196	<0.00197	<0.00197	<15.0	195	34.1	229.1	1,189.2
Trench 1 @ T1	9'	10/17/2017	In-Situ	<0.00196	<0.00196	<0.00196	<0.00196	<0.00196	<15.0	27.6	<15.0	27.6	197.50
T2	Surface	5/23/2017	In-Situ	0.0664	0.68	0.686	1.46	2.90	1,600	11,900	-	14,300	1,070
T2	1'	5/23/2017	In-Situ	0.0187	0.0521	0.204	0.545	0.820	387	4,170	-	4,650	2,420
T2	2'	5/23/2017	In-Situ	<0.00351	0.0202	0.0283	0.0378	0.0863	390	2,420	-	2,890	222
T2	3'	5/23/2017	In-Situ	<0.00345	0.00929	<0.00345	0.00722	0.0165	41.0	2,170	-	2,460	175
T2	4'	5/23/2017	In-Situ	0.00461	0.00632	<0.00357	<0.00357	0.0109	298	3,170	-	3,620	145
T2	6'	5/23/2017	In-Situ	0.00850	0.00819	<0.00345	<0.00345	0.0167	515	3,080	-	3,790	1,300
T2	8'	5/23/2017	In-Situ	<0.00344	<0.00344	<0.00344	<0.00344	<0.00344	<15.0	<15.0	-	<15.0	1,610
T2	10'	5/23/2017	In-Situ	<0.00364	<0.00364	<0.00364	<0.00364	<0.00364	<15.0	<15.0	-	<15.0	116
T2	12'	5/23/2017	In-Situ	<0.00361	<0.00361	<0.00361	<0.00361	<0.00361	<15.0	<15.0	-	<15.0	27.2
T3	Surface	5/23/2017	In-Situ	0.00382	0.0143	0.0144	0.421	0.453	795	5,280	-	6,650	2,160
T3	1'	5/23/2017	In-Situ	0.0151	0.175	0.0433	1.71	1.95	706	4,430	-	5,460	2,260
T3	2'	5/23/2017	In-Situ	<0.00353	0.0176	0.0318	0.0723	0.122	149	4,240	-	4,650	5,770
T3	3'	5/23/2017	In-Situ	0.00487	0.0165	0.249	0.391	0.661	1,140	9,030	-	10,700	1,100
T3	4'	5/23/2017	In-Situ	<0.00377	<0.00377	<0.00377	0.0142	0.0142	37.2	342	-	409	1,050
T3	6'	5/23/2017	In-Situ	<0.00369	0.0125	0.0377	0.04620	0.0964	20.2	222	-	242	716
T3	8'	5/23/2017	In-Situ	0.00832	0.0110	<0.00357	0.00836	0.103	492	4,700	-	5,570	62.0
T3	10'	5/23/2017	In-Situ	<0.00344	0.00466	0.0263	0.00395	0.0349	290	2,560	-	2,950	94.1
T3	12'	5/23/2017	In-Situ	0.0046	0.00648	0.0143	0.0298	0.0552	554	3,750	-	4,480	431

mg/Kg - milligrams per Kilogram

— = Not Established

Concentrations in **BOLD** exceed the NMOCD Guidelines

	Proposed excavated area
	Proposed liner

TABLE 1
Summary of Delineation Sampling Analytical Results
Concentrations of Benzene, BTEX, TPH & Chloride in Soil
Concho Operating, LLC
N G Phillips State #037
Eddy County, New Mexico
NMOCD REF: 2RP-4195

SAMPLE LOCATION	SAMPLE DEPTH (bgs)	SAMPLE DATE	SOIL STATUS	8021B					8015M				300.0
				BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYLBENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)	TOTAL BTEX (mg/Kg)	GRO (mg/Kg)	DRO (mg/Kg)	ORO (mg/Kg)	Total TPH (mg/Kg)	CHLORIDE (mg/Kg)
NMOCD - Guidelines for Remediation of Leaks, Spills and Releases				10	NE	NE	NE	50	NE	NE	NE	5,000	600
Vertical Delineation Sampling													
T4	Surface	5/23/2017	In-Situ	<0.00341	<0.00341	0.0191	0.0250	0.0441	232	2,640	-	3,140	6,170
T4	1'	5/23/2017	In-Situ	0.0132	0.308	0.135	0.615	1.07	168	671	-	839	2,830
T4	2'	5/23/2017	In-Situ	<0.00364	0.00805	<0.00364	<0.00364	0.00805	<14.9	<14.9	-	<14.9	97.4
T4	3'	5/23/2017	In-Situ	<0.00375	0.0102	0.00702	<0.00375	0.0172	<15.0	<15.0	-	<15.0	48.8
T4	4'	5/23/2017	In-Situ	<0.00366	<0.00366	<0.00366	<0.00366	<0.00366	<15.0	<15.0	-	<15.0	14.6
T4	6'	5/23/2017	In-Situ	<0.00366	<0.00366	<0.00366	<0.00366	<0.00366	<15.0	<15.0	-	<15.0	11.6
T4	8'	5/23/2017	In-Situ	-	-	-	-	-	-	-	-	-	7.70
T4	10'	5/23/2017	In-Situ	-	-	-	-	-	-	-	-	-	11.5
T4	12'	5/23/2017	In-Situ	-	-	-	-	-	-	-	-	-	4.83
T4	14'	5/23/2017	In-Situ	<0.00375	<0.00375	<0.00375	<0.00375	<0.00375	<15.0	26.3	-	26.3	6.50
T5	Surface	5/23/2017	In-Situ	0.00390	0.0369	0.194	0.279	0.514	2,360	17,100	-	20,800	5,630
T5	1'	5/23/2017	In-Situ	0.0833	56.6	145	227	429	5,320	18,000	-	24,700	4,880
T5	2'	5/23/2017	In-Situ	<0.00500	<0.00500	<0.00500	0.0428	0.0428	29.5	144	-	174	1,800
T5	3'	5/23/2017	In-Situ	<0.00350	<0.00350	<0.00350	<0.00350	<0.00350	<14.9	<14.9	-	<14.9	60.1
T5	4'	5/23/2017	In-Situ	<0.00356	<0.00356	<0.00356	<0.00356	<0.00356	<14.9	<14.9	-	<14.9	8.39
T5	6'	5/23/2017	In-Situ	<0.00654	<0.00654	<0.00654	<0.00654	<0.00654	<15.0	<15.0	-	<15.0	7.74
T5	8'	5/23/2017	In-Situ	<0.00370	<0.00370	<0.00370	<0.00370	<0.00370	<15.0	<15.0	-	<15.0	5.29
T5	14'	5/23/2017	In-Situ	<0.00376	<0.00376	<0.00376	<0.00376	<0.00376	<15.0	<15.0	-	<15.0	5.10

mg/Kg - milligrams per Kilogram

- = Not Established

Concentrations in **BOLD** exceed the NMOCD Guidelines

 Proposed excavated area



APPENDIX C

Laboratory Analysis



Certificate of Analysis Summary 553946

COG Operating LLC, Artesia, NM

Project Name: NG Phillips State #37



Project Id:

Contact: Dakota Neel

Project Location:

Date Received in Lab: Thu May-25-17 10:37 am

Report Date: 06-JUN-17

Project Manager: Liz Givens

<i>Analysis Requested</i>	<i>Lab Id:</i>	553946-001	553946-002	553946-003	553946-004	553946-005	553946-006
	<i>Field Id:</i>	T1	T1	T1	T1	T1	T1
	<i>Depth:</i>		1 ft	2 ft	3 ft	4 ft	6 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	May-23-17 09:00	May-23-17 09:00	May-23-17 09:00	May-23-17 09:00	May-23-17 09:00	May-23-17 09:00
BTEX by EPA 8021B	<i>Extracted:</i>	May-26-17 09:30	May-25-17 13:00	May-25-17 13:00	May-25-17 13:00	May-25-17 13:00	May-25-17 13:00
	<i>Analyzed:</i>	May-26-17 16:33	May-25-17 20:20	May-25-17 20:36	May-25-17 20:53	May-25-17 21:09	May-25-17 21:25
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00341 0.00341	0.00387 0.00341	0.00664 0.00348	<0.00358 0.00358	0.00698 0.00356	0.00505 0.00345
Toluene		<0.00341 0.00341	0.00799 0.00341	0.00990 0.00348	0.00471 0.00358	0.0163 0.00356	0.0197 0.00345
Ethylbenzene		<0.00341 0.00341	<0.00341 0.00341	<0.00348 0.00348	0.0489 0.00358	0.105 0.00356	0.292 0.00345
m,p-Xylenes		<0.00683 0.00683	<0.00683 0.00683	<0.00697 0.00697	0.0867 0.00717	0.183 0.00712	0.646 0.00690
o-Xylene		<0.00341 0.00341	<0.00341 0.00341	<0.00348 0.00348	0.0816 0.00358	0.292 0.00356	0.676 0.00345
Total Xylenes		<0.00341 0.00341	<0.00341 0.00341	<0.00348 0.00348	0.168 0.00358	0.475 0.00356	1.32 0.00345
Total BTEX		<0.00341 0.00341	0.0119 0.00341	0.0165 0.00348	0.222 0.00358	0.603 0.00356	1.64 0.00345
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	May-26-17 10:00	May-26-17 10:00	May-26-17 10:00	May-26-17 10:00	May-26-17 10:00	May-26-17 10:00
	<i>Analyzed:</i>	May-26-17 11:56	May-26-17 12:56	May-26-17 13:03	May-26-17 13:11	May-26-17 13:19	May-26-17 13:41
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		314 4.99	476 4.99	618 4.96	2590 24.8	862 4.91	616 4.92
TPH By SW8015 Mod	<i>Extracted:</i>	May-26-17 11:00	May-26-17 11:00	May-26-17 11:00	May-26-17 11:00	May-26-17 11:00	May-26-17 11:00
	<i>Analyzed:</i>	May-26-17 13:32	May-26-17 13:52	May-26-17 14:12	May-26-17 14:56	May-26-17 15:16	May-26-17 15:37
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	169 15.0	793 74.9	900 74.7	1350 74.9
Diesel Range Organics		749 15.0	99.8 15.0	3550 15.0	5600 74.9	3990 74.7	4210 74.9
Total TPH		840 15.0	99.8 15.0	4090 15.0	6550 74.9	4970 74.7	5690 74.9

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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Version: 1.0%

Liz Givens
Project Manager



Certificate of Analysis Summary 553946

COG Operating LLC, Artesia, NM

Project Name: NG Phillips State #37



Project Id:

Contact: Dakota Neel

Project Location:

Date Received in Lab: Thu May-25-17 10:37 am

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<i>Analysis Requested</i>	<i>Lab Id:</i>	553946-007	553946-008	553946-009	553946-010	553946-011	553946-012
	<i>Field Id:</i>	T1	T2	T2	T2	T2	T2
	<i>Depth:</i>	7 ft		1 ft	2 ft	3 ft	4 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	May-23-17 09:00	May-23-17 09:30	May-23-17 09:30	May-23-17 09:30	May-23-17 09:30	May-23-17 09:30
BTEX by EPA 8021B	<i>Extracted:</i>	May-25-17 13:00	May-26-17 09:30	May-25-17 13:00	May-26-17 09:30	May-26-17 09:30	May-25-17 15:45
	<i>Analyzed:</i>	May-25-17 21:41	May-26-17 17:55	May-25-17 22:30	May-26-17 18:11	May-26-17 17:39	May-26-17 01:26
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00360 0.00360	0.0664 0.00348	0.0187 0.00341	<0.00351 0.00351	<0.00345 0.00345	0.00461 0.00357
Toluene		0.0165 0.00360	0.680 0.00348	0.0521 0.00341	0.0202 0.00351	0.00929 0.00345	0.00632 0.00357
Ethylbenzene		0.264 0.00360	0.686 0.00348	0.204 0.00341	0.0283 0.00351	<0.00345 0.00345	<0.00357 0.00357
m,p-Xylenes		0.525 0.00719	1.06 0.00697	0.322 0.00683	0.0378 0.00702	0.00722 0.00690	<0.00714 0.00714
o-Xylene		0.567 0.00360	0.403 0.00348	0.223 0.00341	<0.00351 0.00351	<0.00345 0.00345	<0.00357 0.00357
Total Xylenes		1.09 0.00360	1.46 0.00348	0.545 0.00341	0.0378 0.00351	0.00722 0.00345	<0.00357 0.00357
Total BTEX		1.37 0.00360	2.90 0.00348	0.820 0.00341	0.0863 0.00351	0.0165 0.00345	0.0109 0.00357
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	May-26-17 10:00	May-26-17 10:00	May-26-17 10:00	May-26-17 10:00	May-26-17 10:00	May-26-17 10:00
	<i>Analyzed:</i>	May-26-17 13:49	May-26-17 13:57	May-26-17 14:04	May-26-17 14:12	May-26-17 14:19	May-26-17 14:42
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		596 4.96	1070 24.4	2420 25.0	222 4.96	175 4.88	145 5.00
TPH By SW8015 Mod	<i>Extracted:</i>	May-26-17 11:00	May-26-17 11:00	May-26-17 11:00	May-26-17 11:00	May-26-17 11:00	May-26-17 11:00
	<i>Analyzed:</i>	May-26-17 15:58	May-26-17 16:17	May-26-17 16:37	May-26-17 16:56	May-27-17 16:29	May-26-17 18:15
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons		1290 74.9	1600 75.0	387 74.8	390 74.9	41.0 14.9	298 74.8
Diesel Range Organics		4710 74.9	11900 75.0	4170 74.8	2420 74.9	2170 14.9	3170 74.8
Total TPH		6190 74.9	14300 75.0	4650 74.8	2890 74.9	2460 14.9	3620 74.8

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Liz Givens
Project Manager



Certificate of Analysis Summary 553946

COG Operating LLC, Artesia, NM

Project Name: NG Phillips State #37



Project Id:

Contact: Dakota Neel

Project Location:

Date Received in Lab: Thu May-25-17 10:37 am

Report Date: 06-JUN-17

Project Manager: Liz Givens

Analysis Requested	Lab Id:	553946-013	553946-014	553946-015	553946-016	553946-017	553946-018
	Field Id:	T2	T2	T2	T2	T3	T3
	Depth:	6 ft	8 ft	10 ft	12 ft		1 ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	May-23-17 09:30	May-23-17 09:30	May-23-17 09:30	May-23-17 09:30	May-23-17 10:00	May-23-17 10:00
BTEX by EPA 8021B	Extracted:	May-25-17 15:45	May-25-17 15:45	May-25-17 15:45	May-25-17 15:45	May-25-17 15:45	May-25-17 15:45
	Analyzed:	May-26-17 06:46	May-26-17 01:42	May-26-17 01:58	May-26-17 02:15	May-26-17 07:02	May-26-17 02:31
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		0.00850 0.00345	<0.00344 0.00344	<0.00364 0.00364	<0.00361 0.00361	0.00382 0.00373	0.0151 0.00358
Toluene		0.00819 0.00345	<0.00344 0.00344	<0.00364 0.00364	<0.00361 0.00361	0.0143 0.00373	0.175 0.00358
Ethylbenzene		<0.00345 0.00345	<0.00344 0.00344	<0.00364 0.00364	<0.00361 0.00361	0.0144 0.00373	0.0433 0.00358
m,p-Xylenes		<0.00690 0.00690	<0.00687 0.00687	<0.00727 0.00727	<0.00722 0.00722	0.329 0.00746	1.11 0.00717
o-Xylene		<0.00345 0.00345	<0.00344 0.00344	<0.00364 0.00364	<0.00361 0.00361	0.0917 0.00373	0.603 0.00358
Total Xylenes		<0.00345 0.00345	<0.00344 0.00344	<0.00364 0.00364	<0.00361 0.00361	0.421 0.00373	1.71 0.00358
Total BTEX		0.0167 0.00345	<0.00344 0.00344	<0.00364 0.00364	<0.00361 0.00361	0.453 0.00373	1.95 0.00358
Inorganic Anions by EPA 300/300.1	Extracted:	May-26-17 10:00	May-26-17 10:00	May-26-17 10:00	May-26-17 10:00	May-26-17 10:00	May-26-17 10:00
	Analyzed:	May-26-17 14:50	May-26-17 15:13	May-26-17 15:20	May-26-17 15:28	May-26-17 15:35	May-26-17 15:43
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		1300 4.95	1610 24.7	116 4.95	27.2 4.89	2160 24.6	2260 24.6
TPH By SW8015 Mod	Extracted:	May-26-17 11:00	May-26-17 11:00	May-26-17 11:00	May-26-17 11:00	May-26-17 11:00	May-26-17 11:00
	Analyzed:	May-26-17 18:35	May-26-17 18:54	May-26-17 19:54	May-26-17 20:18	May-26-17 20:39	May-26-17 20:59
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons		515 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	795 74.8	706 74.9
Diesel Range Organics		3080 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	5280 74.8	4430 74.9
Total TPH		3790 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	6650 74.8	5460 74.9

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Liz Givens
Project Manager



Certificate of Analysis Summary 553946

COG Operating LLC, Artesia, NM

Project Name: NG Phillips State #37



Project Id:

Contact: Dakota Neel

Project Location:

Date Received in Lab: Thu May-25-17 10:37 am

Report Date: 06-JUN-17

Project Manager: Liz Givens

Analysis Requested	Lab Id:	553946-019	553946-020	553946-021	553946-022	553946-023	553946-024
	Field Id:	T3	T3	T3	T3	T3	T3
	Depth:	2 ft	3 ft	4 ft	6 ft	8 ft	10 ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	May-23-17 10:00	May-23-17 10:00	May-23-17 10:00	May-23-17 10:00	May-23-17 10:00	May-23-17 10:00
BTEX by EPA 8021B	Extracted:	May-25-17 15:45	May-25-17 15:45	May-25-17 15:45	May-25-17 15:45	May-25-17 15:45	May-25-17 15:45
	Analyzed:	May-26-17 02:47	May-26-17 06:13	May-26-17 06:30	May-26-17 08:55	May-26-17 09:11	May-26-17 09:27
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00353 0.00353	0.00487 0.00373	<0.00377 0.00377	<0.00369 0.00369	0.00832 0.00357	<0.00344 0.00344
Toluene		0.0176 0.00353	0.0165 0.00373	<0.00377 0.00377	0.0125 0.00369	0.0110 0.00357	0.00466 0.00344
Ethylbenzene		0.0318 0.00353	0.249 0.00373	<0.00377 0.00377	0.0377 0.00369	<0.00357 0.00357	0.0263 0.00344
m,p-Xylenes		0.0488 0.00707	0.366 0.00746	0.0142 0.00755	0.0230 0.00738	0.0677 0.00714	<0.00687 0.00687
o-Xylene		0.0235 0.00353	0.0248 0.00373	<0.00377 0.00377	0.0232 0.00369	0.0159 0.00357	0.00395 0.00344
Total Xylenes		0.0723 0.00353	0.391 0.00373	0.0142 0.00377	0.0462 0.00369	0.0836 0.00357	0.00395 0.00344
Total BTEX		0.122 0.00353	0.661 0.00373	0.0142 0.00377	0.0964 0.00369	0.103 0.00357	0.0349 0.00344
Inorganic Anions by EPA 300/300.1	Extracted:	May-26-17 10:00	May-26-17 10:00	May-26-17 13:00	May-26-17 13:00	May-26-17 13:00	May-26-17 13:00
	Analyzed:	May-26-17 15:51	May-26-17 15:58	May-26-17 18:07	May-26-17 18:30	May-26-17 18:38	May-26-17 18:45
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		5770 49.4	1100 4.89	1050 4.93	716 4.90	62.0 4.98	94.1 4.88
TPH By SW8015 Mod	Extracted:	May-26-17 11:00	May-26-17 11:00	May-26-17 14:00	May-26-17 14:00	May-26-17 14:00	May-26-17 14:00
	Analyzed:	May-26-17 21:19	May-26-17 21:40	May-26-17 23:23	May-26-17 23:44	May-27-17 00:04	May-27-17 00:25
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons		149 75.0	1140 74.9	37.2 15.0	20.2 15.0	492 74.8	290 75.0
Diesel Range Organics		4240 75.0	9030 74.9	342 15.0	222 15.0	4700 74.8	2560 75.0
Total TPH		4650 75.0	10700 74.9	409 15.0	242 15.0	5570 74.8	2950 75.0

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Liz Givens
Project Manager



Certificate of Analysis Summary 553946

COG Operating LLC, Artesia, NM

Project Name: NG Phillips State #37



Project Id:

Contact: Dakota Neel

Project Location:

Date Received in Lab: Thu May-25-17 10:37 am

Report Date: 06-JUN-17

Project Manager: Liz Givens

Analysis Requested	Lab Id:	553946-025	553946-026	553946-027	553946-028	553946-029	553946-030
	Field Id:	T3	T4	T4	T4	T4	T4
	Depth:	12 ft		1 ft	2 ft	3 ft	4 ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	May-23-17 10:00	May-23-17 10:30	May-23-17 10:30	May-23-17 10:30	May-23-17 10:30	May-23-17 10:30
BTEX by EPA 8021B	Extracted:	May-25-17 15:45	May-25-17 15:45	May-25-17 15:45	May-26-17 09:30	May-26-17 09:30	May-25-17 15:45
	Analyzed:	May-26-17 09:43	May-26-17 09:59	May-26-17 10:15	May-26-17 17:06	May-26-17 17:22	May-26-17 08:39
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		0.00460 0.00352	<0.00341 0.00341	0.0132 0.00339	<0.00364 0.00364	<0.00375 0.00375	<0.00366 0.00366
Toluene		0.00648 0.00352	<0.00341 0.00341	0.308 0.00339	0.00805 0.00364	0.0102 0.00375	<0.00366 0.00366
Ethylbenzene		0.0143 0.00352	0.0191 0.00341	0.135 0.00339	<0.00364 0.00364	0.00702 0.00375	<0.00366 0.00366
m,p-Xylenes		<0.00704 0.00704	0.0250 0.00683	0.382 0.00678	<0.00727 0.00727	<0.00749 0.00749	<0.00733 0.00733
o-Xylene		0.0298 0.00352	<0.00341 0.00341	0.233 0.00339	<0.00364 0.00364	<0.00375 0.00375	<0.00366 0.00366
Total Xylenes		0.0298 0.00352	0.0250 0.00341	0.615 0.00339	<0.00364 0.00364	<0.00375 0.00375	<0.00366 0.00366
Total BTEX		0.0552 0.00352	0.0441 0.00341	1.07 0.00339	0.00805 0.00364	0.0172 0.00375	<0.00366 0.00366
Inorganic Anions by EPA 300/300.1	Extracted:	May-26-17 13:00	May-26-17 13:00	May-26-17 13:00	May-26-17 13:00	May-26-17 13:00	May-26-17 13:00
	Analyzed:	May-26-17 18:53	May-26-17 19:16	May-26-17 19:23	May-26-17 19:31	May-26-17 19:39	May-26-17 19:46
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		431 4.98	6170 49.0	2830 25.0	97.4 4.98	48.8 4.88	14.6 5.00
TPH By SW8015 Mod	Extracted:	May-26-17 14:00	May-26-17 14:00	May-26-17 14:00	May-26-17 14:00	May-26-17 14:00	May-26-17 14:00
	Analyzed:	May-27-17 00:46	May-27-17 01:06	May-27-17 01:28	May-27-17 01:48	May-27-17 02:09	May-27-17 02:30
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons		554 74.9	232 74.9	168 74.8	<14.9 14.9	<15.0 15.0	<15.0 15.0
Diesel Range Organics		3750 74.9	2640 74.9	671 74.8	<14.9 14.9	<15.0 15.0	<15.0 15.0
Total TPH		4480 74.9	3140 74.9	839 74.8	<14.9 14.9	<15.0 15.0	<15.0 15.0

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Liz Givens
Project Manager



Certificate of Analysis Summary 553946

COG Operating LLC, Artesia, NM

Project Name: NG Phillips State #37



Project Id:

Contact: Dakota Neel

Project Location:

Date Received in Lab: Thu May-25-17 10:37 am

Report Date: 06-JUN-17

Project Manager: Liz Givens

<i>Analysis Requested</i>	<i>Lab Id:</i>	553946-031	553946-032	553946-033	553946-034	553946-035	553946-036
	<i>Field Id:</i>	T4	T4	T4	T4	T4	T5
	<i>Depth:</i>	6 ft	8 ft	10 ft	12 ft	14 ft	
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	May-23-17 10:30	May-23-17 10:30	May-23-17 10:30	May-23-17 10:30	May-23-17 10:30	May-23-17 11:00
BTEX by EPA 8021B	<i>Extracted:</i>	May-26-17 09:30				May-25-17 15:45	May-26-17 09:30
	<i>Analyzed:</i>	May-26-17 12:42				May-26-17 07:51	May-26-17 14:36
	<i>Units/RL:</i>	mg/kg RL				mg/kg RL	mg/kg RL
Benzene		<0.00366 0.00366				<0.00375 0.00375	0.00390 0.00356
Toluene		<0.00366 0.00366				<0.00375 0.00375	0.0369 0.00356
Ethylbenzene		<0.00366 0.00366				<0.00375 0.00375	0.194 0.00356
m,p-Xylenes		<0.00733 0.00733				<0.00749 0.00749	0.117 0.00712
o-Xylene		<0.00366 0.00366				<0.00375 0.00375	0.162 0.00356
Total Xylenes		<0.00366 0.00366				<0.00375 0.00375	0.279 0.00356
Total BTEX		<0.00366 0.00366				<0.00375 0.00375	0.514 0.00356
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	May-26-17 13:00	May-26-17 13:00	May-26-17 13:00	May-26-17 13:00	May-26-17 13:00	May-26-17 13:00
	<i>Analyzed:</i>	May-26-17 19:54	May-26-17 20:17	May-26-17 20:24	May-26-17 20:47	May-26-17 20:55	May-26-17 21:02
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		11.6 4.93	7.70 4.98	11.5 4.91	4.83 4.83	6.50 4.87	5630 49.8
TPH By SW8015 Mod	<i>Extracted:</i>	May-26-17 14:00				May-26-17 14:00	May-26-17 14:00
	<i>Analyzed:</i>	May-27-17 08:11				May-27-17 08:32	May-27-17 09:34
	<i>Units/RL:</i>	mg/kg RL				mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons		<15.0 15.0				<15.0 15.0	2360 74.9
Diesel Range Organics		<15.0 15.0				26.3 15.0	17100 74.9
Total TPH		<15.0 15.0				26.3 15.0	20800 74.9

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Liz Givens
Project Manager



Certificate of Analysis Summary 553946

COG Operating LLC, Artesia, NM

Project Name: NG Phillips State #37



Project Id:

Contact: Dakota Neel

Project Location:

Date Received in Lab: Thu May-25-17 10:37 am

Report Date: 06-JUN-17

Project Manager: Liz Givens

<i>Analysis Requested</i>	<i>Lab Id:</i>	553946-037	553946-038	553946-039	553946-040	553946-041	553946-042
	<i>Field Id:</i>	T5	T5	T5	T5	T5	T5
	<i>Depth:</i>	1 ft	2 ft	3 ft	4 ft	6 ft	8 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	May-23-17 11:00	May-23-17 11:00	May-23-17 11:00	May-23-17 11:00	May-23-17 11:00	May-23-17 11:00
BTEX by EPA 8021B	<i>Extracted:</i>	Jun-01-17 16:30	May-26-17 09:30	May-26-17 09:30	May-26-17 09:30	May-26-17 16:30	May-26-17 09:30
	<i>Analyzed:</i>	Jun-02-17 08:15	May-26-17 16:00	May-26-17 13:15	May-26-17 13:31	May-27-17 13:24	May-26-17 14:04
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		0.0833 0.00201	<0.00500 0.00500	<0.00350 0.00350	<0.00356 0.00356	<0.00654 0.00654	<0.00370 0.00370
Toluene		56.6 D 1.74	<0.00500 0.00500	<0.00350 0.00350	<0.00356 0.00356	<0.00654 0.00654	<0.00370 0.00370
Ethylbenzene		145 D 1.74	<0.00500 0.00500	<0.00350 0.00350	<0.00356 0.00356	<0.00654 0.00654	<0.00370 0.00370
m,p-Xylenes		157 D 3.47	0.0428 0.0100	<0.00699 0.00699	<0.00712 0.00712	<0.0131 0.0131	<0.00741 0.00741
o-Xylene		70.3 D 1.74	<0.00500 0.00500	<0.00350 0.00350	<0.00356 0.00356	<0.00654 0.00654	<0.00370 0.00370
Total Xylenes		227 1.74	0.0428 0.00500	<0.00350 0.00350	<0.00356 0.00356	<0.00654 0.00654	<0.00370 0.00370
Total BTEX		429 0.00201	0.0428 0.00500	<0.00350 0.00350	<0.00356 0.00356	<0.00654 0.00654	<0.00370 0.00370
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	May-26-17 13:00	May-26-17 13:00	May-26-17 13:00	May-26-17 13:00	May-26-17 15:52	May-26-17 15:52
	<i>Analyzed:</i>	May-26-17 21:10	May-26-17 21:17	May-26-17 21:25	May-26-17 21:33	May-26-17 22:18	May-26-17 22:41
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		4880 24.9	1800 24.9	60.1 4.90	8.39 4.98	7.74 4.87	5.29 4.96
TPH By SW8015 Mod	<i>Extracted:</i>	May-26-17 14:00	May-26-17 14:00	May-26-17 14:00	May-26-17 14:00	May-26-17 14:00	May-26-17 14:00
	<i>Analyzed:</i>	May-27-17 09:55	May-27-17 10:16	May-27-17 10:38	May-27-17 10:59	May-27-17 11:20	May-27-17 11:41
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons		5320 74.9	29.5 15.0	<14.9 14.9	<14.9 14.9	<15.0 15.0	<15.0 15.0
Diesel Range Organics		18000 74.9	144 15.0	<14.9 14.9	<14.9 14.9	<15.0 15.0	<15.0 15.0
Total TPH		24700 74.9	174 15.0	<14.9 14.9	<14.9 14.9	<15.0 15.0	<15.0 15.0

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

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Version: 1.0%

Liz Givens
Project Manager



Certificate of Analysis Summary 553946

COG Operating LLC, Artesia, NM

Project Name: NG Phillips State #37



Project Id:

Contact: Dakota Neel

Project Location:

Date Received in Lab: Thu May-25-17 10:37 am

Report Date: 06-JUN-17

Project Manager: Liz Givens

Analysis Requested	Lab Id:	553946-043					
	Field Id:	T5					
	Depth:	14 ft					
	Matrix:	SOIL					
	Sampled:	May-23-17 11:00					
BTEX by EPA 8021B	Extracted:	May-26-17 09:30					
	Analyzed:	May-26-17 14:20					
	Units/RL:	mg/kg RL					
Benzene		<0.00376 0.00376					
Toluene		<0.00376 0.00376					
Ethylbenzene		<0.00376 0.00376					
m,p-Xylenes		<0.00752 0.00752					
o-Xylene		<0.00376 0.00376					
Total Xylenes		<0.00376 0.00376					
Total BTEX		<0.00376 0.00376					
Inorganic Anions by EPA 300/300.1	Extracted:	May-26-17 15:52					
	Analyzed:	May-26-17 22:49					
	Units/RL:	mg/kg RL					
Chloride		5.10 4.94					
TPH By SW8015 Mod	Extracted:	May-26-17 14:00					
	Analyzed:	May-27-17 12:01					
	Units/RL:	mg/kg RL					
Gasoline Range Hydrocarbons		<15.0 15.0					
Diesel Range Organics		<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.

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Version: 1.0%

Liz Givens
Project Manager

Analytical Report 553946

for
COG Operating LLC

Project Manager: Dakota Neel

NG Phillips State #37

06-JUN-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)



06-JUN-17

Project Manager: **Dakota Neel**

COG Operating LLC

2407 Pecos Avenue

Artesia, NM 88210

Reference: XENCO Report No(s): **553946**

NG Phillips State #37

Project Address:

Dakota Neel:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 553946. 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. 553946 will be filed for 60 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,

Liz Givens

Project Manager

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

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COG Operating LLC, Artesia, NM

NG Phillips State #37

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
T1	S	05-23-17 09:00	N/A	553946-001
T1	S	05-23-17 09:00	- 1 ft	553946-002
T1	S	05-23-17 09:00	- 2 ft	553946-003
T1	S	05-23-17 09:00	- 3 ft	553946-004
T1	S	05-23-17 09:00	- 4 ft	553946-005
T1	S	05-23-17 09:00	- 6 ft	553946-006
T1	S	05-23-17 09:00	- 7 ft	553946-007
T2	S	05-23-17 09:30	N/A	553946-008
T2	S	05-23-17 09:30	- 1 ft	553946-009
T2	S	05-23-17 09:30	- 2 ft	553946-010
T2	S	05-23-17 09:30	- 3 ft	553946-011
T2	S	05-23-17 09:30	- 4 ft	553946-012
T2	S	05-23-17 09:30	- 6 ft	553946-013
T2	S	05-23-17 09:30	- 8 ft	553946-014
T2	S	05-23-17 09:30	- 10 ft	553946-015
T2	S	05-23-17 09:30	- 12 ft	553946-016
T3	S	05-23-17 10:00	N/A	553946-017
T3	S	05-23-17 10:00	- 1 ft	553946-018
T3	S	05-23-17 10:00	- 2 ft	553946-019
T3	S	05-23-17 10:00	- 3 ft	553946-020
T3	S	05-23-17 10:00	- 4 ft	553946-021
T3	S	05-23-17 10:00	- 6 ft	553946-022
T3	S	05-23-17 10:00	- 8 ft	553946-023
T3	S	05-23-17 10:00	- 10 ft	553946-024
T3	S	05-23-17 10:00	- 12 ft	553946-025
T4	S	05-23-17 10:30	N/A	553946-026
T4	S	05-23-17 10:30	- 1 ft	553946-027
T4	S	05-23-17 10:30	- 2 ft	553946-028
T4	S	05-23-17 10:30	- 3 ft	553946-029
T4	S	05-23-17 10:30	- 4 ft	553946-030
T4	S	05-23-17 10:30	- 6 ft	553946-031
T4	S	05-23-17 10:30	- 8 ft	553946-032
T4	S	05-23-17 10:30	- 10 ft	553946-033
T4	S	05-23-17 10:30	- 12 ft	553946-034
T4	S	05-23-17 10:30	- 14 ft	553946-035
T5	S	05-23-17 11:00	N/A	553946-036
T5	S	05-23-17 11:00	- 1 ft	553946-037
T5	S	05-23-17 11:00	- 2 ft	553946-038
T5	S	05-23-17 11:00	- 3 ft	553946-039
T5	S	05-23-17 11:00	- 4 ft	553946-040
T5	S	05-23-17 11:00	- 6 ft	553946-041
T5	S	05-23-17 11:00	- 8 ft	553946-042
T5	S	05-23-17 11:00	- 14 ft	553946-043



CASE NARRATIVE

Client Name: COG Operating LLC

Project Name: NG Phillips State #37

Project ID:
Work Order Number(s): 553946

Report Date: 06-JUN-17
Date Received: 05/25/2017

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3018244 BTEX by EPA 8021B

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

Batch: LBA-3018587 BTEX by EPA 8021B

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

Lab Sample ID 553946-035 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Benzene, 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: 553946-012, -013, -014, -015, -016, -017, -018, -019, -020, -021, -022, -023, -024, -025, -026, -027, -030, -035.

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

Batch: LBA-3018590 BTEX by EPA 8021B

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

Batch: LBA-3018592 BTEX by EPA 8021B

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

Batch: LBA-3018826 BTEX by EPA 8021B

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



Certificate of Analytical Results 553946



COG Operating LLC, Artesia, NM

NG Phillips State #37

Sample Id: T1
Lab Sample Id: 553946-001

Matrix: Soil
Date Collected: 05.23.17 09.00

Date Received: 05.25.17 10.37

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MGO

Analyst: MGO

Seq Number: 3018386

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Date Prep: 05.26.17 10.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	314	4.99	mg/kg	05.26.17 11.56		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3018362

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Date Prep: 05.26.17 11.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	05.26.17 13.32	U	1
Diesel Range Organics	C10C28DRO	749	15.0	mg/kg	05.26.17 13.32		1
Total TPH	PHC635	840	15.0	mg/kg	05.26.17 13.32		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	05.26.17 13.32	
o-Terphenyl	84-15-1	106	%	70-135	05.26.17 13.32	

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3018590

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Date Prep: 05.26.17 09.30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00341	0.00341	mg/kg	05.26.17 16.33	U	1
Toluene	108-88-3	<0.00341	0.00341	mg/kg	05.26.17 16.33	U	1
Ethylbenzene	100-41-4	<0.00341	0.00341	mg/kg	05.26.17 16.33	U	1
m,p-Xylenes	179601-23-1	<0.00683	0.00683	mg/kg	05.26.17 16.33	U	1
o-Xylene	95-47-6	<0.00341	0.00341	mg/kg	05.26.17 16.33	U	1
Total Xylenes	1330-20-7	<0.00341	0.00341	mg/kg	05.26.17 16.33	U	1
Total BTEX		<0.00341	0.00341	mg/kg	05.26.17 16.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	108	%	80-120	05.26.17 16.33	
4-Bromofluorobenzene	460-00-4	97	%	80-120	05.26.17 16.33	



Certificate of Analytical Results 553946



COG Operating LLC, Artesia, NM

NG Phillips State #37

Sample Id: T1 Matrix: Soil Date Received: 05.25.17 10.37
Lab Sample Id: 553946-002 Date Collected: 05.23.17 09.00 Sample Depth: 1 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.26.17 10.00 Basis: Wet Weight
Seq Number: 3018386

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	476	4.99	mg/kg	05.26.17 12.56		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.26.17 11.00 Basis: Wet Weight
Seq Number: 3018362

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	05.26.17 13.52	U	1
Diesel Range Organics	C10C28DRO	99.8	15.0	mg/kg	05.26.17 13.52		1
Total TPH	PHC635	99.8	15.0	mg/kg	05.26.17 13.52		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	102	%	70-135	05.26.17 13.52		
o-Terphenyl	84-15-1	104	%	70-135	05.26.17 13.52		

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: ALJ % Moisture:
Analyst: ALJ Date Prep: 05.25.17 13.00 Basis: Wet Weight
Seq Number: 3018244

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.00387	0.00341	mg/kg	05.25.17 20.20		1
Toluene	108-88-3	0.00799	0.00341	mg/kg	05.25.17 20.20		1
Ethylbenzene	100-41-4	<0.00341	0.00341	mg/kg	05.25.17 20.20	U	1
m,p-Xylenes	179601-23-1	<0.00683	0.00683	mg/kg	05.25.17 20.20	U	1
o-Xylene	95-47-6	<0.00341	0.00341	mg/kg	05.25.17 20.20	U	1
Total Xylenes	1330-20-7	<0.00341	0.00341	mg/kg	05.25.17 20.20	U	1
Total BTEX		0.0119	0.00341	mg/kg	05.25.17 20.20		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	109	%	80-120	05.25.17 20.20		
4-Bromofluorobenzene	460-00-4	94	%	80-120	05.25.17 20.20		



Certificate of Analytical Results 553946



COG Operating LLC, Artesia, NM

NG Phillips State #37

Sample Id: T1 Matrix: Soil Date Received: 05.25.17 10.37
Lab Sample Id: 553946-003 Date Collected: 05.23.17 09.00 Sample Depth: 2 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.26.17 10.00 Basis: Wet Weight
Seq Number: 3018386

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	618	4.96	mg/kg	05.26.17 13.03		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.26.17 11.00 Basis: Wet Weight
Seq Number: 3018362

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	169	15.0	mg/kg	05.26.17 14.12		1
Diesel Range Organics	C10C28DRO	3550	15.0	mg/kg	05.26.17 14.12		1
Total TPH	PHC635	4090	15.0	mg/kg	05.26.17 14.12		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	113	%	70-135	05.26.17 14.12		
o-Terphenyl	84-15-1	90	%	70-135	05.26.17 14.12		

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: ALJ % Moisture:
Analyst: ALJ Date Prep: 05.25.17 13.00 Basis: Wet Weight
Seq Number: 3018244

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.00664	0.00348	mg/kg	05.25.17 20.36		1
Toluene	108-88-3	0.00990	0.00348	mg/kg	05.25.17 20.36		1
Ethylbenzene	100-41-4	<0.00348	0.00348	mg/kg	05.25.17 20.36	U	1
m,p-Xylenes	179601-23-1	<0.00697	0.00697	mg/kg	05.25.17 20.36	U	1
o-Xylene	95-47-6	<0.00348	0.00348	mg/kg	05.25.17 20.36	U	1
Total Xylenes	1330-20-7	<0.00348	0.00348	mg/kg	05.25.17 20.36	U	1
Total BTEX		0.0165	0.00348	mg/kg	05.25.17 20.36		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	83	%	80-120	05.25.17 20.36		
1,4-Difluorobenzene	540-36-3	99	%	80-120	05.25.17 20.36		



Certificate of Analytical Results 553946



COG Operating LLC, Artesia, NM

NG Phillips State #37

Sample Id: T1 Matrix: Soil Date Received: 05.25.17 10.37
Lab Sample Id: 553946-004 Date Collected: 05.23.17 09.00 Sample Depth: 3 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.26.17 10.00 Basis: Wet Weight
Seq Number: 3018386

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2590	24.8	mg/kg	05.26.17 13.11		5

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.26.17 11.00 Basis: Wet Weight
Seq Number: 3018362

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	793	74.9	mg/kg	05.26.17 14.56		5
Diesel Range Organics	C10C28DRO	5600	74.9	mg/kg	05.26.17 14.56		5
Total TPH	PHC635	6550	74.9	mg/kg	05.26.17 14.56		5
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	99	%	70-135	05.26.17 14.56		
o-Terphenyl	84-15-1	85	%	70-135	05.26.17 14.56		

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: ALJ % Moisture:
Analyst: ALJ Date Prep: 05.25.17 13.00 Basis: Wet Weight
Seq Number: 3018244

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00358	0.00358	mg/kg	05.25.17 20.53	U	1
Toluene	108-88-3	0.00471	0.00358	mg/kg	05.25.17 20.53		1
Ethylbenzene	100-41-4	0.0489	0.00358	mg/kg	05.25.17 20.53		1
m,p-Xylenes	179601-23-1	0.0867	0.00717	mg/kg	05.25.17 20.53		1
o-Xylene	95-47-6	0.0816	0.00358	mg/kg	05.25.17 20.53		1
Total Xylenes	1330-20-7	0.168	0.00358	mg/kg	05.25.17 20.53		1
Total BTEX		0.222	0.00358	mg/kg	05.25.17 20.53		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	97	%	80-120	05.25.17 20.53		
4-Bromofluorobenzene	460-00-4	110	%	80-120	05.25.17 20.53		



Certificate of Analytical Results 553946



COG Operating LLC, Artesia, NM

NG Phillips State #37

Sample Id: T1 Matrix: Soil Date Received: 05.25.17 10.37
Lab Sample Id: 553946-005 Date Collected: 05.23.17 09.00 Sample Depth: 4 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.26.17 10.00 Basis: Wet Weight
Seq Number: 3018386

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	862	4.91	mg/kg	05.26.17 13.19		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.26.17 11.00 Basis: Wet Weight
Seq Number: 3018362

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	900	74.7	mg/kg	05.26.17 15.16		5
Diesel Range Organics	C10C28DRO	3990	74.7	mg/kg	05.26.17 15.16		5
Total TPH	PHC635	4970	74.7	mg/kg	05.26.17 15.16		5
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	102	%	70-135	05.26.17 15.16		
o-Terphenyl	84-15-1	90	%	70-135	05.26.17 15.16		

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: ALJ % Moisture:
Analyst: ALJ Date Prep: 05.25.17 13.00 Basis: Wet Weight
Seq Number: 3018244

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.00698	0.00356	mg/kg	05.25.17 21.09		1
Toluene	108-88-3	0.0163	0.00356	mg/kg	05.25.17 21.09		1
Ethylbenzene	100-41-4	0.105	0.00356	mg/kg	05.25.17 21.09		1
m,p-Xylenes	179601-23-1	0.183	0.00712	mg/kg	05.25.17 21.09		1
o-Xylene	95-47-6	0.292	0.00356	mg/kg	05.25.17 21.09		1
Total Xylenes	1330-20-7	0.475	0.00356	mg/kg	05.25.17 21.09		1
Total BTEX		0.603	0.00356	mg/kg	05.25.17 21.09		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	114	%	80-120	05.25.17 21.09		
1,4-Difluorobenzene	540-36-3	100	%	80-120	05.25.17 21.09		



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COG Operating LLC, Artesia, NM

NG Phillips State #37

Sample Id: T1 Matrix: Soil Date Received: 05.25.17 10.37
Lab Sample Id: 553946-006 Date Collected: 05.23.17 09.00 Sample Depth: 6 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.26.17 10.00 Basis: Wet Weight
Seq Number: 3018386

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	616	4.92	mg/kg	05.26.17 13.41		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.26.17 11.00 Basis: Wet Weight
Seq Number: 3018362

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	1350	74.9	mg/kg	05.26.17 15.37		5
Diesel Range Organics	C10C28DRO	4210	74.9	mg/kg	05.26.17 15.37		5
Total TPH	PHC635	5690	74.9	mg/kg	05.26.17 15.37		5
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	110	%	70-135	05.26.17 15.37		
o-Terphenyl	84-15-1	92	%	70-135	05.26.17 15.37		

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: ALJ % Moisture:
Analyst: ALJ Date Prep: 05.25.17 13.00 Basis: Wet Weight
Seq Number: 3018244

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.00505	0.00345	mg/kg	05.25.17 21.25		1
Toluene	108-88-3	0.0197	0.00345	mg/kg	05.25.17 21.25		1
Ethylbenzene	100-41-4	0.292	0.00345	mg/kg	05.25.17 21.25		1
m,p-Xylenes	179601-23-1	0.646	0.00690	mg/kg	05.25.17 21.25		1
o-Xylene	95-47-6	0.676	0.00345	mg/kg	05.25.17 21.25		1
Total Xylenes	1330-20-7	1.32	0.00345	mg/kg	05.25.17 21.25		1
Total BTEX		1.64	0.00345	mg/kg	05.25.17 21.25		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	93	%	80-120	05.25.17 21.25		
1,4-Difluorobenzene	540-36-3	84	%	80-120	05.25.17 21.25		



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COG Operating LLC, Artesia, NM

NG Phillips State #37

Sample Id: T1 Matrix: Soil Date Received: 05.25.17 10.37
Lab Sample Id: 553946-007 Date Collected: 05.23.17 09.00 Sample Depth: 7 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.26.17 10.00 Basis: Wet Weight
Seq Number: 3018386

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	596	4.96	mg/kg	05.26.17 13.49		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.26.17 11.00 Basis: Wet Weight
Seq Number: 3018362

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	1290	74.9	mg/kg	05.26.17 15.58		5
Diesel Range Organics	C10C28DRO	4710	74.9	mg/kg	05.26.17 15.58		5
Total TPH	PHC635	6190	74.9	mg/kg	05.26.17 15.58		5
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	126	%	70-135	05.26.17 15.58		
o-Terphenyl	84-15-1	115	%	70-135	05.26.17 15.58		

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: ALJ % Moisture:
Analyst: ALJ Date Prep: 05.25.17 13.00 Basis: Wet Weight
Seq Number: 3018244

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00360	0.00360	mg/kg	05.25.17 21.41	U	1
Toluene	108-88-3	0.0165	0.00360	mg/kg	05.25.17 21.41		1
Ethylbenzene	100-41-4	0.264	0.00360	mg/kg	05.25.17 21.41		1
m,p-Xylenes	179601-23-1	0.525	0.00719	mg/kg	05.25.17 21.41		1
o-Xylene	95-47-6	0.567	0.00360	mg/kg	05.25.17 21.41		1
Total Xylenes	1330-20-7	1.09	0.00360	mg/kg	05.25.17 21.41		1
Total BTEX		1.37	0.00360	mg/kg	05.25.17 21.41		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	105	%	80-120	05.25.17 21.41		
1,4-Difluorobenzene	540-36-3	89	%	80-120	05.25.17 21.41		



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COG Operating LLC, Artesia, NM

NG Phillips State #37

Sample Id: T2 Matrix: Soil Date Received: 05.25.17 10.37
Lab Sample Id: 553946-008 Date Collected: 05.23.17 09.30
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.26.17 10.00 Basis: Wet Weight
Seq Number: 3018386

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1070	24.4	mg/kg	05.26.17 13.57		5

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.26.17 11.00 Basis: Wet Weight
Seq Number: 3018362

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	1600	75.0	mg/kg	05.26.17 16.17		5
Diesel Range Organics	C10C28DRO	11900	75.0	mg/kg	05.26.17 16.17		5
Total TPH	PHC635	14300	75.0	mg/kg	05.26.17 16.17		5
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	111	%	70-135	05.26.17 16.17		
o-Terphenyl	84-15-1	106	%	70-135	05.26.17 16.17		

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: ALJ % Moisture:
Analyst: ALJ Date Prep: 05.26.17 09.30 Basis: Wet Weight
Seq Number: 3018590

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.0664	0.00348	mg/kg	05.26.17 17.55		1
Toluene	108-88-3	0.680	0.00348	mg/kg	05.26.17 17.55		1
Ethylbenzene	100-41-4	0.686	0.00348	mg/kg	05.26.17 17.55		1
m,p-Xylenes	179601-23-1	1.06	0.00697	mg/kg	05.26.17 17.55		1
o-Xylene	95-47-6	0.403	0.00348	mg/kg	05.26.17 17.55		1
Total Xylenes	1330-20-7	1.46	0.00348	mg/kg	05.26.17 17.55		1
Total BTEX		2.90	0.00348	mg/kg	05.26.17 17.55		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	85	%	80-120	05.26.17 17.55		
1,4-Difluorobenzene	540-36-3	96	%	80-120	05.26.17 17.55		



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COG Operating LLC, Artesia, NM

NG Phillips State #37

Sample Id: T2 Matrix: Soil Date Received: 05.25.17 10.37
Lab Sample Id: 553946-009 Date Collected: 05.23.17 09.30 Sample Depth: 1 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.26.17 10.00 Basis: Wet Weight
Seq Number: 3018386

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2420	25.0	mg/kg	05.26.17 14.04		5

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.26.17 11.00 Basis: Wet Weight
Seq Number: 3018362

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	387	74.8	mg/kg	05.26.17 16.37		5
Diesel Range Organics	C10C28DRO	4170	74.8	mg/kg	05.26.17 16.37		5
Total TPH	PHC635	4650	74.8	mg/kg	05.26.17 16.37		5
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	122	%	70-135	05.26.17 16.37		
o-Terphenyl	84-15-1	110	%	70-135	05.26.17 16.37		

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: ALJ % Moisture:
Analyst: ALJ Date Prep: 05.25.17 13.00 Basis: Wet Weight
Seq Number: 3018244

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.0187	0.00341	mg/kg	05.25.17 22.30		1
Toluene	108-88-3	0.0521	0.00341	mg/kg	05.25.17 22.30		1
Ethylbenzene	100-41-4	0.204	0.00341	mg/kg	05.25.17 22.30		1
m,p-Xylenes	179601-23-1	0.322	0.00683	mg/kg	05.25.17 22.30		1
o-Xylene	95-47-6	0.223	0.00341	mg/kg	05.25.17 22.30		1
Total Xylenes	1330-20-7	0.545	0.00341	mg/kg	05.25.17 22.30		1
Total BTEX		0.820	0.00341	mg/kg	05.25.17 22.30		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	88	%	80-120	05.25.17 22.30		
1,4-Difluorobenzene	540-36-3	80	%	80-120	05.25.17 22.30		



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COG Operating LLC, Artesia, NM

NG Phillips State #37

Sample Id: T2 Matrix: Soil Date Received: 05.25.17 10.37
Lab Sample Id: 553946-010 Date Collected: 05.23.17 09.30 Sample Depth: 2 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.26.17 10.00 Basis: Wet Weight
Seq Number: 3018386

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	222	4.96	mg/kg	05.26.17 14.12		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.26.17 11.00 Basis: Wet Weight
Seq Number: 3018362

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	390	74.9	mg/kg	05.26.17 16.56		5
Diesel Range Organics	C10C28DRO	2420	74.9	mg/kg	05.26.17 16.56		5
Total TPH	PHC635	2890	74.9	mg/kg	05.26.17 16.56		5
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	109	%	70-135	05.26.17 16.56		
o-Terphenyl	84-15-1	99	%	70-135	05.26.17 16.56		

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: ALJ % Moisture:
Analyst: ALJ Date Prep: 05.26.17 09.30 Basis: Wet Weight
Seq Number: 3018590

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00351	0.00351	mg/kg	05.26.17 18.11	U	1
Toluene	108-88-3	0.0202	0.00351	mg/kg	05.26.17 18.11		1
Ethylbenzene	100-41-4	0.0283	0.00351	mg/kg	05.26.17 18.11		1
m,p-Xylenes	179601-23-1	0.0378	0.00702	mg/kg	05.26.17 18.11		1
o-Xylene	95-47-6	<0.00351	0.00351	mg/kg	05.26.17 18.11	U	1
Total Xylenes	1330-20-7	0.0378	0.00351	mg/kg	05.26.17 18.11		1
Total BTEX		0.0863	0.00351	mg/kg	05.26.17 18.11		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	82	%	80-120	05.26.17 18.11		
4-Bromofluorobenzene	460-00-4	87	%	80-120	05.26.17 18.11		



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COG Operating LLC, Artesia, NM

NG Phillips State #37

Sample Id: T2 Matrix: Soil Date Received: 05.25.17 10.37
Lab Sample Id: 553946-011 Date Collected: 05.23.17 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: 05.26.17 10.00 Basis: Wet Weight
Seq Number: 3018386

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	175	4.88	mg/kg	05.26.17 14.19		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.26.17 11.00 Basis: Wet Weight
Seq Number: 3018362

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	41.0	14.9	mg/kg	05.27.17 16.29		1
Diesel Range Organics	C10C28DRO	2170	14.9	mg/kg	05.27.17 16.29		1
Total TPH	PHC635	2460	14.9	mg/kg	05.27.17 16.29		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	114	%	70-135	05.27.17 16.29		
o-Terphenyl	84-15-1	116	%	70-135	05.27.17 16.29		

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: ALJ % Moisture:
Analyst: ALJ Date Prep: 05.26.17 09.30 Basis: Wet Weight
Seq Number: 3018590

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00345	0.00345	mg/kg	05.26.17 17.39	U	1
Toluene	108-88-3	0.00929	0.00345	mg/kg	05.26.17 17.39		1
Ethylbenzene	100-41-4	<0.00345	0.00345	mg/kg	05.26.17 17.39	U	1
m,p-Xylenes	179601-23-1	0.00722	0.00690	mg/kg	05.26.17 17.39		1
o-Xylene	95-47-6	<0.00345	0.00345	mg/kg	05.26.17 17.39	U	1
Total Xylenes	1330-20-7	0.00722	0.00345	mg/kg	05.26.17 17.39		1
Total BTEX		0.0165	0.00345	mg/kg	05.26.17 17.39		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	88	%	80-120	05.26.17 17.39		
1,4-Difluorobenzene	540-36-3	90	%	80-120	05.26.17 17.39		



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COG Operating LLC, Artesia, NM

NG Phillips State #37

Sample Id: T2 Matrix: Soil Date Received: 05.25.17 10.37
Lab Sample Id: 553946-012 Date Collected: 05.23.17 09.30 Sample Depth: 4 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.26.17 10.00 Basis: Wet Weight
Seq Number: 3018386

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	145	5.00	mg/kg	05.26.17 14.42		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.26.17 11.00 Basis: Wet Weight
Seq Number: 3018362

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	298	74.8	mg/kg	05.26.17 18.15		5
Diesel Range Organics	C10C28DRO	3170	74.8	mg/kg	05.26.17 18.15		5
Total TPH	PHC635	3620	74.8	mg/kg	05.26.17 18.15		5
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	102	%	70-135	05.26.17 18.15		
o-Terphenyl	84-15-1	128	%	70-135	05.26.17 18.15		

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: ALJ % Moisture:
Analyst: ALJ Date Prep: 05.25.17 15.45 Basis: Wet Weight
Seq Number: 3018587

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.00461	0.00357	mg/kg	05.26.17 01.26		1
Toluene	108-88-3	0.00632	0.00357	mg/kg	05.26.17 01.26		1
Ethylbenzene	100-41-4	<0.00357	0.00357	mg/kg	05.26.17 01.26	U	1
m,p-Xylenes	179601-23-1	<0.00714	0.00714	mg/kg	05.26.17 01.26	U	1
o-Xylene	95-47-6	<0.00357	0.00357	mg/kg	05.26.17 01.26	U	1
Total Xylenes	1330-20-7	<0.00357	0.00357	mg/kg	05.26.17 01.26	U	1
Total BTEX		0.0109	0.00357	mg/kg	05.26.17 01.26		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	85	%	80-120	05.26.17 01.26		
1,4-Difluorobenzene	540-36-3	86	%	80-120	05.26.17 01.26		



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COG Operating LLC, Artesia, NM

NG Phillips State #37

Sample Id: T2 Matrix: Soil Date Received: 05.25.17 10.37
Lab Sample Id: 553946-013 Date Collected: 05.23.17 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: 05.26.17 10.00 Basis: Wet Weight
Seq Number: 3018386

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1300	4.95	mg/kg	05.26.17 14.50		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.26.17 11.00 Basis: Wet Weight
Seq Number: 3018362

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	515	14.9	mg/kg	05.26.17 18.35		1
Diesel Range Organics	C10C28DRO	3080	14.9	mg/kg	05.26.17 18.35		1
Total TPH	PHC635	3790	14.9	mg/kg	05.26.17 18.35		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	114	%	70-135	05.26.17 18.35		
o-Terphenyl	84-15-1	113	%	70-135	05.26.17 18.35		

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: ALJ % Moisture:
Analyst: ALJ Date Prep: 05.25.17 15.45 Basis: Wet Weight
Seq Number: 3018587

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.00850	0.00345	mg/kg	05.26.17 06.46		1
Toluene	108-88-3	0.00819	0.00345	mg/kg	05.26.17 06.46		1
Ethylbenzene	100-41-4	<0.00345	0.00345	mg/kg	05.26.17 06.46	U	1
m,p-Xylenes	179601-23-1	<0.00690	0.00690	mg/kg	05.26.17 06.46	U	1
o-Xylene	95-47-6	<0.00345	0.00345	mg/kg	05.26.17 06.46	U	1
Total Xylenes	1330-20-7	<0.00345	0.00345	mg/kg	05.26.17 06.46	U	1
Total BTEX		0.0167	0.00345	mg/kg	05.26.17 06.46		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	85	%	80-120	05.26.17 06.46		
1,4-Difluorobenzene	540-36-3	103	%	80-120	05.26.17 06.46		



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COG Operating LLC, Artesia, NM

NG Phillips State #37

Sample Id: T2 Matrix: Soil Date Received: 05.25.17 10.37
Lab Sample Id: 553946-014 Date Collected: 05.23.17 09.30 Sample Depth: 8 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.26.17 10.00 Basis: Wet Weight
Seq Number: 3018386

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1610	24.7	mg/kg	05.26.17 15.13		5

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.26.17 11.00 Basis: Wet Weight
Seq Number: 3018362

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	05.26.17 18.54	U	1
Diesel Range Organics	C10C28DRO	<15.0	15.0	mg/kg	05.26.17 18.54	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.26.17 18.54	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	103	%	70-135	05.26.17 18.54		
o-Terphenyl	84-15-1	105	%	70-135	05.26.17 18.54		

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: ALJ % Moisture:
Analyst: ALJ Date Prep: 05.25.17 15.45 Basis: Wet Weight
Seq Number: 3018587

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00344	0.00344	mg/kg	05.26.17 01.42	U	1
Toluene	108-88-3	<0.00344	0.00344	mg/kg	05.26.17 01.42	U	1
Ethylbenzene	100-41-4	<0.00344	0.00344	mg/kg	05.26.17 01.42	U	1
m,p-Xylenes	179601-23-1	<0.00687	0.00687	mg/kg	05.26.17 01.42	U	1
o-Xylene	95-47-6	<0.00344	0.00344	mg/kg	05.26.17 01.42	U	1
Total Xylenes	1330-20-7	<0.00344	0.00344	mg/kg	05.26.17 01.42	U	1
Total BTEX		<0.00344	0.00344	mg/kg	05.26.17 01.42	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	98	%	80-120	05.26.17 01.42		
1,4-Difluorobenzene	540-36-3	100	%	80-120	05.26.17 01.42		



Certificate of Analytical Results 553946



COG Operating LLC, Artesia, NM

NG Phillips State #37

Sample Id: T2 Matrix: Soil Date Received: 05.25.17 10.37
Lab Sample Id: 553946-015 Date Collected: 05.23.17 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: 05.26.17 10.00 Basis: Wet Weight
Seq Number: 3018386

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	116	4.95	mg/kg	05.26.17 15.20		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.26.17 11.00 Basis: Wet Weight
Seq Number: 3018362

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	05.26.17 19.54	U	1
Diesel Range Organics	C10C28DRO	<15.0	15.0	mg/kg	05.26.17 19.54	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.26.17 19.54	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	99	%	70-135	05.26.17 19.54		
o-Terphenyl	84-15-1	100	%	70-135	05.26.17 19.54		

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: ALJ % Moisture:
Analyst: ALJ Date Prep: 05.25.17 15.45 Basis: Wet Weight
Seq Number: 3018587

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00364	0.00364	mg/kg	05.26.17 01.58	U	1
Toluene	108-88-3	<0.00364	0.00364	mg/kg	05.26.17 01.58	U	1
Ethylbenzene	100-41-4	<0.00364	0.00364	mg/kg	05.26.17 01.58	U	1
m,p-Xylenes	179601-23-1	<0.00727	0.00727	mg/kg	05.26.17 01.58	U	1
o-Xylene	95-47-6	<0.00364	0.00364	mg/kg	05.26.17 01.58	U	1
Total Xylenes	1330-20-7	<0.00364	0.00364	mg/kg	05.26.17 01.58	U	1
Total BTEX		<0.00364	0.00364	mg/kg	05.26.17 01.58	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	105	%	80-120	05.26.17 01.58		
1,4-Difluorobenzene	540-36-3	87	%	80-120	05.26.17 01.58		



Certificate of Analytical Results 553946



COG Operating LLC, Artesia, NM

NG Phillips State #37

Sample Id: T2 Matrix: Soil Date Received: 05.25.17 10.37
Lab Sample Id: 553946-016 Date Collected: 05.23.17 09.30 Sample Depth: 12 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.26.17 10.00 Basis: Wet Weight
Seq Number: 3018386

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	27.2	4.89	mg/kg	05.26.17 15.28		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.26.17 11.00 Basis: Wet Weight
Seq Number: 3018362

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	05.26.17 20.18	U	1
Diesel Range Organics	C10C28DRO	<15.0	15.0	mg/kg	05.26.17 20.18	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.26.17 20.18	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	96	%	70-135	05.26.17 20.18		
o-Terphenyl	84-15-1	99	%	70-135	05.26.17 20.18		

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: ALJ % Moisture:
Analyst: ALJ Date Prep: 05.25.17 15.45 Basis: Wet Weight
Seq Number: 3018587

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00361	0.00361	mg/kg	05.26.17 02.15	U	1
Toluene	108-88-3	<0.00361	0.00361	mg/kg	05.26.17 02.15	U	1
Ethylbenzene	100-41-4	<0.00361	0.00361	mg/kg	05.26.17 02.15	U	1
m,p-Xylenes	179601-23-1	<0.00722	0.00722	mg/kg	05.26.17 02.15	U	1
o-Xylene	95-47-6	<0.00361	0.00361	mg/kg	05.26.17 02.15	U	1
Total Xylenes	1330-20-7	<0.00361	0.00361	mg/kg	05.26.17 02.15	U	1
Total BTEX		<0.00361	0.00361	mg/kg	05.26.17 02.15	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	87	%	80-120	05.26.17 02.15		
4-Bromofluorobenzene	460-00-4	98	%	80-120	05.26.17 02.15		



Certificate of Analytical Results 553946



COG Operating LLC, Artesia, NM

NG Phillips State #37

Sample Id: T3
Lab Sample Id: 553946-017

Matrix: Soil
Date Collected: 05.23.17 10.00

Date Received: 05.25.17 10.37

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MGO

Analyst: MGO

Seq Number: 3018386

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Date Prep: 05.26.17 10.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2160	24.6	mg/kg	05.26.17 15.35		5

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3018362

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Date Prep: 05.26.17 11.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	795	74.8	mg/kg	05.26.17 20.39		5
Diesel Range Organics	C10C28DRO	5280	74.8	mg/kg	05.26.17 20.39		5
Total TPH	PHC635	6650	74.8	mg/kg	05.26.17 20.39		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	132	%	70-135	05.26.17 20.39	
o-Terphenyl	84-15-1	105	%	70-135	05.26.17 20.39	

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3018587

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Date Prep: 05.25.17 15.45

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.00382	0.00373	mg/kg	05.26.17 07.02		1
Toluene	108-88-3	0.0143	0.00373	mg/kg	05.26.17 07.02		1
Ethylbenzene	100-41-4	0.0144	0.00373	mg/kg	05.26.17 07.02		1
m,p-Xylenes	179601-23-1	0.329	0.00746	mg/kg	05.26.17 07.02		1
o-Xylene	95-47-6	0.0917	0.00373	mg/kg	05.26.17 07.02		1
Total Xylenes	1330-20-7	0.421	0.00373	mg/kg	05.26.17 07.02		1
Total BTEX		0.453	0.00373	mg/kg	05.26.17 07.02		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	87	%	80-120	05.26.17 07.02	
4-Bromofluorobenzene	460-00-4	95	%	80-120	05.26.17 07.02	



Certificate of Analytical Results 553946



COG Operating LLC, Artesia, NM

NG Phillips State #37

Sample Id: T3 Matrix: Soil Date Received: 05.25.17 10.37
Lab Sample Id: 553946-018 Date Collected: 05.23.17 10.00 Sample Depth: 1 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.26.17 10.00 Basis: Wet Weight
Seq Number: 3018386

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2260	24.6	mg/kg	05.26.17 15.43		5

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.26.17 11.00 Basis: Wet Weight
Seq Number: 3018362

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	706	74.9	mg/kg	05.26.17 20.59		5
Diesel Range Organics	C10C28DRO	4430	74.9	mg/kg	05.26.17 20.59		5
Total TPH	PHC635	5460	74.9	mg/kg	05.26.17 20.59		5
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	121	%	70-135	05.26.17 20.59		
o-Terphenyl	84-15-1	105	%	70-135	05.26.17 20.59		

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: ALJ % Moisture:
Analyst: ALJ Date Prep: 05.25.17 15.45 Basis: Wet Weight
Seq Number: 3018587

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.0151	0.00358	mg/kg	05.26.17 02.31		1
Toluene	108-88-3	0.175	0.00358	mg/kg	05.26.17 02.31		1
Ethylbenzene	100-41-4	0.0433	0.00358	mg/kg	05.26.17 02.31		1
m,p-Xylenes	179601-23-1	1.11	0.00717	mg/kg	05.26.17 02.31		1
o-Xylene	95-47-6	0.603	0.00358	mg/kg	05.26.17 02.31		1
Total Xylenes	1330-20-7	1.71	0.00358	mg/kg	05.26.17 02.31		1
Total BTEX		1.95	0.00358	mg/kg	05.26.17 02.31		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	99	%	80-120	05.26.17 02.31		
1,4-Difluorobenzene	540-36-3	93	%	80-120	05.26.17 02.31		



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COG Operating LLC, Artesia, NM

NG Phillips State #37

Sample Id: T3 Matrix: Soil Date Received: 05.25.17 10.37
Lab Sample Id: 553946-019 Date Collected: 05.23.17 10.00 Sample Depth: 2 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.26.17 10.00 Basis: Wet Weight
Seq Number: 3018386

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5770	49.4	mg/kg	05.26.17 15.51		10

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.26.17 11.00 Basis: Wet Weight
Seq Number: 3018362

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	149	75.0	mg/kg	05.26.17 21.19		5
Diesel Range Organics	C10C28DRO	4240	75.0	mg/kg	05.26.17 21.19		5
Total TPH	PHC635	4650	75.0	mg/kg	05.26.17 21.19		5
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	121	%	70-135	05.26.17 21.19		
o-Terphenyl	84-15-1	114	%	70-135	05.26.17 21.19		

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: ALJ % Moisture:
Analyst: ALJ Date Prep: 05.25.17 15.45 Basis: Wet Weight
Seq Number: 3018587

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00353	0.00353	mg/kg	05.26.17 02.47	U	1
Toluene	108-88-3	0.0176	0.00353	mg/kg	05.26.17 02.47		1
Ethylbenzene	100-41-4	0.0318	0.00353	mg/kg	05.26.17 02.47		1
m,p-Xylenes	179601-23-1	0.0488	0.00707	mg/kg	05.26.17 02.47		1
o-Xylene	95-47-6	0.0235	0.00353	mg/kg	05.26.17 02.47		1
Total Xylenes	1330-20-7	0.0723	0.00353	mg/kg	05.26.17 02.47		1
Total BTEX		0.122	0.00353	mg/kg	05.26.17 02.47		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	84	%	80-120	05.26.17 02.47		
4-Bromofluorobenzene	460-00-4	91	%	80-120	05.26.17 02.47		



Certificate of Analytical Results 553946



COG Operating LLC, Artesia, NM

NG Phillips State #37

Sample Id: T3 Matrix: Soil Date Received: 05.25.17 10.37
Lab Sample Id: 553946-020 Date Collected: 05.23.17 10.00 Sample Depth: 3 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.26.17 10.00 Basis: Wet Weight
Seq Number: 3018386

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1100	4.89	mg/kg	05.26.17 15.58		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.26.17 11.00 Basis: Wet Weight
Seq Number: 3018362

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	1140	74.9	mg/kg	05.26.17 21.40		5
Diesel Range Organics	C10C28DRO	9030	74.9	mg/kg	05.26.17 21.40		5
Total TPH	PHC635	10700	74.9	mg/kg	05.26.17 21.40		5
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	106	%	70-135	05.26.17 21.40		
o-Terphenyl	84-15-1	89	%	70-135	05.26.17 21.40		

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: ALJ % Moisture:
Analyst: ALJ Date Prep: 05.25.17 15.45 Basis: Wet Weight
Seq Number: 3018587

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.00487	0.00373	mg/kg	05.26.17 06.13		1
Toluene	108-88-3	0.0165	0.00373	mg/kg	05.26.17 06.13		1
Ethylbenzene	100-41-4	0.249	0.00373	mg/kg	05.26.17 06.13		1
m,p-Xylenes	179601-23-1	0.366	0.00746	mg/kg	05.26.17 06.13		1
o-Xylene	95-47-6	0.0248	0.00373	mg/kg	05.26.17 06.13		1
Total Xylenes	1330-20-7	0.391	0.00373	mg/kg	05.26.17 06.13		1
Total BTEX		0.661	0.00373	mg/kg	05.26.17 06.13		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	96	%	80-120	05.26.17 06.13		
4-Bromofluorobenzene	460-00-4	105	%	80-120	05.26.17 06.13		



Certificate of Analytical Results 553946



COG Operating LLC, Artesia, NM

NG Phillips State #37

Sample Id: T3 Matrix: Soil Date Received: 05.25.17 10.37
Lab Sample Id: 553946-021 Date Collected: 05.23.17 10.00 Sample Depth: 4 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.26.17 13.00 Basis: Wet Weight
Seq Number: 3018392

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1050	4.93	mg/kg	05.26.17 18.07		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.26.17 14.00 Basis: Wet Weight
Seq Number: 3018364

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	37.2	15.0	mg/kg	05.26.17 23.23		1
Diesel Range Organics	C10C28DRO	342	15.0	mg/kg	05.26.17 23.23		1
Total TPH	PHC635	409	15.0	mg/kg	05.26.17 23.23		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	117	%	70-135	05.26.17 23.23		
o-Terphenyl	84-15-1	114	%	70-135	05.26.17 23.23		

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: ALJ % Moisture:
Analyst: ALJ Date Prep: 05.25.17 15.45 Basis: Wet Weight
Seq Number: 3018587

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00377	0.00377	mg/kg	05.26.17 06.30	U	1
Toluene	108-88-3	<0.00377	0.00377	mg/kg	05.26.17 06.30	U	1
Ethylbenzene	100-41-4	<0.00377	0.00377	mg/kg	05.26.17 06.30	U	1
m,p-Xylenes	179601-23-1	0.0142	0.00755	mg/kg	05.26.17 06.30		1
o-Xylene	95-47-6	<0.00377	0.00377	mg/kg	05.26.17 06.30	U	1
Total Xylenes	1330-20-7	0.0142	0.00377	mg/kg	05.26.17 06.30		1
Total BTEX		0.0142	0.00377	mg/kg	05.26.17 06.30		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	92	%	80-120	05.26.17 06.30		
1,4-Difluorobenzene	540-36-3	96	%	80-120	05.26.17 06.30		



Certificate of Analytical Results 553946



COG Operating LLC, Artesia, NM

NG Phillips State #37

Sample Id: T3 Matrix: Soil Date Received: 05.25.17 10.37
Lab Sample Id: 553946-022 Date Collected: 05.23.17 10.00 Sample Depth: 6 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.26.17 13.00 Basis: Wet Weight
Seq Number: 3018392

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	716	4.90	mg/kg	05.26.17 18.30		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.26.17 14.00 Basis: Wet Weight
Seq Number: 3018364

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	20.2	15.0	mg/kg	05.26.17 23.44		1
Diesel Range Organics	C10C28DRO	222	15.0	mg/kg	05.26.17 23.44		1
Total TPH	PHC635	242	15.0	mg/kg	05.26.17 23.44		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	99	%	70-135	05.26.17 23.44		
o-Terphenyl	84-15-1	99	%	70-135	05.26.17 23.44		

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: ALJ % Moisture:
Analyst: ALJ Date Prep: 05.25.17 15.45 Basis: Wet Weight
Seq Number: 3018587

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00369	0.00369	mg/kg	05.26.17 08.55	U	1
Toluene	108-88-3	0.0125	0.00369	mg/kg	05.26.17 08.55		1
Ethylbenzene	100-41-4	0.0377	0.00369	mg/kg	05.26.17 08.55		1
m,p-Xylenes	179601-23-1	0.0230	0.00738	mg/kg	05.26.17 08.55		1
o-Xylene	95-47-6	0.0232	0.00369	mg/kg	05.26.17 08.55		1
Total Xylenes	1330-20-7	0.0462	0.00369	mg/kg	05.26.17 08.55		1
Total BTEX		0.0964	0.00369	mg/kg	05.26.17 08.55		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	118	%	80-120	05.26.17 08.55		
1,4-Difluorobenzene	540-36-3	112	%	80-120	05.26.17 08.55		



Certificate of Analytical Results 553946



COG Operating LLC, Artesia, NM

NG Phillips State #37

Sample Id: T3 Matrix: Soil Date Received: 05.25.17 10.37
Lab Sample Id: 553946-023 Date Collected: 05.23.17 10.00 Sample Depth: 8 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.26.17 13.00 Basis: Wet Weight
Seq Number: 3018392

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	62.0	4.98	mg/kg	05.26.17 18.38		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.26.17 14.00 Basis: Wet Weight
Seq Number: 3018364

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	492	74.8	mg/kg	05.27.17 00.04		5
Diesel Range Organics	C10C28DRO	4700	74.8	mg/kg	05.27.17 00.04		5
Total TPH	PHC635	5570	74.8	mg/kg	05.27.17 00.04		5
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	119	%	70-135	05.27.17 00.04		
o-Terphenyl	84-15-1	111	%	70-135	05.27.17 00.04		

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: ALJ % Moisture:
Analyst: ALJ Date Prep: 05.25.17 15.45 Basis: Wet Weight
Seq Number: 3018587

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.00832	0.00357	mg/kg	05.26.17 09.11		1
Toluene	108-88-3	0.0110	0.00357	mg/kg	05.26.17 09.11		1
Ethylbenzene	100-41-4	<0.00357	0.00357	mg/kg	05.26.17 09.11	U	1
m,p-Xylenes	179601-23-1	0.0677	0.00714	mg/kg	05.26.17 09.11		1
o-Xylene	95-47-6	0.0159	0.00357	mg/kg	05.26.17 09.11		1
Total Xylenes	1330-20-7	0.0836	0.00357	mg/kg	05.26.17 09.11		1
Total BTEX		0.103	0.00357	mg/kg	05.26.17 09.11		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	102	%	80-120	05.26.17 09.11		
1,4-Difluorobenzene	540-36-3	96	%	80-120	05.26.17 09.11		



Certificate of Analytical Results 553946



COG Operating LLC, Artesia, NM

NG Phillips State #37

Sample Id: T3 Matrix: Soil Date Received: 05.25.17 10.37
Lab Sample Id: 553946-024 Date Collected: 05.23.17 10.00 Sample Depth: 10 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.26.17 13.00 Basis: Wet Weight
Seq Number: 3018392

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	94.1	4.88	mg/kg	05.26.17 18.45		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.26.17 14.00 Basis: Wet Weight
Seq Number: 3018364

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	290	75.0	mg/kg	05.27.17 00.25		5
Diesel Range Organics	C10C28DRO	2560	75.0	mg/kg	05.27.17 00.25		5
Total TPH	PHC635	2950	75.0	mg/kg	05.27.17 00.25		5
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	101	%	70-135	05.27.17 00.25		
o-Terphenyl	84-15-1	95	%	70-135	05.27.17 00.25		

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: ALJ % Moisture:
Analyst: ALJ Date Prep: 05.25.17 15.45 Basis: Wet Weight
Seq Number: 3018587

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00344	0.00344	mg/kg	05.26.17 09.27	U	1
Toluene	108-88-3	0.00466	0.00344	mg/kg	05.26.17 09.27		1
Ethylbenzene	100-41-4	0.0263	0.00344	mg/kg	05.26.17 09.27		1
m,p-Xylenes	179601-23-1	<0.00687	0.00687	mg/kg	05.26.17 09.27	U	1
o-Xylene	95-47-6	0.00395	0.00344	mg/kg	05.26.17 09.27		1
Total Xylenes	1330-20-7	0.00395	0.00344	mg/kg	05.26.17 09.27		1
Total BTEX		0.0349	0.00344	mg/kg	05.26.17 09.27		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	81	%	80-120	05.26.17 09.27		
4-Bromofluorobenzene	460-00-4	101	%	80-120	05.26.17 09.27		



Certificate of Analytical Results 553946



COG Operating LLC, Artesia, NM

NG Phillips State #37

Sample Id: T3 Matrix: Soil Date Received: 05.25.17 10.37
Lab Sample Id: 553946-025 Date Collected: 05.23.17 10.00 Sample Depth: 12 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.26.17 13.00 Basis: Wet Weight
Seq Number: 3018392

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	431	4.98	mg/kg	05.26.17 18.53		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.26.17 14.00 Basis: Wet Weight
Seq Number: 3018364

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	554	74.9	mg/kg	05.27.17 00.46		5
Diesel Range Organics	C10C28DRO	3750	74.9	mg/kg	05.27.17 00.46		5
Total TPH	PHC635	4480	74.9	mg/kg	05.27.17 00.46		5
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	100	%	70-135	05.27.17 00.46		
o-Terphenyl	84-15-1	93	%	70-135	05.27.17 00.46		

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: ALJ % Moisture:
Analyst: ALJ Date Prep: 05.25.17 15.45 Basis: Wet Weight
Seq Number: 3018587

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.00460	0.00352	mg/kg	05.26.17 09.43		1
Toluene	108-88-3	0.00648	0.00352	mg/kg	05.26.17 09.43		1
Ethylbenzene	100-41-4	0.0143	0.00352	mg/kg	05.26.17 09.43		1
m,p-Xylenes	179601-23-1	<0.00704	0.00704	mg/kg	05.26.17 09.43	U	1
o-Xylene	95-47-6	0.0298	0.00352	mg/kg	05.26.17 09.43		1
Total Xylenes	1330-20-7	0.0298	0.00352	mg/kg	05.26.17 09.43		1
Total BTEX		0.0552	0.00352	mg/kg	05.26.17 09.43		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	97	%	80-120	05.26.17 09.43		
4-Bromofluorobenzene	460-00-4	94	%	80-120	05.26.17 09.43		



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COG Operating LLC, Artesia, NM

NG Phillips State #37

Sample Id: T4 Matrix: Soil Date Received: 05.25.17 10.37
Lab Sample Id: 553946-026 Date Collected: 05.23.17 10.30
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.26.17 13.00 Basis: Wet Weight
Seq Number: 3018392

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6170	49.0	mg/kg	05.26.17 19.16		10

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.26.17 14.00 Basis: Wet Weight
Seq Number: 3018364

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	232	74.9	mg/kg	05.27.17 01.06		5
Diesel Range Organics	C10C28DRO	2640	74.9	mg/kg	05.27.17 01.06		5
Total TPH	PHC635	3140	74.9	mg/kg	05.27.17 01.06		5
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	119	%	70-135	05.27.17 01.06		
o-Terphenyl	84-15-1	111	%	70-135	05.27.17 01.06		

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: ALJ % Moisture:
Analyst: ALJ Date Prep: 05.25.17 15.45 Basis: Wet Weight
Seq Number: 3018587

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00341	0.00341	mg/kg	05.26.17 09.59	U	1
Toluene	108-88-3	<0.00341	0.00341	mg/kg	05.26.17 09.59	U	1
Ethylbenzene	100-41-4	0.0191	0.00341	mg/kg	05.26.17 09.59		1
m,p-Xylenes	179601-23-1	0.0250	0.00683	mg/kg	05.26.17 09.59		1
o-Xylene	95-47-6	<0.00341	0.00341	mg/kg	05.26.17 09.59	U	1
Total Xylenes	1330-20-7	0.0250	0.00341	mg/kg	05.26.17 09.59		1
Total BTEX		0.0441	0.00341	mg/kg	05.26.17 09.59		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	93	%	80-120	05.26.17 09.59		
4-Bromofluorobenzene	460-00-4	106	%	80-120	05.26.17 09.59		



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COG Operating LLC, Artesia, NM

NG Phillips State #37

Sample Id: T4 Matrix: Soil Date Received: 05.25.17 10.37
Lab Sample Id: 553946-027 Date Collected: 05.23.17 10.30 Sample Depth: 1 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.26.17 13.00 Basis: Wet Weight
Seq Number: 3018392

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2830	25.0	mg/kg	05.26.17 19.23		5

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.26.17 14.00 Basis: Wet Weight
Seq Number: 3018364

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	168	74.8	mg/kg	05.27.17 01.28		5
Diesel Range Organics	C10C28DRO	671	74.8	mg/kg	05.27.17 01.28		5
Total TPH	PHC635	839	74.8	mg/kg	05.27.17 01.28		5
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	100	%	70-135	05.27.17 01.28		
o-Terphenyl	84-15-1	98	%	70-135	05.27.17 01.28		

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: ALJ % Moisture:
Analyst: ALJ Date Prep: 05.25.17 15.45 Basis: Wet Weight
Seq Number: 3018587

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.0132	0.00339	mg/kg	05.26.17 10.15		1
Toluene	108-88-3	0.308	0.00339	mg/kg	05.26.17 10.15		1
Ethylbenzene	100-41-4	0.135	0.00339	mg/kg	05.26.17 10.15		1
m,p-Xylenes	179601-23-1	0.382	0.00678	mg/kg	05.26.17 10.15		1
o-Xylene	95-47-6	0.233	0.00339	mg/kg	05.26.17 10.15		1
Total Xylenes	1330-20-7	0.615	0.00339	mg/kg	05.26.17 10.15		1
Total BTEX		1.07	0.00339	mg/kg	05.26.17 10.15		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	83	%	80-120	05.26.17 10.15		
4-Bromofluorobenzene	460-00-4	95	%	80-120	05.26.17 10.15		



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COG Operating LLC, Artesia, NM

NG Phillips State #37

Sample Id: T4 Matrix: Soil Date Received: 05.25.17 10.37
Lab Sample Id: 553946-028 Date Collected: 05.23.17 10.30 Sample Depth: 2 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.26.17 13.00 Basis: Wet Weight
Seq Number: 3018392

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	97.4	4.98	mg/kg	05.26.17 19.31		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.26.17 14.00 Basis: Wet Weight
Seq Number: 3018364

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<14.9	14.9	mg/kg	05.27.17 01.48	U	1
Diesel Range Organics	C10C28DRO	<14.9	14.9	mg/kg	05.27.17 01.48	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	05.27.17 01.48	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	103	%	70-135	05.27.17 01.48		
o-Terphenyl	84-15-1	103	%	70-135	05.27.17 01.48		

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: ALJ % Moisture:
Analyst: ALJ Date Prep: 05.26.17 09.30 Basis: Wet Weight
Seq Number: 3018590

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00364	0.00364	mg/kg	05.26.17 17.06	U	1
Toluene	108-88-3	0.00805	0.00364	mg/kg	05.26.17 17.06		1
Ethylbenzene	100-41-4	<0.00364	0.00364	mg/kg	05.26.17 17.06	U	1
m,p-Xylenes	179601-23-1	<0.00727	0.00727	mg/kg	05.26.17 17.06	U	1
o-Xylene	95-47-6	<0.00364	0.00364	mg/kg	05.26.17 17.06	U	1
Total Xylenes	1330-20-7	<0.00364	0.00364	mg/kg	05.26.17 17.06	U	1
Total BTEX		0.00805	0.00364	mg/kg	05.26.17 17.06		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	90	%	80-120	05.26.17 17.06		
4-Bromofluorobenzene	460-00-4	103	%	80-120	05.26.17 17.06		



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COG Operating LLC, Artesia, NM

NG Phillips State #37

Sample Id: T4 Matrix: Soil Date Received: 05.25.17 10.37
Lab Sample Id: 553946-029 Date Collected: 05.23.17 10.30 Sample Depth: 3 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.26.17 13.00 Basis: Wet Weight
Seq Number: 3018392

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	48.8	4.88	mg/kg	05.26.17 19.39		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.26.17 14.00 Basis: Wet Weight
Seq Number: 3018364

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	05.27.17 02.09	U	1
Diesel Range Organics	C10C28DRO	<15.0	15.0	mg/kg	05.27.17 02.09	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.27.17 02.09	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	97	%	70-135	05.27.17 02.09		
o-Terphenyl	84-15-1	98	%	70-135	05.27.17 02.09		

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: ALJ % Moisture:
Analyst: ALJ Date Prep: 05.26.17 09.30 Basis: Wet Weight
Seq Number: 3018590

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00375	0.00375	mg/kg	05.26.17 17.22	U	1
Toluene	108-88-3	0.0102	0.00375	mg/kg	05.26.17 17.22		1
Ethylbenzene	100-41-4	0.00702	0.00375	mg/kg	05.26.17 17.22		1
m,p-Xylenes	179601-23-1	<0.00749	0.00749	mg/kg	05.26.17 17.22	U	1
o-Xylene	95-47-6	<0.00375	0.00375	mg/kg	05.26.17 17.22	U	1
Total Xylenes	1330-20-7	<0.00375	0.00375	mg/kg	05.26.17 17.22	U	1
Total BTEX		0.0172	0.00375	mg/kg	05.26.17 17.22		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	87	%	80-120	05.26.17 17.22		
1,4-Difluorobenzene	540-36-3	92	%	80-120	05.26.17 17.22		



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COG Operating LLC, Artesia, NM

NG Phillips State #37

Sample Id: T4 Matrix: Soil Date Received: 05.25.17 10.37
Lab Sample Id: 553946-030 Date Collected: 05.23.17 10.30 Sample Depth: 4 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.26.17 13.00 Basis: Wet Weight
Seq Number: 3018392

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	14.6	5.00	mg/kg	05.26.17 19.46		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.26.17 14.00 Basis: Wet Weight
Seq Number: 3018364

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	05.27.17 02.30	U	1
Diesel Range Organics	C10C28DRO	<15.0	15.0	mg/kg	05.27.17 02.30	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.27.17 02.30	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	98	%	70-135	05.27.17 02.30		
o-Terphenyl	84-15-1	99	%	70-135	05.27.17 02.30		

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: ALJ % Moisture:
Analyst: ALJ Date Prep: 05.25.17 15.45 Basis: Wet Weight
Seq Number: 3018587

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00366	0.00366	mg/kg	05.26.17 08.39	U	1
Toluene	108-88-3	<0.00366	0.00366	mg/kg	05.26.17 08.39	U	1
Ethylbenzene	100-41-4	<0.00366	0.00366	mg/kg	05.26.17 08.39	U	1
m,p-Xylenes	179601-23-1	<0.00733	0.00733	mg/kg	05.26.17 08.39	U	1
o-Xylene	95-47-6	<0.00366	0.00366	mg/kg	05.26.17 08.39	U	1
Total Xylenes	1330-20-7	<0.00366	0.00366	mg/kg	05.26.17 08.39	U	1
Total BTEX		<0.00366	0.00366	mg/kg	05.26.17 08.39	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	93	%	80-120	05.26.17 08.39		
4-Bromofluorobenzene	460-00-4	113	%	80-120	05.26.17 08.39		



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COG Operating LLC, Artesia, NM

NG Phillips State #37

Sample Id: T4 Matrix: Soil Date Received: 05.25.17 10.37
Lab Sample Id: 553946-031 Date Collected: 05.23.17 10.30 Sample Depth: 6 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.26.17 13.00 Basis: Wet Weight
Seq Number: 3018392

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	11.6	4.93	mg/kg	05.26.17 19.54		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.26.17 14.00 Basis: Wet Weight
Seq Number: 3018364

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	05.27.17 08.11	U	1
Diesel Range Organics	C10C28DRO	<15.0	15.0	mg/kg	05.27.17 08.11	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.27.17 08.11	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	95	%	70-135	05.27.17 08.11		
o-Terphenyl	84-15-1	96	%	70-135	05.27.17 08.11		

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: ALJ % Moisture:
Analyst: ALJ Date Prep: 05.26.17 09.30 Basis: Wet Weight
Seq Number: 3018590

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00366	0.00366	mg/kg	05.26.17 12.42	U	1
Toluene	108-88-3	<0.00366	0.00366	mg/kg	05.26.17 12.42	U	1
Ethylbenzene	100-41-4	<0.00366	0.00366	mg/kg	05.26.17 12.42	U	1
m,p-Xylenes	179601-23-1	<0.00733	0.00733	mg/kg	05.26.17 12.42	U	1
o-Xylene	95-47-6	<0.00366	0.00366	mg/kg	05.26.17 12.42	U	1
Total Xylenes	1330-20-7	<0.00366	0.00366	mg/kg	05.26.17 12.42	U	1
Total BTEX		<0.00366	0.00366	mg/kg	05.26.17 12.42	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	117	%	80-120	05.26.17 12.42		
4-Bromofluorobenzene	460-00-4	115	%	80-120	05.26.17 12.42		



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COG Operating LLC, Artesia, NM

NG Phillips State #37

Sample Id: T4 Matrix: Soil Date Received: 05.25.17 10.37
Lab Sample Id: 553946-032 Date Collected: 05.23.17 10.30 Sample Depth: 8 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.26.17 13.00 Basis: Wet Weight
Seq Number: 3018392

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7.70	4.98	mg/kg	05.26.17 20.17		1



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COG Operating LLC, Artesia, NM

NG Phillips State #37

Sample Id: T4 Matrix: Soil Date Received: 05.25.17 10.37
Lab Sample Id: 553946-033 Date Collected: 05.23.17 10.30 Sample Depth: 10 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.26.17 13.00 Basis: Wet Weight
Seq Number: 3018392

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	11.5	4.91	mg/kg	05.26.17 20.24		1



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COG Operating LLC, Artesia, NM

NG Phillips State #37

Sample Id: T4 Matrix: Soil Date Received: 05.25.17 10.37
Lab Sample Id: 553946-034 Date Collected: 05.23.17 10.30 Sample Depth: 12 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.26.17 13.00 Basis: Wet Weight
Seq Number: 3018392

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4.83	4.83	mg/kg	05.26.17 20.47		1



Certificate of Analytical Results 553946



COG Operating LLC, Artesia, NM

NG Phillips State #37

Sample Id: T4 Matrix: Soil Date Received: 05.25.17 10.37
Lab Sample Id: 553946-035 Date Collected: 05.23.17 10.30 Sample Depth: 14 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.26.17 13.00 Basis: Wet Weight
Seq Number: 3018392

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.50	4.87	mg/kg	05.26.17 20.55		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.26.17 14.00 Basis: Wet Weight
Seq Number: 3018364

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	05.27.17 08.32	U	1
Diesel Range Organics	C10C28DRO	26.3	15.0	mg/kg	05.27.17 08.32		1
Total TPH	PHC635	26.3	15.0	mg/kg	05.27.17 08.32		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	99	%	70-135	05.27.17 08.32		
o-Terphenyl	84-15-1	101	%	70-135	05.27.17 08.32		

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: ALJ % Moisture:
Analyst: ALJ Date Prep: 05.25.17 15.45 Basis: Wet Weight
Seq Number: 3018587

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00375	0.00375	mg/kg	05.26.17 07.51	U	1
Toluene	108-88-3	<0.00375	0.00375	mg/kg	05.26.17 07.51	U	1
Ethylbenzene	100-41-4	<0.00375	0.00375	mg/kg	05.26.17 07.51	U	1
m,p-Xylenes	179601-23-1	<0.00749	0.00749	mg/kg	05.26.17 07.51	U	1
o-Xylene	95-47-6	<0.00375	0.00375	mg/kg	05.26.17 07.51	U	1
Total Xylenes	1330-20-7	<0.00375	0.00375	mg/kg	05.26.17 07.51	U	1
Total BTEX		<0.00375	0.00375	mg/kg	05.26.17 07.51	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	101	%	80-120	05.26.17 07.51		
4-Bromofluorobenzene	460-00-4	107	%	80-120	05.26.17 07.51		



Certificate of Analytical Results 553946



COG Operating LLC, Artesia, NM

NG Phillips State #37

Sample Id: T5
Lab Sample Id: 553946-036

Matrix: Soil
Date Collected: 05.23.17 11.00

Date Received: 05.25.17 10.37

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MGO

Analyst: MGO

Seq Number: 3018392

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Date Prep: 05.26.17 13.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5630	49.8	mg/kg	05.26.17 21.02		10

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3018364

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Date Prep: 05.26.17 14.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	2360	74.9	mg/kg	05.27.17 09.34		5
Diesel Range Organics	C10C28DRO	17100	74.9	mg/kg	05.27.17 09.34		5
Total TPH	PHC635	20800	74.9	mg/kg	05.27.17 09.34		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	05.27.17 09.34	
o-Terphenyl	84-15-1	107	%	70-135	05.27.17 09.34	

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3018590

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Date Prep: 05.26.17 09.30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.00390	0.00356	mg/kg	05.26.17 14.36		1
Toluene	108-88-3	0.0369	0.00356	mg/kg	05.26.17 14.36		1
Ethylbenzene	100-41-4	0.194	0.00356	mg/kg	05.26.17 14.36		1
m,p-Xylenes	179601-23-1	0.117	0.00712	mg/kg	05.26.17 14.36		1
o-Xylene	95-47-6	0.162	0.00356	mg/kg	05.26.17 14.36		1
Total Xylenes	1330-20-7	0.279	0.00356	mg/kg	05.26.17 14.36		1
Total BTEX		0.514	0.00356	mg/kg	05.26.17 14.36		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	89	%	80-120	05.26.17 14.36	
1,4-Difluorobenzene	540-36-3	81	%	80-120	05.26.17 14.36	



Certificate of Analytical Results 553946



COG Operating LLC, Artesia, NM

NG Phillips State #37

Sample Id: T5 Matrix: Soil Date Received: 05.25.17 10.37
Lab Sample Id: 553946-037 Date Collected: 05.23.17 11.00 Sample Depth: 1 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.26.17 13.00 Basis: Wet Weight
Seq Number: 3018392

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4880	24.9	mg/kg	05.26.17 21.10		5

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.26.17 14.00 Basis: Wet Weight
Seq Number: 3018364

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	5320	74.9	mg/kg	05.27.17 09.55		5
Diesel Range Organics	C10C28DRO	18000	74.9	mg/kg	05.27.17 09.55		5
Total TPH	PHC635	24700	74.9	mg/kg	05.27.17 09.55		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	123	%	70-135	05.27.17 09.55	
o-Terphenyl	84-15-1	121	%	70-135	05.27.17 09.55	

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: ALJ % Moisture:
Analyst: ALJ Date Prep: 06.01.17 16.30 Basis: Wet Weight
Seq Number: 3018826

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.0833	0.00201	mg/kg	06.02.17 08.15		1
Toluene	108-88-3	56.6	1.74	mg/kg	06.02.17 08.15	D	500
Ethylbenzene	100-41-4	145	1.74	mg/kg	06.02.17 08.15	D	500
m,p-Xylenes	179601-23-1	157	3.47	mg/kg	06.02.17 08.15	D	500
o-Xylene	95-47-6	70.3	1.74	mg/kg	06.02.17 08.15	D	500
Total Xylenes	1330-20-7	227	1.74	mg/kg	06.02.17 08.15		500
Total BTEX		429	0.00201	mg/kg	06.02.17 08.15		500

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	102	%	80-120	06.02.17 08.15	
4-Bromofluorobenzene	460-00-4	83	%	80-120	06.02.17 08.15	



Certificate of Analytical Results 553946



COG Operating LLC, Artesia, NM

NG Phillips State #37

Sample Id: T5 Matrix: Soil Date Received: 05.25.17 10.37
Lab Sample Id: 553946-038 Date Collected: 05.23.17 11.00 Sample Depth: 2 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.26.17 13.00 Basis: Wet Weight
Seq Number: 3018392

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1800	24.9	mg/kg	05.26.17 21.17		5

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.26.17 14.00 Basis: Wet Weight
Seq Number: 3018364

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	29.5	15.0	mg/kg	05.27.17 10.16		1
Diesel Range Organics	C10C28DRO	144	15.0	mg/kg	05.27.17 10.16		1
Total TPH	PHC635	174	15.0	mg/kg	05.27.17 10.16		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	98	%	70-135	05.27.17 10.16		
o-Terphenyl	84-15-1	99	%	70-135	05.27.17 10.16		

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: ALJ % Moisture:
Analyst: ALJ Date Prep: 05.26.17 09.30 Basis: Wet Weight
Seq Number: 3018590

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00500	0.00500	mg/kg	05.26.17 16.00	U	1
Toluene	108-88-3	<0.00500	0.00500	mg/kg	05.26.17 16.00	U	1
Ethylbenzene	100-41-4	<0.00500	0.00500	mg/kg	05.26.17 16.00	U	1
m,p-Xylenes	179601-23-1	0.0428	0.0100	mg/kg	05.26.17 16.00		1
o-Xylene	95-47-6	<0.00500	0.00500	mg/kg	05.26.17 16.00	U	1
Total Xylenes	1330-20-7	0.0428	0.00500	mg/kg	05.26.17 16.00		1
Total BTEX		0.0428	0.00500	mg/kg	05.26.17 16.00		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	83	%	80-120	05.26.17 16.00		
4-Bromofluorobenzene	460-00-4	110	%	80-120	05.26.17 16.00		



Certificate of Analytical Results 553946



COG Operating LLC, Artesia, NM

NG Phillips State #37

Sample Id: T5 Matrix: Soil Date Received: 05.25.17 10.37
Lab Sample Id: 553946-039 Date Collected: 05.23.17 11.00 Sample Depth: 3 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.26.17 13.00 Basis: Wet Weight
Seq Number: 3018392

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	60.1	4.90	mg/kg	05.26.17 21.25		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.26.17 14.00 Basis: Wet Weight
Seq Number: 3018364

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<14.9	14.9	mg/kg	05.27.17 10.38	U	1
Diesel Range Organics	C10C28DRO	<14.9	14.9	mg/kg	05.27.17 10.38	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	05.27.17 10.38	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	96	%	70-135	05.27.17 10.38		
o-Terphenyl	84-15-1	98	%	70-135	05.27.17 10.38		

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: ALJ % Moisture:
Analyst: ALJ Date Prep: 05.26.17 09.30 Basis: Wet Weight
Seq Number: 3018590

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00350	0.00350	mg/kg	05.26.17 13.15	U	1
Toluene	108-88-3	<0.00350	0.00350	mg/kg	05.26.17 13.15	U	1
Ethylbenzene	100-41-4	<0.00350	0.00350	mg/kg	05.26.17 13.15	U	1
m,p-Xylenes	179601-23-1	<0.00699	0.00699	mg/kg	05.26.17 13.15	U	1
o-Xylene	95-47-6	<0.00350	0.00350	mg/kg	05.26.17 13.15	U	1
Total Xylenes	1330-20-7	<0.00350	0.00350	mg/kg	05.26.17 13.15	U	1
Total BTEX		<0.00350	0.00350	mg/kg	05.26.17 13.15	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	109	%	80-120	05.26.17 13.15		
1,4-Difluorobenzene	540-36-3	90	%	80-120	05.26.17 13.15		



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COG Operating LLC, Artesia, NM

NG Phillips State #37

Sample Id: T5 Matrix: Soil Date Received: 05.25.17 10.37
Lab Sample Id: 553946-040 Date Collected: 05.23.17 11.00 Sample Depth: 4 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.26.17 13.00 Basis: Wet Weight
Seq Number: 3018392

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8.39	4.98	mg/kg	05.26.17 21.33		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.26.17 14.00 Basis: Wet Weight
Seq Number: 3018364

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<14.9	14.9	mg/kg	05.27.17 10.59	U	1
Diesel Range Organics	C10C28DRO	<14.9	14.9	mg/kg	05.27.17 10.59	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	05.27.17 10.59	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	96	%	70-135	05.27.17 10.59		
o-Terphenyl	84-15-1	98	%	70-135	05.27.17 10.59		

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: ALJ % Moisture:
Analyst: ALJ Date Prep: 05.26.17 09.30 Basis: Wet Weight
Seq Number: 3018590

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00356	0.00356	mg/kg	05.26.17 13.31	U	1
Toluene	108-88-3	<0.00356	0.00356	mg/kg	05.26.17 13.31	U	1
Ethylbenzene	100-41-4	<0.00356	0.00356	mg/kg	05.26.17 13.31	U	1
m,p-Xylenes	179601-23-1	<0.00712	0.00712	mg/kg	05.26.17 13.31	U	1
o-Xylene	95-47-6	<0.00356	0.00356	mg/kg	05.26.17 13.31	U	1
Total Xylenes	1330-20-7	<0.00356	0.00356	mg/kg	05.26.17 13.31	U	1
Total BTEX		<0.00356	0.00356	mg/kg	05.26.17 13.31	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	97	%	80-120	05.26.17 13.31		
4-Bromofluorobenzene	460-00-4	101	%	80-120	05.26.17 13.31		

COG Operating LLC, Artesia, NM

NG Phillips State #37

Sample Id: T5 Matrix: Soil Date Received: 05.25.17 10.37
 Lab Sample Id: 553946-041 Date Collected: 05.23.17 11.00 Sample Depth: 6 ft
 Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
 Tech: MGO % Moisture:
 Analyst: MGO Date Prep: 05.26.17 15.52 Basis: Wet Weight
 Seq Number: 3018402

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7.74	4.87	mg/kg	05.26.17 22.18		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 05.26.17 14.00 Basis: Wet Weight
 Seq Number: 3018364

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	05.27.17 11.20	U	1
Diesel Range Organics	C10C28DRO	<15.0	15.0	mg/kg	05.27.17 11.20	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.27.17 11.20	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	98	%	70-135	05.27.17 11.20		
o-Terphenyl	84-15-1	100	%	70-135	05.27.17 11.20		

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
 Tech: ALJ % Moisture:
 Analyst: ALJ Date Prep: 05.26.17 16.30 Basis: Wet Weight
 Seq Number: 3018592

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00654	0.00654	mg/kg	05.27.17 13.24	U	1
Toluene	108-88-3	<0.00654	0.00654	mg/kg	05.27.17 13.24	U	1
Ethylbenzene	100-41-4	<0.00654	0.00654	mg/kg	05.27.17 13.24	U	1
m,p-Xylenes	179601-23-1	<0.0131	0.0131	mg/kg	05.27.17 13.24	U	1
o-Xylene	95-47-6	<0.00654	0.00654	mg/kg	05.27.17 13.24	U	1
Total Xylenes	1330-20-7	<0.00654	0.00654	mg/kg	05.27.17 13.24	U	1
Total BTEX		<0.00654	0.00654	mg/kg	05.27.17 13.24	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	89	%	80-120	05.27.17 13.24		
1,4-Difluorobenzene	540-36-3	88	%	80-120	05.27.17 13.24		



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COG Operating LLC, Artesia, NM

NG Phillips State #37

Sample Id: T5 Matrix: Soil Date Received: 05.25.17 10.37
Lab Sample Id: 553946-042 Date Collected: 05.23.17 11.00 Sample Depth: 8 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.26.17 15.52 Basis: Wet Weight
Seq Number: 3018402

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.29	4.96	mg/kg	05.26.17 22.41		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.26.17 14.00 Basis: Wet Weight
Seq Number: 3018364

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	05.27.17 11.41	U	1
Diesel Range Organics	C10C28DRO	<15.0	15.0	mg/kg	05.27.17 11.41	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.27.17 11.41	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	114	%	70-135	05.27.17 11.41		
o-Terphenyl	84-15-1	115	%	70-135	05.27.17 11.41		

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: ALJ % Moisture:
Analyst: ALJ Date Prep: 05.26.17 09.30 Basis: Wet Weight
Seq Number: 3018590

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00370	0.00370	mg/kg	05.26.17 14.04	U	1
Toluene	108-88-3	<0.00370	0.00370	mg/kg	05.26.17 14.04	U	1
Ethylbenzene	100-41-4	<0.00370	0.00370	mg/kg	05.26.17 14.04	U	1
m,p-Xylenes	179601-23-1	<0.00741	0.00741	mg/kg	05.26.17 14.04	U	1
o-Xylene	95-47-6	<0.00370	0.00370	mg/kg	05.26.17 14.04	U	1
Total Xylenes	1330-20-7	<0.00370	0.00370	mg/kg	05.26.17 14.04	U	1
Total BTEX		<0.00370	0.00370	mg/kg	05.26.17 14.04	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	96	%	80-120	05.26.17 14.04		
4-Bromofluorobenzene	460-00-4	110	%	80-120	05.26.17 14.04		



Certificate of Analytical Results 553946



COG Operating LLC, Artesia, NM

NG Phillips State #37

Sample Id: T5 Matrix: Soil Date Received: 05.25.17 10.37
Lab Sample Id: 553946-043 Date Collected: 05.23.17 11.00 Sample Depth: 14 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.26.17 15.52 Basis: Wet Weight
Seq Number: 3018402

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.10	4.94	mg/kg	05.26.17 22.49		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.26.17 14.00 Basis: Wet Weight
Seq Number: 3018364

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	05.27.17 12.01	U	1
Diesel Range Organics	C10C28DRO	<15.0	15.0	mg/kg	05.27.17 12.01	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.27.17 12.01	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	95	%	70-135	05.27.17 12.01		
o-Terphenyl	84-15-1	97	%	70-135	05.27.17 12.01		

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: ALJ % Moisture:
Analyst: ALJ Date Prep: 05.26.17 09.30 Basis: Wet Weight
Seq Number: 3018590

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00376	0.00376	mg/kg	05.26.17 14.20	U	1
Toluene	108-88-3	<0.00376	0.00376	mg/kg	05.26.17 14.20	U	1
Ethylbenzene	100-41-4	<0.00376	0.00376	mg/kg	05.26.17 14.20	U	1
m,p-Xylenes	179601-23-1	<0.00752	0.00752	mg/kg	05.26.17 14.20	U	1
o-Xylene	95-47-6	<0.00376	0.00376	mg/kg	05.26.17 14.20	U	1
Total Xylenes	1330-20-7	<0.00376	0.00376	mg/kg	05.26.17 14.20	U	1
Total BTEX		<0.00376	0.00376	mg/kg	05.26.17 14.20	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	116	%	80-120	05.26.17 14.20		
1,4-Difluorobenzene	540-36-3	94	%	80-120	05.26.17 14.20		

- 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

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COG Operating LLC
NG Phillips State #37**Analytical Method: Inorganic Anions by EPA 300/300.1**

Seq Number: 3018386

Matrix: Solid

Prep Method: E300P

MB Sample Id: 725275-1-BLK

LCS Sample Id: 725275-1-BKS

Date Prep: 05.26.17

LCSD Sample Id: 725275-1-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	05.26.17 10:17	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3018392

Matrix: Solid

Prep Method: E300P

MB Sample Id: 725277-1-BLK

LCS Sample Id: 725277-1-BKS

Date Prep: 05.26.17

LCSD Sample Id: 725277-1-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	264	106	268	107	90-110	2	20	mg/kg	05.26.17 17:52	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3018402

Matrix: Solid

Prep Method: E300P

MB Sample Id: 725280-1-BLK

LCS Sample Id: 725280-1-BKS

Date Prep: 05.26.17

LCSD Sample Id: 725280-1-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	265	106	273	109	90-110	3	20	mg/kg	05.26.17 22:03	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3018386

Matrix: Soil

Prep Method: E300P

Parent Sample Id: 553946-001

MS Sample Id: 553946-001 S

Date Prep: 05.26.17

MSD Sample Id: 553946-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	314	250	579	106	579	106	90-110	0	20	mg/kg	05.26.17 12:03	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3018386

Matrix: Soil

Prep Method: E300P

Parent Sample Id: 553946-011

MS Sample Id: 553946-011 S

Date Prep: 05.26.17

MSD Sample Id: 553946-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	175	244	435	107	431	105	90-110	1	20	mg/kg	05.26.17 14:27	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3018392

Matrix: Soil

Prep Method: E300P

Parent Sample Id: 553946-021

MS Sample Id: 553946-021 S

Date Prep: 05.26.17

MSD Sample Id: 553946-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1050	247	1320	109	1310	105	90-110	1	20	mg/kg	05.26.17 18:15	



QC Summary 553946

COG Operating LLC NG Phillips State #37

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3018392

Matrix: Soil

Prep Method: E300P

Parent Sample Id: 553946-031

MS Sample Id: 553946-031 S

Date Prep: 05.26.17

MSD Sample Id: 553946-031 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	11.6	247	281	109	278	108	90-110	1	20	mg/kg	05.26.17 20:01	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3018402

Matrix: Soil

Prep Method: E300P

Parent Sample Id: 553946-041

MS Sample Id: 553946-041 S

Date Prep: 05.26.17

MSD Sample Id: 553946-041 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	7.74	244	273	109	273	109	90-110	0	20	mg/kg	05.26.17 22:26	

Analytical Method: TPH By SW8015 Mod

Seq Number: 3018362

Matrix: Solid

Prep Method: TX1005P

MB Sample Id: 725296-1-BLK

LCS Sample Id: 725296-1-BKS

Date Prep: 05.26.17

LCSD Sample Id: 725296-1-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	<15.0	1000	1210	121	1270	127	70-135	5	35	mg/kg	05.26.17 12:30	
Diesel Range Organics	<15.0	1000	1210	121	1250	125	70-135	3	35	mg/kg	05.26.17 12:30	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane	105		125		129		70-135	%	05.26.17 12:30			
o-Terphenyl	107		120		125		70-135	%	05.26.17 12:30			

Analytical Method: TPH By SW8015 Mod

Seq Number: 3018364

Matrix: Solid

Prep Method: TX1005P

MB Sample Id: 725297-1-BLK

LCS Sample Id: 725297-1-BKS

Date Prep: 05.26.17

LCSD Sample Id: 725297-1-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	<15.0	1000	1190	119	1190	119	70-135	0	35	mg/kg	05.26.17 22:42	
Diesel Range Organics	<15.0	1000	1190	119	1170	117	70-135	2	35	mg/kg	05.26.17 22:42	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane	103		125		126		70-135	%	05.26.17 22:42			
o-Terphenyl	105		117		123		70-135	%	05.26.17 22:42			



QC Summary 553946

COG Operating LLC

NG Phillips State #37

Analytical Method: TPH By SW8015 Mod

Seq Number: 3018362

Parent Sample Id: 553946-014

Matrix: Soil

MS Sample Id: 553946-014 S

Prep Method: TX1005P

Date Prep: 05.26.17

MSD Sample Id: 553946-014 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	<15.0	999	1010	101	1010	101	70-135	0	35	mg/kg	05.26.17 19:14	
Diesel Range Organics	<15.0	999	1010	101	1020	102	70-135	1	35	mg/kg	05.26.17 19:14	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	102		107		70-135	%	05.26.17 19:14
o-Terphenyl	95		99		70-135	%	05.26.17 19:14

Analytical Method: TPH By SW8015 Mod

Seq Number: 3018364

Parent Sample Id: 553946-035

Matrix: Soil

MS Sample Id: 553946-035 S

Prep Method: TX1005P

Date Prep: 05.26.17

MSD Sample Id: 553946-035 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	<15.0	999	1160	116	1000	100	70-135	15	35	mg/kg	05.27.17 08:53	
Diesel Range Organics	26.3	999	1150	112	1030	101	70-135	11	35	mg/kg	05.27.17 08:53	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	112		100		70-135	%	05.27.17 08:53
o-Terphenyl	109		99		70-135	%	05.27.17 08:53

Analytical Method: BTEX by EPA 8021B

Seq Number: 3018244

MB Sample Id: 725225-1-BLK

Matrix: Solid

LCS Sample Id: 725225-1-BKS

Prep Method: SW5030B

Date Prep: 05.25.17

LCSD Sample Id: 725225-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.0826	83	0.0767	76	70-130	7	35	mg/kg	05.25.17 07:20	
Toluene	<0.00201	0.100	0.0823	82	0.0810	80	70-130	2	35	mg/kg	05.25.17 07:20	
Ethylbenzene	<0.00201	0.100	0.0915	92	0.0810	80	71-129	12	35	mg/kg	05.25.17 07:20	
m,p-Xylenes	<0.00402	0.201	0.177	88	0.165	82	70-135	7	35	mg/kg	05.25.17 07:20	
o-Xylene	<0.00201	0.100	0.0865	87	0.0803	80	71-133	7	35	mg/kg	05.25.17 07:20	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	93		115		101		80-120	%	05.25.17 07:20
4-Bromofluorobenzene	92		118		101		80-120	%	05.25.17 07:20

COG Operating LLC
NG Phillips State #37

Analytical Method: BTEX by EPA 8021B

Seq Number: 3018587

MB Sample Id: 725408-1-BLK

Matrix: Solid

LCS Sample Id: 725408-1-BKS

Prep Method: SW5030B

Date Prep: 05.25.17

LCSD Sample Id: 725408-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0994	0.0859	86	0.0822	82	70-130	4	35	mg/kg	05.25.17 23:49	
Toluene	<0.00199	0.0994	0.0891	90	0.0949	95	70-130	6	35	mg/kg	05.25.17 23:49	
Ethylbenzene	<0.00199	0.0994	0.0980	99	0.0959	96	71-129	2	35	mg/kg	05.25.17 23:49	
m,p-Xylenes	<0.00398	0.199	0.204	103	0.194	97	70-135	5	35	mg/kg	05.25.17 23:49	
o-Xylene	<0.00199	0.0994	0.0939	94	0.0940	94	71-133	0	35	mg/kg	05.25.17 23:49	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	90		119		112		80-120	%	05.25.17 23:49
4-Bromofluorobenzene	105		115		110		80-120	%	05.25.17 23:49

Analytical Method: BTEX by EPA 8021B

Seq Number: 3018590

MB Sample Id: 725410-1-BLK

Matrix: Solid

LCS Sample Id: 725410-1-BKS

Prep Method: SW5030B

Date Prep: 05.26.17

LCSD Sample Id: 725410-1-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	0.0832	83	0.0859	85	70-130	3	35	mg/kg	05.26.17 10:48	
Toluene	<0.00200	0.100	0.0859	86	0.0934	92	70-130	8	35	mg/kg	05.26.17 10:48	
Ethylbenzene	<0.00200	0.100	0.101	101	0.101	100	71-129	0	35	mg/kg	05.26.17 10:48	
m,p-Xylenes	<0.00400	0.200	0.197	99	0.206	102	70-135	4	35	mg/kg	05.26.17 10:48	
o-Xylene	<0.00200	0.100	0.0903	90	0.0852	84	71-133	6	35	mg/kg	05.26.17 10:48	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	89		100		101		80-120	%	05.26.17 10:48
4-Bromofluorobenzene	94		115		120		80-120	%	05.26.17 10:48

Analytical Method: BTEX by EPA 8021B

Seq Number: 3018592

MB Sample Id: 725412-1-BLK

Matrix: Solid

LCS Sample Id: 725412-1-BKS

Prep Method: SW5030B

Date Prep: 05.26.17

LCSD Sample Id: 725412-1-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	0.0791	78	0.0733	73	70-130	8	35	mg/kg	05.26.17 18:43	
Toluene	<0.00202	0.101	0.0792	78	0.0891	88	70-130	12	35	mg/kg	05.26.17 18:43	
Ethylbenzene	<0.00202	0.101	0.0972	96	0.0954	94	71-129	2	35	mg/kg	05.26.17 18:43	
m,p-Xylenes	<0.00404	0.202	0.193	96	0.188	94	70-135	3	35	mg/kg	05.26.17 18:43	
o-Xylene	<0.00202	0.101	0.0939	93	0.0953	94	71-133	1	35	mg/kg	05.26.17 18:43	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		102		104		80-120	%	05.26.17 18:43
4-Bromofluorobenzene	99		110		110		80-120	%	05.26.17 18:43

COG Operating LLC
NG Phillips State #37

Analytical Method: BTEX by EPA 8021B

Seq Number: 3018826

MB Sample Id: 725560-1-BLK

Matrix: Solid

LCS Sample Id: 725560-1-BKS

Prep Method: SW5030B

Date Prep: 06.01.17

LCSD Sample Id: 725560-1-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	0.0835	84	0.0800	79	70-130	4	35	mg/kg	06.01.17 23:02	
Toluene	<0.00200	0.100	0.0812	81	0.0732	72	70-130	10	35	mg/kg	06.01.17 23:02	
Ethylbenzene	<0.00200	0.100	0.0907	91	0.0827	82	71-129	9	35	mg/kg	06.01.17 23:02	
m,p-Xylenes	<0.00401	0.200	0.190	95	0.174	86	70-135	9	35	mg/kg	06.01.17 23:02	
o-Xylene	<0.00200	0.100	0.0885	89	0.0816	81	71-133	8	35	mg/kg	06.01.17 23:02	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	83		84		106		80-120	%	06.01.17 23:02
4-Bromofluorobenzene	86		92		103		80-120	%	06.01.17 23:02

Analytical Method: BTEX by EPA 8021B

Seq Number: 3018244

Parent Sample Id: 553764-001

Matrix: Soil

MS Sample Id: 553764-001 S

Prep Method: SW5030B

Date Prep: 05.25.17

MSD Sample Id: 553764-001 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	0.0527	53	0.0647	65	70-130	20	35	mg/kg	05.25.17 07:52	X
Toluene	<0.00201	0.100	0.0553	55	0.0688	69	70-130	22	35	mg/kg	05.25.17 07:52	X
Ethylbenzene	<0.00201	0.100	0.0562	56	0.0640	64	71-129	13	35	mg/kg	05.25.17 07:52	X
m,p-Xylenes	<0.00402	0.201	0.102	51	0.125	63	70-135	20	35	mg/kg	05.25.17 07:52	X
o-Xylene	<0.00201	0.100	0.0543	54	0.0658	66	71-133	19	35	mg/kg	05.25.17 07:52	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		100		80-120	%	05.25.17 07:52
4-Bromofluorobenzene	117		118		80-120	%	05.25.17 07:52

Analytical Method: BTEX by EPA 8021B

Seq Number: 3018587

Parent Sample Id: 553946-035

Matrix: Soil

MS Sample Id: 553946-035 S

Prep Method: SW5030B

Date Prep: 05.25.17

MSD Sample Id: 553946-035 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00345	0.172	0.0844	49	0.101	55	70-130	18	35	mg/kg	05.26.17 00:21	X
Toluene	<0.00345	0.172	0.0810	47	0.106	58	70-130	27	35	mg/kg	05.26.17 00:21	X
Ethylbenzene	<0.00345	0.172	0.105	61	0.114	63	71-129	8	35	mg/kg	05.26.17 00:21	X
m,p-Xylenes	<0.00690	0.345	0.208	60	0.234	64	70-135	12	35	mg/kg	05.26.17 00:21	X
o-Xylene	<0.00345	0.172	0.0999	58	0.119	65	71-133	17	35	mg/kg	05.26.17 00:21	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	98		100		80-120	%	05.26.17 00:21
4-Bromofluorobenzene	83		100		80-120	%	05.26.17 00:21



QC Summary 553946

COG Operating LLC NG Phillips State #37

Analytical Method: BTEX by EPA 8021B

Seq Number: 3018590

Parent Sample Id: 553987-001

Matrix: Soil

MS Sample Id: 553987-001 S

Prep Method: SW5030B

Date Prep: 05.26.17

MSD Sample Id: 553987-001 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	0.0449	44	0.0406	41	70-130	10	35	mg/kg	05.26.17 11:21	X
Toluene	<0.00202	0.101	0.0524	52	0.0384	38	70-130	31	35	mg/kg	05.26.17 11:21	X
Ethylbenzene	<0.00202	0.101	0.0479	47	0.0433	43	71-129	10	35	mg/kg	05.26.17 11:21	X
m,p-Xylenes	<0.00405	0.202	0.0795	39	0.0796	40	70-135	0	35	mg/kg	05.26.17 11:21	X
o-Xylene	<0.00202	0.101	0.0436	43	0.0388	39	71-133	12	35	mg/kg	05.26.17 11:21	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	119		109		80-120	%	05.26.17 11:21
4-Bromofluorobenzene	120		116		80-120	%	05.26.17 11:21

Analytical Method: BTEX by EPA 8021B

Seq Number: 3018592

Parent Sample Id: 553987-008

Matrix: Soil

MS Sample Id: 553987-008 S

Prep Method: SW5030B

Date Prep: 05.26.17

MSD Sample Id: 553987-008 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	0.0998	0.0589	59	0.0401	40	70-130	38	35	mg/kg	05.26.17 19:16	XF
Toluene	0.0268	0.0998	0.0580	31	0.0436	17	70-130	28	35	mg/kg	05.26.17 19:16	X
Ethylbenzene	<0.00200	0.0998	0.0600	60	0.0470	47	71-129	24	35	mg/kg	05.26.17 19:16	X
m,p-Xylenes	<0.00399	0.200	0.116	58	0.0719	36	70-135	47	35	mg/kg	05.26.17 19:16	XF
o-Xylene	<0.00200	0.0998	0.0558	56	0.0420	42	71-133	28	35	mg/kg	05.26.17 19:16	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		98		80-120	%	05.26.17 19:16
4-Bromofluorobenzene	117		119		80-120	%	05.26.17 19:16

Analytical Method: BTEX by EPA 8021B

Seq Number: 3018826

Parent Sample Id: 554125-001

Matrix: Soil

MS Sample Id: 554125-001 S

Prep Method: SW5030B

Date Prep: 06.01.17

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	Limits	Units	Analysis Date	Flag
Benzene	<0.00358	0.179	0.111	62	70-130	mg/kg	06.01.17 23:34	X
Toluene	0.00399	0.179	0.0897	48	70-130	mg/kg	06.01.17 23:34	X
Ethylbenzene	0.00418	0.179	0.0811	43	71-129	mg/kg	06.01.17 23:34	X
m,p-Xylenes	0.0125	0.358	0.215	57	70-135	mg/kg	06.01.17 23:34	X
o-Xylene	0.00766	0.179	0.100	52	71-133	mg/kg	06.01.17 23:34	X

Surrogate	MS %Rec	MS Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		80-120	%	06.01.17 23:34
4-Bromofluorobenzene	114		80-120	%	06.01.17 23:34



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Stafford, Texas (281-240-4200)
Dallas Texas (214-902-0300)

CHAIN OF CUSTODY

Page 1 of 5

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

www.xenco.com

Client / Reporting Information		Project Information		Analytical Information		Matrix Codes	
Company Name / Branch: COG Operating LLC		Project Name/Number: N6 PHILLIPS STATE #37					
Company Address: 2407 Pecos Avenue, Artesia NM, 88210		Project Location:					
Email: DNEEL22@COMC.HB.COM		Invoice To: COG Operating LLC Attn: Robert McNeill 600 W Illinois Midland, Texas 79701					
Project Contact: DANOTAS NEEL		Phone No: 432.215.2733					
Sampler's Name DN							
Field ID / Point of Collection		Collection		Data Deliverable Information		Notes:	
No.	Sample Depth	Date	Time	Matrix	# of bottles	Number of preserved bottles	
						HCl	NaOH/Zn
						Acetate	HNO3
						H2SO4	NaOH
						NaHSO4	MeOH
						NONE	
1	T1	5/24/17	9:00AM				
2	T1						
3	T1						
4	T1						
5	T1						
6	T1						
7	T1						
8							
9							
10							
Turnaround Time (Business days)							
☐ 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							
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY							
Relinquished by Sampler:		Date Time: 5-24-17 4:00		Relinquished By: 1 Sid Butler 5-24-17		Date Time: 5/24/17 10:37	
Relinquished by:		Date Time:		Relinquished By: 3 MARS 5/25/17		Date Time:	
Relinquished by:		Date Time:		Relinquished By: 5		Date Time:	

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Temp: 2.2
CF: (0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 2.0



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CHAIN OF CUSTODY

Page 2 of 5

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

www.xenco.com

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes					
Company Name / Branch: COG Operating LLC				Project Name/Number:													
Company Address: 2407 Pecos Avenue, Artesia NM, 88210				Project Location:													
Email:				Phone No:				Invoice To:				COG Operating LLC Attn: Robert McNeill 600 W Illinois Midland, Texas 79701					
Project Contact:																	
Sampler's Name																	
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	Number of preserved bottles							Field Comments			
							HCl	NaOH/HZn	Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE		
1	T2	SURF	5/23/17	9:40AM													
2	T2	1'															
3	T2	2'															
4	T2	3'															
5	T2	4'															
6	T2	6'															
7	T2	8'															
8	T2	10'															
9	T2	12'															
10																	

Turnaround Time (Business days)				Data Deliverable Information				Notes:			
☐ 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				FED-EX / UPS: Tr			
Relinquished by Sampler:	Date Time:	Relinquished By:	Date Time:	Relinquished By:	Date Time:	Relinquished By:	Date Time:
1	5-24-17	Did Butler	11:00 A	Did Butler	5:24-17	Did Butler	5:24-17
Relinquished by:	Date Time:	Relinquished By:	Date Time:	Relinquished By:	Date Time:	Relinquished By:	Date Time:
3		MMMS	5/25/17	MMMS	5/25/17	MMMS	5/25/17
Relinquished by:	Date Time:	Relinquished By:	Date Time:	Relinquished By:	Date Time:	Relinquished By:	Date Time:
5							

Temp: 2.2 IR ID: R-8
CF: (0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 2.0

On Ice: ☒ Cooler Temp: 5.5

Thermo. Corr. Factor

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates 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 losses or expenses incurred by the Client if such losses are due to circumstances beyond the control of Xenco. A minimum 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 fully executed client contract.



Dallas Texas (214-902-0300)

Midland, Texas (432-704-5251)

www.xenco.com

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes			
Company Name / Branch: COG Operating LLC				Project Name/Number:											
Company Address: 2407 Pecos Avenue, Artesia NM, 88210				Project Location:											
Email:				Invoice To:											
Phone No:				COG Operating LLC Attn: Robert McNeill 600 W Illinois Midland, Texas 79701											
Project Contact:															
Samplers Name															
Field ID / Point of Collection				Collection				Number of preserved bottles				Field Comments			
No.	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MeOH	NONE		
1	3'	5/23/17	12:00 PM												
2	1'														
3	2'														
4	3'														
5	4'														
6	6'														
7	8'														
8	16'														
9	12'														
10															
Turnaround Time (Business days)				Data Deliverable Information				Notes:							
☐ Same Day TAT ☐ Next Day EMERGENCY ☐ 2 Day EMERGENCY ☐ 3 Day EMERGENCY				☐ Level II Std QC ☐ Level III Std QC+ Forms ☐ Level 3 (CLP Forms) ☐ TRRP Checklist				☐ Level IV (Full Data Pkg /raw data) ☐ TRRP Level IV ☐ UST / RG -411							
TAT Starts Day received by Lab, if received by 5:00 pm															
Relinquished by Sampler:				Received By:				Relinquished By:				Recei			
Date Time: 5/24/17 11:00 AM				Date Time: 5/24/17 11:00 AM				Date Time: 5/24/17 11:00 AM				Date Time: 5/24/17 11:00 AM			
Relinquished by:				Received By:				Relinquished By:				Recei			
Date Time: 5/24/17 11:00 AM				Date Time: 5/24/17 11:00 AM				Date Time: 5/24/17 11:00 AM				Date Time: 5/24/17 11:00 AM			
Relinquished by:				Received By:				Relinquished By:				Recei			
Date Time: 5/24/17 11:00 AM				Date Time: 5/24/17 11:00 AM				Date Time: 5/24/17 11:00 AM				Date Time: 5/24/17 11:00 AM			

Notice: Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates 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 losses or expenses incurred by the Client if such losses are due to circumstances beyond the control of Xenco. A minimum 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 fully executed, client contract.



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CHAIN OF CUSTODY

Page 4 Of 5

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

www.xenco.com

Client / Reporting Information		Project Information		Analytical Information		Matrix Codes	
Company Name / Branch: COG Operating LLC		Project Name/Number: NG PHILLIPS STATE #37					
Company Address: 2407 Pecos Avenue, Artesia NM, 88210		Project Location: EDDY, NM					
Email: DNEELZ@CONKHO.COM		Invoice To: COG Operating LLC Attn: Robert McNeill 600 W Illinois Midland, Texas 79701					
Phone No: 432-215-2783							
Project Contact:							
Samplers Name							
No.	Field ID / Point of Collection	Sample Depth	Collection Date	Time	Matrix	# of bottles	Number of preserved bottles
1	TU	5'4" F	8/23/17	10:30 AM			
2	TU	1'					
3	TU	2'					
4	TU	3'					
5	TU	4'					
6	TU	6'					
7	TU	8'					
8	TU	10'					
9	TU	12'					
10	TU	14'					
Turnaround Time (Business days)		Data Deliverable Information		Notes:			
☐ Same Day TAT		☐ Level II Std QC		☐ Level IV (Full Data Pkg / raw data)			
☐ Next Day EMERGENCY		☐ Level III Std QC+ Forms		☐ TRRP Level IV			
☐ 2 Day EMERGENCY		☐ Level 3 (CLP Forms)		☐ UST / RG -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 COURIER DELIVERY							
Relinquished by Sampler:		Received By:		Relinquished By:		Date Time:	
1		5/24/17 11:00 AM		11/20/17		5/24/17	
Relinquished by:		Received By:		Relinquished By:		Date Time:	
3		5/25/17		5/25/17		5/25/17	
Relinquished by:		Received By:		Relinquished By:		Date Time:	
5		5/25/17		5/25/17		5/25/17	
Temp: 2.2		IR ID: R-8		CF: (0-6: -0.2°C)		(6-23: +0.2°C)	
Corrected Temp: 2.0		Cooler Temp: 5.5		On Ice		Thermo. Corr. Factor	

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CHAIN OF CUSTODY

Page 5 of 5

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

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Client / Reporting Information				Project Information				Analytical Information				Matrix Codes			
Company Name / Branch: COG Operating LLC				Project Name/Number:											
Company Address: 2407 Pecos Avenue, Artesia NM, 88210				Project Location:											
Email:				Phone No:				Invoice To:				COG Operating LLC Attn: Robert McNeill 600 W Illinois Midland, Texas 79701			
Project Contact:															
Sampler's Name															
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	Number of preserved bottles				Field Comments				
							HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	
1	TS	SURF	5/23/17	11:00 AM											CHLORIDE
2	TS	1'													TRP
3	TS	2'													BTX
4	TS	3'													
5	TS	4'													
6	TS	6'													
7	TS	8'													
8	TS	14'													
9															
10															

Data Deliverable Information				Notes:			
☐ 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

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY			
Relinquished by Sampler:	Date Time:	Relinquished By:	Relinquished Date Time:
1	5-24-17 11:00 AM	1. Add Butler	5-24-17 11:00 AM
2			
3			
4			
5			

Temp: 2.2 IR ID: R-8
CF: (0-6: -0.2°C)
Corrected Temp: 2.0

On Ice	Cooler Temp.	Thermo. Corr. Factor
1	5.52	

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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: COG Operating LLC

Date/ Time Received: 05/25/2017 10:37:00 AM

Work Order #: 553946

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
#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: 05/25/2017

Checklist reviewed by: Holly Taylor
Holly Taylor

Date: 05/31/2017



Certificate of Analysis Summary 565853

American Safety Services, Odessa, TX

Project Name: COG Phillips State 37



Project Id:

Contact: Thomas Franklin

Project Location: Eddy CO.NM

Date Received in Lab: Wed Oct-18-17 12:05 pm

Report Date: 25-OCT-17

Project Manager: Brandi Ritcherson

Analysis Requested	Lab Id:	565853-001	565853-002				
	Field Id:	Trench 1A@T1	Trench 1A @T1				
	Depth:	8- ft	9- ft				
	Matrix:	SOIL	SOIL				
	Sampled:	Oct-17-17 11:00	Oct-17-17 11:02				
BTEX by EPA 8021B	Extracted:	Oct-20-17 10:00	Oct-20-17 10:00				
	Analyzed:	Oct-20-17 17:41	Oct-20-17 17:59				
	Units/RL:	mg/kg RL	mg/kg RL				
	Benzene	<0.00197 0.00197	<0.00196 0.00196				
	Toluene	<0.00197 0.00197	<0.00196 0.00196				
Ethylbenzene		<0.00197 0.00197	<0.00196 0.00196				
m,p-Xylenes		<0.00394 0.00394	<0.00393 0.00393				
o-Xylene		<0.00197 0.00197	<0.00196 0.00196				
Total Xylenes		<0.00197 0.00197	<0.00196 0.00196				
Total BTEX		<0.00197 0.00197	<0.00196 0.00196				
Chloride by EPA 300	Extracted:	Oct-23-17 16:45	Oct-23-17 16:45				
	Analyzed:	Oct-24-17 13:38	Oct-24-17 13:45				
	Units/RL:	mg/L RL	mg/L RL				
	Chloride	1189.2 24.606	197.50 4.9116				
TPH by SW8015 Mod	Extracted:	Oct-20-17 17:00	Oct-20-17 17:00				
	Analyzed:	Oct-21-17 06:11	Oct-21-17 06:31				
	Units/RL:	mg/kg RL	mg/kg RL				
	Gasoline Range Hydrocarbons (GRO)	<15.0 15.0	<15.0 15.0				
	Diesel Range Organics (DRO)	195 15.0	27.6 15.0				
Oil Range Hydrocarbons (ORO)		34.1 15.0	<15.0 15.0				
Total TPH		229.1 15	27.6 15				

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

Brandi Ritcherson

Brandi Ritcherson
Project Manager

Analytical Report 565853

for
American Safety Services

Project Manager: Thomas Franklin

COG Phillips State 37

25-OCT-17

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):

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

Xenco-Dallas (EPA Lab code: TX01468):

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

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

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

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

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

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

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



25-OCT-17

Project Manager: **Thomas Franklin**
American Safety Services
8715 Andrews Hwy
Odessa, TX 79765

Reference: XENCO Report No(s): **565853**
COG Phillips State 37
Project Address: Eddy CO.NM

Thomas Franklin:

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) 565853. 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. 565853 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,

Brandi Ritcherson

Project Manager

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Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America



Sample Cross Reference 565853



American Safety Services, Odessa, TX

COG Phillips State 37

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Trench 1A@T1	S	10-17-17 11:00	8 ft	565853-001
Trench 1A @T1	S	10-17-17 11:02	9 ft	565853-002



CASE NARRATIVE

Client Name: American Safety Services

Project Name: COG Phillips State 37

Project ID:

Work Order Number(s): 565853

Report Date: 25-OCT-17

Date Received: 10/18/2017

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3031040 BTEX by EPA 8021B

Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 566044-021 S.

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



Certificate of Analytical Results 565853



American Safety Services, Odessa, TX

COG Phillips State 37

Sample Id: **Trench 1A@T1**

Matrix: Soil

Date Received: 10.18.17 12.05

Lab Sample Id: 565853-001

Date Collected: 10.17.17 11.00

Sample Depth: 8 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MNV

% Moisture:

Analyst: MNV

Date Prep: 10.23.17 16.45

Basis: Wet Weight

Seq Number: 3031294

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1189.2	24.606	mg/L	10.24.17 13.38		5

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 10.20.17 17.00

Basis: Wet Weight

Seq Number: 3031144

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.21.17 06.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	195	15.0	mg/kg	10.21.17 06.11		1
Oil Range Hydrocarbons (ORO)	PHCG2835	34.1	15.0	mg/kg	10.21.17 06.11		1
Total TPH	PHC635	229.1	15	mg/kg	10.21.17 06.11		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	108	%	70-135	10.21.17 06.11		
o-Terphenyl	84-15-1	108	%	70-135	10.21.17 06.11		



Certificate of Analytical Results 565853



American Safety Services, Odessa, TX

COG Phillips State 37

Sample Id: **Trench 1A@T1**

Matrix: Soil

Date Received: 10.18.17 12.05

Lab Sample Id: 565853-001

Date Collected: 10.17.17 11.00

Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: JUM

% Moisture:

Analyst: JUM

Date Prep: 10.20.17 10.00

Basis: Wet Weight

Seq Number: 3031040

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00197	0.00197	mg/kg	10.20.17 17.41	U	1
Toluene	108-88-3	<0.00197	0.00197	mg/kg	10.20.17 17.41	U	1
Ethylbenzene	100-41-4	<0.00197	0.00197	mg/kg	10.20.17 17.41	U	1
m,p-Xylenes	179601-23-1	<0.00394	0.00394	mg/kg	10.20.17 17.41	U	1
o-Xylene	95-47-6	<0.00197	0.00197	mg/kg	10.20.17 17.41	U	1
Total Xylenes	1330-20-7	<0.00197	0.00197	mg/kg	10.20.17 17.41	U	1
Total BTEX		<0.00197	0.00197	mg/kg	10.20.17 17.41	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	115	%	80-120	10.20.17 17.41		
1,4-Difluorobenzene	540-36-3	108	%	80-120	10.20.17 17.41		



Certificate of Analytical Results 565853



American Safety Services, Odessa, TX

COG Phillips State 37

Sample Id: **Trench 1A @T1**

Matrix: Soil

Date Received: 10.18.17 12.05

Lab Sample Id: 565853-002

Date Collected: 10.17.17 11.02

Sample Depth: 9 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MNV

% Moisture:

Analyst: MNV

Date Prep: 10.23.17 16.45

Basis: Wet Weight

Seq Number: 3031294

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	197.50	4.9116	mg/L	10.24.17 13.45		1

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 10.20.17 17.00

Basis: Wet Weight

Seq Number: 3031144

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.21.17 06.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	27.6	15.0	mg/kg	10.21.17 06.31		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	10.21.17 06.31	U	1
Total TPH	PHC635	27.6	15	mg/kg	10.21.17 06.31		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	10.21.17 06.31	
o-Terphenyl	84-15-1	101	%	70-135	10.21.17 06.31	



Certificate of Analytical Results 565853



American Safety Services, Odessa, TX

COG Phillips State 37

Sample Id: **Trench 1A @T1**

Matrix: Soil

Date Received: 10.18.17 12.05

Lab Sample Id: 565853-002

Date Collected: 10.17.17 11.02

Sample Depth: 9 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: JUM

% Moisture:

Analyst: JUM

Date Prep: 10.20.17 10.00

Basis: Wet Weight

Seq Number: 3031040

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00196	0.00196	mg/kg	10.20.17 17.59	U	1
Toluene	108-88-3	<0.00196	0.00196	mg/kg	10.20.17 17.59	U	1
Ethylbenzene	100-41-4	<0.00196	0.00196	mg/kg	10.20.17 17.59	U	1
m,p-Xylenes	179601-23-1	<0.00393	0.00393	mg/kg	10.20.17 17.59	U	1
o-Xylene	95-47-6	<0.00196	0.00196	mg/kg	10.20.17 17.59	U	1
Total Xylenes	1330-20-7	<0.00196	0.00196	mg/kg	10.20.17 17.59	U	1
Total BTEX		<0.00196	0.00196	mg/kg	10.20.17 17.59	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	101	%	80-120	10.20.17 17.59		
4-Bromofluorobenzene	460-00-4	118	%	80-120	10.20.17 17.59		

- 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 565853

American Safety Services

COG Phillips State 37

Analytical Method: Chloride by EPA 300

Seq Number: 3031294

MB Sample Id: 7633096-1-BLK

Matrix: Solid

LCS Sample Id: 7633096-1-BKS

Prep Method: E300P

Date Prep: 10.23.17

LCSD Sample Id: 7633096-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.0000	250.00	252.27	101	253.73	101	90-110	1	20	mg/L	10.24.17 10:56	

Analytical Method: Chloride by EPA 300

Seq Number: 3031294

Parent Sample Id: 565815-004

Matrix: Soil

MS Sample Id: 565815-004 S

Prep Method: E300P

Date Prep: 10.23.17

MSD Sample Id: 565815-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	465.33	246.00	703.65	97	695.94	94	90-110	1	20	mg/L	10.24.17 12:51	

Analytical Method: Chloride by EPA 300

Seq Number: 3031294

Parent Sample Id: 566094-008

Matrix: Soil

MS Sample Id: 566094-008 S

Prep Method: E300P

Date Prep: 10.23.17

MSD Sample Id: 566094-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	27.446	248.00	282.50	103	280.11	102	90-110	1	20	mg/L	10.24.17 11:16	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3031144

MB Sample Id: 7633054-1-BLK

Matrix: Solid

LCS Sample Id: 7633054-1-BKS

Prep Method: TX1005P

Date Prep: 10.20.17

LCSD Sample Id: 7633054-1-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	1120	112	1050	105	70-135	6	35	mg/kg	10.21.17 04:28	
Diesel Range Organics (DRO)	<15.0	1000	1120	112	1110	111	70-135	1	35	mg/kg	10.21.17 04:28	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	112		122		110		70-135	%	10.21.17 04:28
o-Terphenyl	109		120		104		70-135	%	10.21.17 04:28



QC Summary 565853

American Safety Services

COG Phillips State 37

Analytical Method: TPH by SW8015 Mod

Seq Number: 3031144

Parent Sample Id: 565936-001

Matrix: Soil

MS Sample Id: 565936-001 S

Prep Method: TX1005P

Date Prep: 10.20.17

MSD Sample Id: 565936-001 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	997	1040	104	1050	105	70-135	1	35	mg/kg	10.21.17 05:29	
Diesel Range Organics (DRO)	<15.0	997	1120	112	1110	111	70-135	1	35	mg/kg	10.21.17 05:29	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	110		108		70-135	%	10.21.17 05:29
o-Terphenyl	107		100		70-135	%	10.21.17 05:29

Analytical Method: BTEX by EPA 8021B

Seq Number: 3031040

MB Sample Id: 7632991-1-BLK

Matrix: Solid

LCS Sample Id: 7632991-1-BKS

Prep Method: SW5030B

Date Prep: 10.20.17

LCSD Sample Id: 7632991-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00198	0.0988	0.0967	98	0.0970	98	70-130	0	35	mg/kg	10.20.17 14:15	
Toluene	<0.00198	0.0988	0.0974	99	0.0961	97	70-130	1	35	mg/kg	10.20.17 14:15	
Ethylbenzene	<0.00198	0.0988	0.0997	101	0.0981	99	71-129	2	35	mg/kg	10.20.17 14:15	
m,p-Xylenes	<0.00395	0.198	0.196	99	0.193	97	70-135	2	35	mg/kg	10.20.17 14:15	
o-Xylene	<0.00198	0.0988	0.0959	97	0.0945	95	71-133	1	35	mg/kg	10.20.17 14:15	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	106		90		84		80-120	%	10.20.17 14:15
4-Bromofluorobenzene	118		103		102		80-120	%	10.20.17 14:15

Analytical Method: BTEX by EPA 8021B

Seq Number: 3031040

Parent Sample Id: 566044-021

Matrix: Soil

MS Sample Id: 566044-021 S

Prep Method: SW5030B

Date Prep: 10.20.17

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	Limits	Units	Analysis Date	Flag
Benzene	<0.00197	0.0986	0.0372	38	70-130	mg/kg	10.20.17 14:51	X
Toluene	<0.00197	0.0986	0.0345	35	70-130	mg/kg	10.20.17 14:51	X
Ethylbenzene	<0.00197	0.0986	0.0332	34	71-129	mg/kg	10.20.17 14:51	X
m,p-Xylenes	<0.00394	0.197	0.0639	32	70-135	mg/kg	10.20.17 14:51	X
o-Xylene	<0.00197	0.0986	0.0314	32	71-133	mg/kg	10.20.17 14:51	X

Surrogate	MS %Rec	MS Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	114		80-120	%	10.20.17 14:51
4-Bromofluorobenzene	137		80-120	%	10.20.17 14:51

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Client / Reporting Information				Project Information				Xenco Quote #		Xenco Job #						
Company Name / Branch: American Safety Services Inc.				Project Name/Number: CCA Phillips State 37				Analytical Information		Matrix Codes						
Company Address: 8715 Andrews Hwy Odessa, TX 79765				Project Location: Eddy Co. NM												
Email: franklin@americansafety.net zimmernan@americansafety.net				Invoice To: CCA - ATTN Becky Huskell												
Phone No: 432-557-9868				PO Number:												
Project Contact: Thomas Franklin																
Sampler's Name: Michael Biel																
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Notes	Field Comments
1	Trench 1A @ T1	5'	10/16/17	11:00	S	1										BA ICE
2	Trench 1A @ T1	9'	10/17/17	11:02	S	1										
3																
4																
5																
6																
7																
8																
9																
10																
Turnaround Time (Business days)																
Data Deliverable Information																
Notes:																
Temp: 1.9 IR ID: R-8																
CF: (0-6: -0.2°C) (6-23: +0.2°C)																
Corrected Temp: 1.7																
FED-EX / L																
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Date Time: 10/16/17 12:05																
Relinquished by: 99 Received By: 99																
Date Time: 10/16/17 12:05																
Relinquished by: 100 Received By: 100																
Date Time: 10/16/17 12:05																

Notice: Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates 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 losses or expenses incurred by the Client if such losses are due to circumstances beyond the control of Xenco. A minimum 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 fully executed client contract.



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: American Safety Services

Date/ Time Received: 10/18/2017 12:05:00 PM

Work Order #: 565853

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	1.7
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Shawnee Smith

Date: 10/18/2017

Checklist reviewed by:

Brandi Ritcherson

Date: 10/19/2017



APPENDIX D

Initial C-141

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

APR 28 2017

Form C-141
Revised August 8, 2011

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

RECEIVED to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

NAB1712940035

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: N G Phillips St #031	Facility Type: Flowline

Surface Owner: State	Mineral Owner:	API No. 30-015-24848
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LOCATION OF RELEASE

Unit Letter P	Section 27	Township 17S	Range 28E	Feet from the 1165	North/South Line South	Feet from the 978	East/West Line East	County Eddy
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Latitude 32.8017197 Longitude -104.1586685

NATURE OF RELEASE

Type of Release: Oil & Produced Water	Volume of Release: 5 bbls Oil & 3 bbls PW	Volume Recovered: 4 bbls Oil & 2 bbls PW
Source of Release: Flowline	Date and Hour of Occurrence: April 23, 2017 12:00 pm	Date and Hour of Discovery: April 23, 2017 12:00 pm
Was Immediate Notice Given? ☐ Yes ☒ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour:	
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 due to corrosion on a steel flowline. The flowline was repaired.

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	Signed By: <i>Mike Brundage</i> Approved by Environmental Specialist:	
Title: Senior HSE Coordinator	Approval Date: 5/1/17	Expiration Date: N/A
E-mail Address: rhaskell@concho.com	Conditions of Approval: <i>See attached</i>	Attached ☒
Date: April 28, 2017 Phone: 432-683-7443		

* Attach Additional Sheets If Necessary

2RP-4195



APPENDIX E

Groundwater Data



USGS 324715104180201 17S.27E.32.32000

