SITE INFORMATION

Report Type: Work Plan 1RP-4534

General Site Information:						
Site:	**Pintail 3 Federal #1H Battery**					
Company:	**COG Operating LLC**					
Section, Township and Range	**Unit O**	**Sec. 03**	**T 26S**	**R 32E**		
Lease Number:	**API No. 30-025-40684**					
County:	**Lea County**					
GPS:	**32.0657692º N**			**103.6615829º W**		
Surface Owner:	Federal					
Mineral Owner:						
Directions:	From intersection of NM 128 & CR 1 in Lea County, travel SOUTH on CR 1 for 10.4 mi, turn EAST onto Pipeline Rd for 0.70 mi to location on north side of lease rd.					

Release Data:	
Date Released:	12/20/2016
Type Release:	Oil
Source of Contamination:	Valve failure
Fluid Released:	16 bbls
Fluids Recovered:	6 bbls

Official Communication:			
Name:	Robert McNeil		Ike Tavarez
Company:	COG Operating, LLC		Tetra Tech
Address:	One Concho Center		4000 N. Big Spring
	600 W. Illinois Ave.		Ste 401
City:	Midland Texas, 79701		Midland, Texas
Phone number:	(432) 686-3023		(432) 687-8110
Fax:	(432) 684-7137		
Email:	rmcneil@conchoresources.com		Ike.Tavarez@tetratech.com

Ranking Criteria		
Depth to Groundwater:	***Ranking Score***	***Site Data***
<50 ft	20	
50-99 ft	10	
>100 ft.	***0***	*250'*
WellHead Protection:	***Ranking Score***	***Site Data***
Water Source <1,000 ft., Private <200 ft.	*20*	
Water Source >1,000 ft., Private >200 ft.	***0***	*0*
Surface Body of Water:	***Ranking Score***	***Site Data***
<200 ft.	*20*	
200 ft - 1,000 ft.	10	
>1,000 ft.	***0***	*0*
Total Ranking Score:	***0***	

Acceptable Soil RRAL (mg/kg)		
Benzene	***Total BTEX***	***TPH***
10	50	5,000

TETRA TECH

August 29, 2017

Ms. Olivia Yu
Environmental Engineer Specialist
Oil Conservation Division, District 1
1625 North French Drive
Hobbs, New Mexico 88240

Re: Work Plan for the COG Operating LLC., Pintail 3 Federal #1H Battery, Unit O, Section 03, Township 26 South, Range 32 East, Lea County, New Mexico. 1RP-4534.

Ms. Yu:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC., (COG) to assess a release that occurred at the Pintail 3 Federal #1H Battery, Unit O, Section 03, Township 26 South, Range 32 East, Lea County, New Mexico (Site). The spill site coordinates are N 32.06563º, W 103.66097 º. The site location is shown on Figures 1 and 2.

Background

According to the State of New Mexico C-141 Initial Report, the leak was discovered on December 20, 2016, and released approximately sixteen (16) barrels of oil due to a failed check valve. A vacuum truck was used to remove all standing fluids, and approximately six (6) barrels of oil was recovered. The release migrated into the pasture to the east of the facility and measured approximately 15' x 640'. The initial C-141 form is included in Appendix A.

Groundwater

No water wells were listed within Section 03 on the New Mexico Office of the State Engineer's database. The nearest well is located in Section 06, with a reported depth to water of approximately 350' below surface. According to the Chevron Texaco Groundwater Trend map, the average depth to groundwater in this area is approximately 250' below surface. The groundwater data is shown in Appendix B.

Tetra Tech
4000 North Big Spring, Suite 401, Midland, TX 79705
Tel 432.682.4559 Fax 432.682.3946 www.tetratech.com

Regulatory

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, dated August 13, 1993. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the depth to groundwater, the proposed RRAL for TPH is 5,000 mg/kg.

Soil Assessment and Analytical Results

Initial Assessment

On January 10, 2017, COG personnel were onsite to evaluate and sample the release area. A total of five (5) sample trenches (T-1, T-2, T-3, T-4 and T-5) were installed in the release area with total depths ranging from 2.0' to 7.0' below surface. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 1. The trench locations are shown on Figure 3.

Chlorides and Benzene

Referring to Table 1, none of the soil samples showed elevated chloride concentrations with chloride highs of 62.7 mg/kg (T-1), 26.5 mg/kg (T-2), 17.1 mg/kg (T-3), 18.7 mg/kg (T-4), and 23.3 mg/kg (T-5). Additionally, none of the samples were above the RRAL for benzene.

Total BTEX

Elevated total BTEX concentrations were detected in the shallow soils. Trenches (T-2, T-3, and T-4) showed total BTEX concentrations exceeding the RRAL of 51.6 mg/kg, 275 mg/kg, and 129 mg/kg at 0-1', respectively. However, the total BTEX declined with depth to below the RRAL at 2.0' below surface. In addition, the bottom trench samples showed total BTEX concentrations of 0.407 mg/kg (7.0'), <0.00389 mg/kg (3.5'), and <0.00290 mg/kg (6.0'), respectively. The areas of trenches (T-1 and T-5) showed a deeper impact to the soils which exceeded the total BTEX RRAL of 137 mg/kg and 130 mg/kg at 2.0' below surface, respectively. The impacted area of trench (T-5) declined with depth to 0.339 mg/kg at 3.0' below surface, however trench (T-1) was not vertically defined due to a dense caliche formation.

TPH

The areas of trenches (T-1 and T-2) did not show any TPH concentrations above the 5,000 mg/kg threshold. However, the areas of (T-3, T-4, and T-5) showed elevated TPH concentrations in the shallow soils, with concentrations of 12,600 mg/kg (1.0'), 6,530 mg/kg (1.0'), and 11,000 mg/kg (2.0'), respectively. The TPH concentrations declined below the RRAL at 2.0' to 3.0' and showed bottom trench concentrations of <15.0 mg/kg (3.5'), 21.5 mg/kg (6.0'), and 495 mg/kg (3.0'), respectively. Deeper samples were not collected in the areas of trenches (T-3 and T-5) due to a dense caliche formation in the area.

Additional Sampling and Evaluation

Based on the laboratory results, Tetra Tech personnel returned to the site on July 7, 2017, to resample and attempt to grab deeper samples in the areas of trenches (T-1, T-2, T-3, T-4, and T-5). However, deeper samples were not collected due to a dense caliche formation in the area. The sample depths ranged from 1.0' to 4.0' below surface. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The results of the sampling are summarized in Table 1. The trench locations are shown on Figure 3.

Based on the resampling results, the TPH and BTEX did show a reduction in concentrations to the shallow soils, and it appears that natural attenuation had occurred at the site. Referring to Table 1, none of the samples collected showed benzene or total BTEX concentrations above the RRAL's. Additionally, the samples collected in the areas of trenches (T-1, T-2, T-3, and T-4) did not show any TPH concentrations above the RRAL of 5,000 mg/kg. However, the area of trench (T-5) did show a TPH concentration of 5,510 mg/kg at 0-1' below surface, which then declined with depth to 3,560 mg/kg at 2.0' below surface.

Work Plan

Based on the laboratory results, COG proposes to remove the impacted material as highlighted (green) in Table 1 and shown on Figure 4. The area of trench (T-5) will be excavated to 1.0'-2.0' below surface to remove the shallow TPH impact to the soils. The remaining areas of trenches (T-1, T-2, T-3, and T-4) will be surficially scraped to remove any visual staining. Once the areas are excavated to the appropriate depths, the areas will be backfilled with clean material to surface grade. All of the excavated material will be transported offsite for proper disposal.

The proposed excavation depths may not be reached due to wall cave ins and safety concerns for onsite personnel. In addition, impacted soil around oil and gas equipment, structures or lines may not be feasible or practicable to be removed due to safely concerns for onsite personnel. As such, COG will excavate the impacted soils to the maximum extent practicable.

Upon completion, a final report detailing the remediation activities will be submitted to the NMOCD. If you have any questions or comments concerning the assessment or the proposed remediation activities for this site, please call at (432) 682-4559.

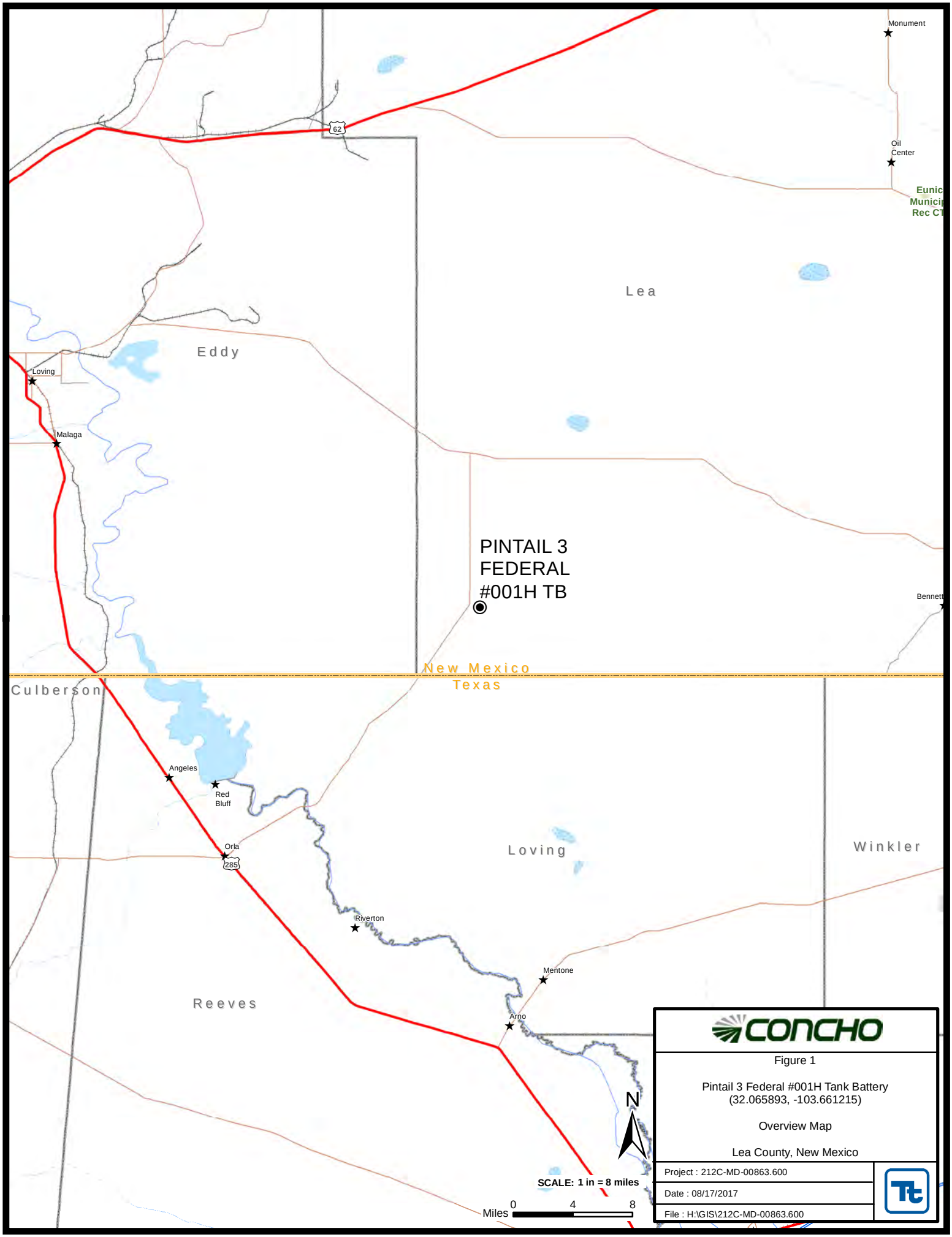
Respectfully submitted,
TETRA TECH

Clair Gonzales,
Geologist

Ike Tavarez,
Senior Project Manager, P.G.

cc: Robert McNeill – COG
Dakota Neel – COG
Rebecca Haskell – COG
Shelly Tucker - BLM

Figures



CONCHO

Figure 1

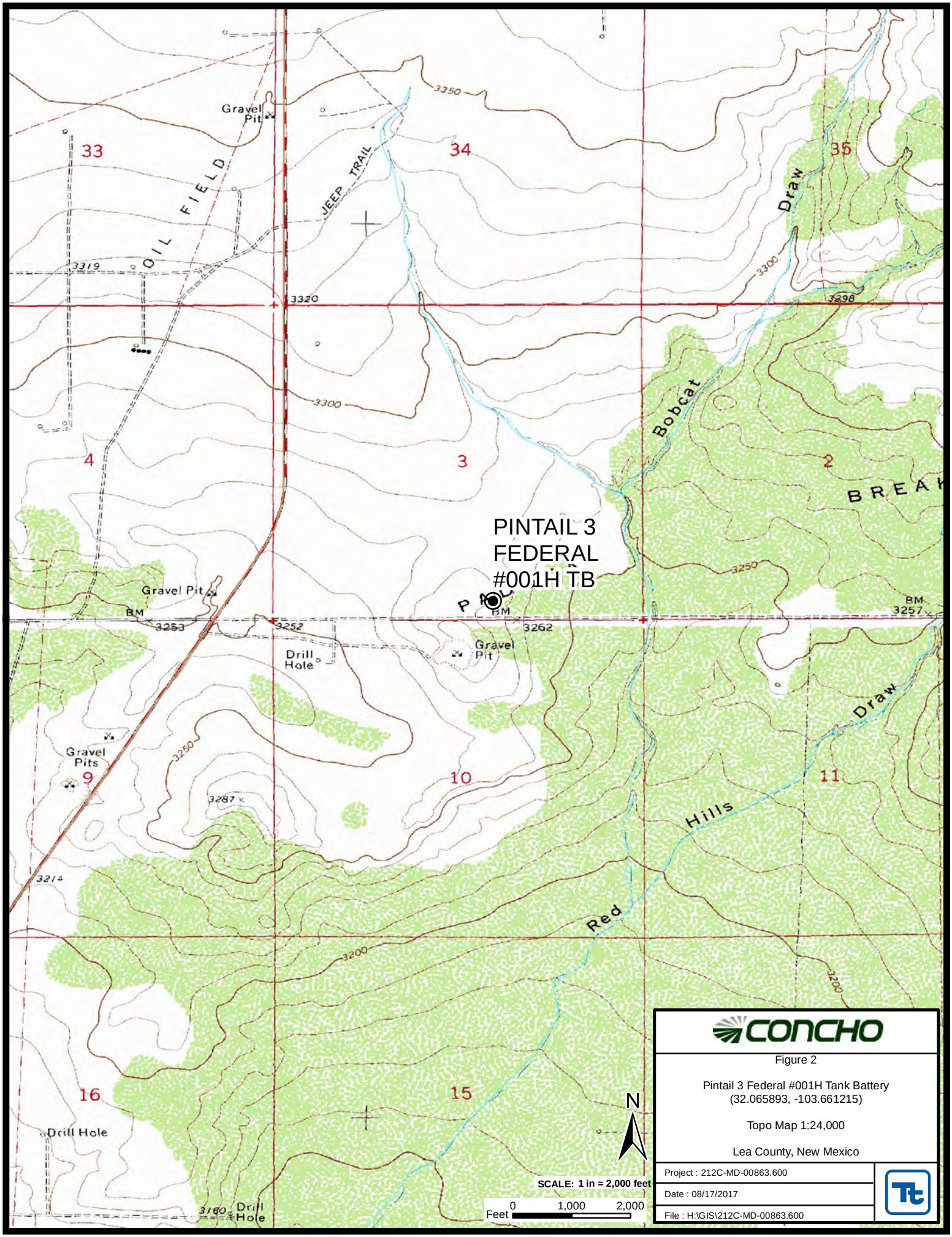
Pintail 3 Federal #001H Tank Battery
(32.065893, -103.661215)

Overview Map

Lea County, New Mexico

Project : 212C-MD-00863.600	
Date : 08/17/2017	
File : H:\GIS\212C-MD-00863.600	

Mapped By: Isabel Marmolejo



CONCHO

Figure 2

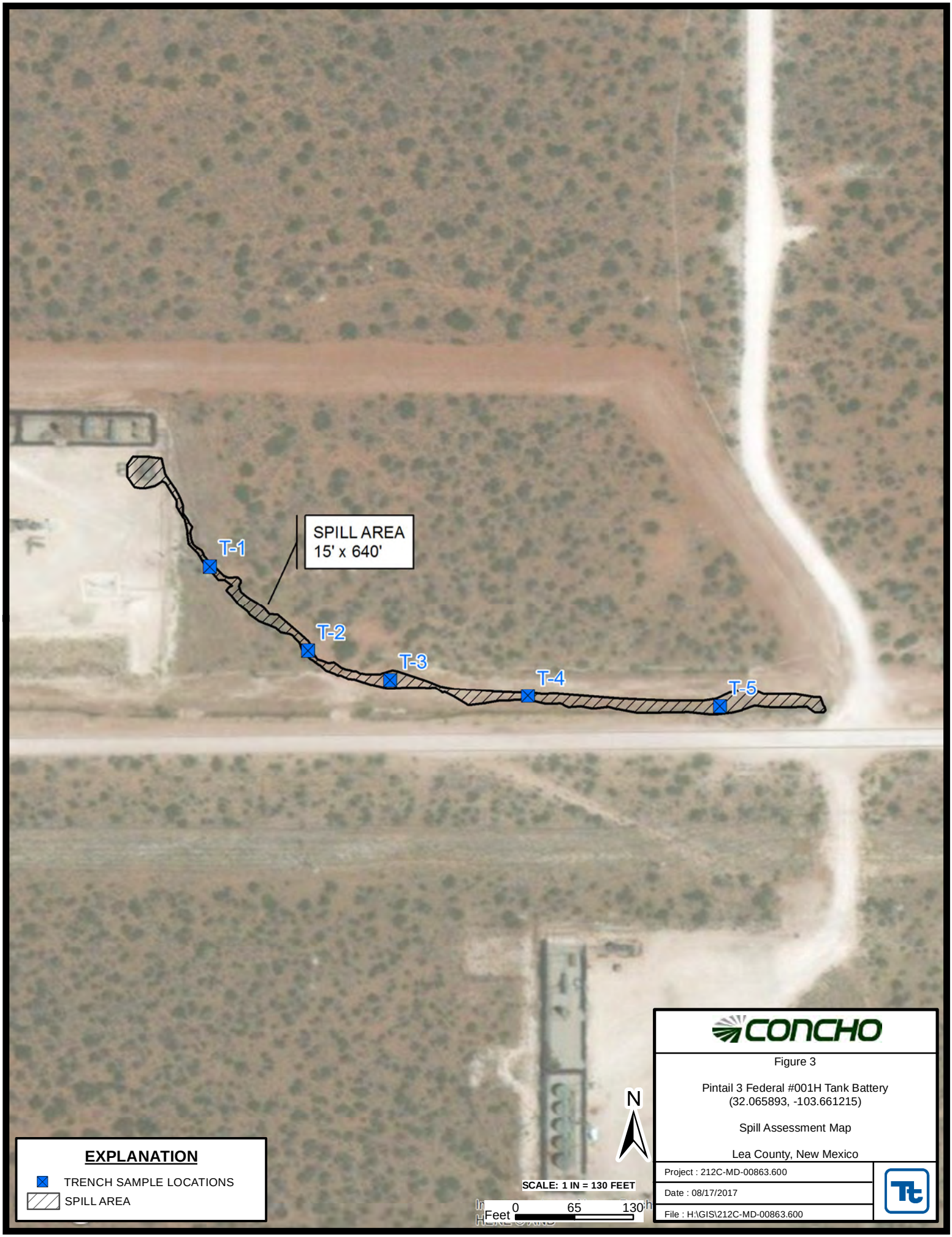
Pintail 3 Federal #001H Tank Battery
(32.065893, -103.661215)

Topo Map 1:24,000

Lea County, New Mexico

Project : 212C-MD-00863.600	
Date : 08/17/2017	
File : H:\GIS\212C-MD-00863.600	

Mapped By: Isabel Marmolejo



CONCHO

Figure 3

Pintail 3 Federal #001H Tank Battery
(32.065893, -103.661215)

Spill Assessment Map

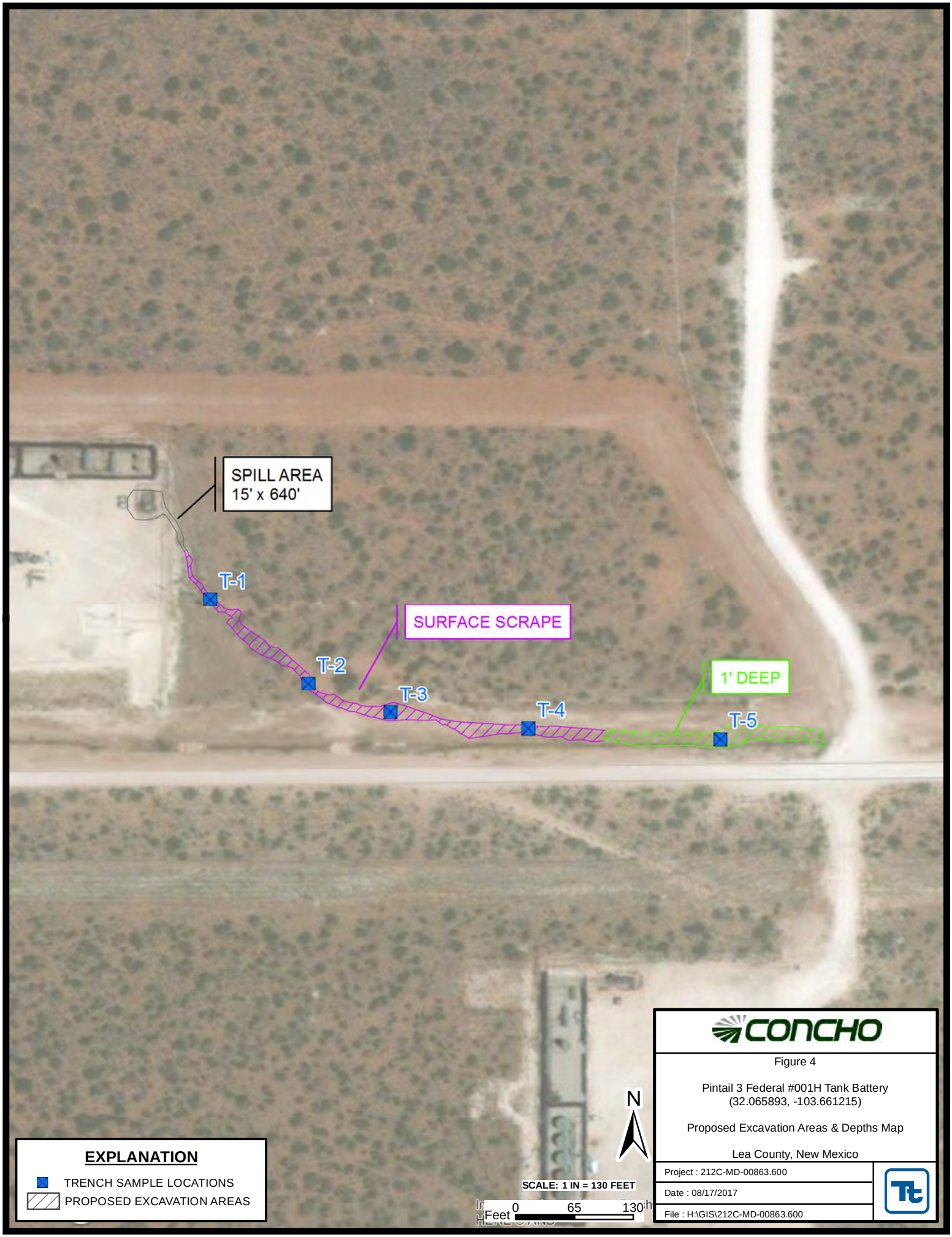
Lea County, New Mexico

Project : 212C-MD-00863.600

Date : 08/17/2017

File : H:\GIS\212C-MD-00863.600

Mapped By: Isabel Marmolejo



Mapped By: Isabel Marmolejo

Tables

Table 1
COG Operating LLC.
Pintail 3 Federal #1H
Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Soil Status		TPH (mg/kg)				Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	GRO	DRO	ORO	Total						
T-1	1/10/2017	1	X		64.1	1,200	-	1,260	<0.00151	0.00701	0.00420	0.186	0.197	62.7
	"	2	X		683	1,080	-	1,760	1.49	43.0	10.4	81.9	**137**	21.0
Resampled	7/7/2017	0-1	X		<15.0	155	<15.0	155	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	7.57
	"	2	X		292	1,260	120	1,670	<0.00199	<0.00199	<0.00199	0.0813	0.0813	8.27
	"	4	X		62.5	260	<15.0	323	<0.00199	0.00222	<0.00199	0.0783	0.0805	13.3
T-2	1/10/2017	1	X		1,030	3,040	-	4,070	<0.0752	11.7	5.54	34.4	**51.6**	28.0
	"	2	X		724	2,570	-	3,290	<0.149	4.93	4.04	22.9	31.9	11.5
	"	3	X		303	874	-	1,180	<0.149	5.70	2.60	14.8	23.1	11.2
	"	4	X		24.9	223	-	248	<0.00151	0.0036	<0.00201	0.00881	0.0124	22.9
	"	5	X		249	1,040	-	1,290	<0.149	0.766	1.32	8.21	10.3	26.5
	"	6	X		<15.0	68.0	-	68.0	<0.00291	<0.00388	<0.00388	<0.00388	<0.00291	8.0
	"	7	X		46.0	250	-	296	<0.149	0.0158	0.0557	0.335	0.407	13.9
Resampled	7/7/2017	0-1	X		-	-	-	-	<0.00202	0.0408	0.0805	0.916	1.04	-
	"	1-1.5	X		-	-	-	-	<0.0200	0.267	0.670	10.5	11.4	-
	"	1.5-2	X		-	-	-	-	<0.00199	0.0401	<0.00199	19.3	19.4	-
T-3	1/10/2017	1	X		**4,670**	**7,950**	-	**12,600**	8.85	94.0	21.0	152	**275**	17.1
	"	2	X		435	1,190	-	1,630	<0.297	11.4	3.98	33.6	48.9	12.9
	"	3	X		<15.0	84.0	-	84.0	<0.00301	<0.00402	<0.00402	<0.00402	<0.00301	5.66
	"	3.5	X		<15.0	<15.0	-	<15.0	<0.00292	<0.00389	<0.00389	<0.00389	<0.00292	12.2
Resampled	7/7/2017	0-1	X		343	3,580	340	4,260	<0.00202	<0.00202	<0.00202	0.0429	0.0429	-
	"	2	X		1,060	3,450	301	4,810	<0.00201	0.0422	0.0958	1.04	1.18	-
T-4	1/10/2017	1	X		**2,000**	**4,530**	-	**6,530**	<0.297	29.2	17.1	82.6	**129**	18.7
	"	2	X		<15.0	<15.0	-	<15.0	<0.00291	<0.00389	<0.00389	<0.00389	<0.00291	6.35
	"	3	X		88.4	434	-	522	<0.00285	0.256	0.263	1.88	2.40	10.2
	"	4	X		<15.0	<15.0	-	<15.0	<0.00287	<0.00383	<0.00383	<0.00383	<0.00287	7.58
	"	6	X		<15.0	21.5	-	21.5	<0.00290	<0.00386	<0.00386	<0.00386	<0.00290	10.1
Resampled	7/7/2017	0-1	X		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	-
T-5	1/10/2017	1	X		<15.0	166	-	166	0.00240	0.00989	0.00391	0.0354	0.0516	9.8
	"	2	X		**2,580**	**8,380**	-	**11,000**	<0.299	36.3	14.7	78.8	**130**	13.6
	"	3	X		59.0	436	-	495	<0.00304	0.0092	0.0199	0.310	0.339	23.3
Resampled	7/7/2017	0-1	X		864	4,220	424	**5,510**	0.0302	0.286	0.0189	0.971	1.31	-
	"	2	X		1,450	1,960	152	3,560	0.0401	3.88	0.147	42.3	46.4	-

(-) Not Analyzed

Naturally Attenuated Below RRAL

Proposed to Excavated and Removed

Appendix A

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

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

Form C-141
Revised August 8, 2011

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: COG Operating LLC	Contact: Robert McNeill
Address: 600 West Illinois Avenue, Midland TX 79701	Telephone No. 432-683-7443
Facility Name: Pintail 3 Federal #001H Battery	Facility Type: Tank Battery

Surface Owner: Federal	Mineral Owner:	API No. 30-025-40684

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
O	03	26S	32E	260	South	2290	East	Lea

Latitude 32.0657692 **Longitude** 103.6615829

NATURE OF RELEASE

Type of Release: Oil	Volume of Release: 16 bbls	Volume Recovered: 6 bbls
Source of Release: Valve Failure	Date and Hour of Occurrence: December 20, 2016 10:00 am	Date and Hour of Discovery: December 20, 2016 10:00 am
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.*

A check valve on dump line from compressor failed. The check vale was replaced.

Describe Area Affected and Cleanup Action Taken.*

The release occurred on the pad and into the adjacent 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: Rebecca Haskell	OIL CONSERVATION DIVISION	
Printed Name: Rebecca Haskell	Approved by Environmental Specialist:	
Title: Senior HSE Coordinator	Approval Date:	Expiration Date:
E-mail Address: rhaskell@concho.com	Conditions of Approval:	Attached ☐
Date: 12/20/16 Phone: 432-683-7443		

* Attach Additional Sheets If Necessary

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
COG - Pintail 3 Federal 31
Lea County, New Mexico

25 South 31 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21 390 290	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

26 South 31 East

6	5	4	3	2	1 335 287
7	8 295 275	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

25 South 32 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

26 South 32 East

6 350	5	4	3 SITE	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21 333 180	22	23	24
30	29	28	27	26	25
31 295	32	33	34	35	36

25 South 33 East

6	5	4	3 172	2	1
7	8	9	10	11 140	12 200
18	17	16	15	14	13
19	20 200	21 120	22	23	24
30	29	28	27 125	26	25
31 257	32	33	34	35	36

26 South 33 East

6	5	4	3 175	2	1
7	8	9	10	11 145	12 200
18	17	16	15	14 135	13
19	20	21 120	22	23	24
30	29	28	27 125	26	25
31	32	33	34	35	36

88 New Mexico State Engineers Well Reports

105 USGS Well Reports

90 Geology and Groundwater Conditions in Southern Lea, County, NM (Report 6)

Geology and Groundwater Resources of Eddy County, NM (Report 3)

34 NMOCD - Groundwater Data

123 Tetra Tech installed temporary wells and field water level

143 NMOCD Groundwater map well location

New Mexico Office of the State Engineer

Water Column/Average Depth to Water

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

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

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

(NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Twws	Rng	X	Y	Depth Well	Depth Water	Water Column
C 02271	R		LE		2	3	21	26S	32E	624449	3544111*	150	125	25
C 02271 POD2		CUB	LE	3	2	3	21	26S	32E	624348	3544010*	270	250	20
C 02274			LE	2	1	2	31	26S	32E	621742	3541730*	300	295	5
C 02323		C	LE	3	2	3	21	26S	32E	624348	3544010*	405	405	0
C 03537 POD1		C	LE	3	2	3	21	26S	32E	624250	3543985	850		
C 03595 POD1		CUB	LE	4	2	3	21	26S	32E	624423	3544045	280	180	100
C 03829 POD1		CUB	LE	3	3	1	06	26S	32E	620628	3549186	646	350	296

Average Depth to Water: **267 feet**

Minimum Depth: **125 feet**

Maximum Depth: **405 feet**

Record Count: 7

PLSS Search:

Township: 26S **Range:** 32E

***UTM location was derived from PLSS - see Help**

8/16/17 9:45 AM

WATER COLUMN/ AVERAGE DEPTH TO WATER

Appendix C

Analytical Report 557116

for

Tetra Tech- Midland

Project Manager: Ike Tavarez

COG- Pintail 3 Federal #1 H

212C-MD-00863

14-JUL-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)

14-JUL-17

Project Manager: **Ike Tavarez**
Tetra Tech- Midland
4000 N. Big Spring Suite 401
Midland, TX 79705

Reference: XENCO Report No(s): **557116**
COG- Pintail 3 Federal #1 H
Project Address: Lea County, NM

Ike Tavarez:

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) 557116. 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. 557116 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,

Kelsey Brooks
Project Manager

Sample Cross Reference 557116

Tetra Tech- Midland, Midland, TX

COG- Pintail 3 Federal #1 H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Trench #1 (0-1')	S	07-07-17 00:00		557116-001
Trench #1 (2')	S	07-07-17 00:00		557116-002
Trench #1 (4')	S	07-07-17 00:00		557116-003
Trench #2 (0-1')	S	07-07-17 00:00		557116-004
Trench #2 (1-1.5')	S	07-07-17 00:00		557116-005
Trench #2 (1.5-2')	S	07-07-17 00:00		557116-006
Trench #3 (0-1')	S	07-07-17 00:00		557116-007
Trench #3 (2')	S	07-07-17 00:00		557116-008
Trench #4 (0-1')	S	07-07-17 00:00		557116-010
Trench #5 (0-1')	S	07-07-17 00:00		557116-011
Trench #5 (2')	S	07-07-17 00:00		557116-012
Trench #3 (3.5')	S	07-07-17 00:00		Not Analyzed
Trench #5 (3.5')	S	07-07-17 00:00		Not Analyzed

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3021934 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3021965 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3022274 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analysis Summary 557116

Tetra Tech- Midland, Midland, TX

Project Name: COG- Pintail 3 Federal #1 H

Project Id: 212C-MD-00863
Contact: Ike Tavarez
Project Location: Lea County, NM

Date Received in Lab: Mon Jul-10-17 08:16 am
Report Date: 14-JUL-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	557116-001		557116-002		557116-003		557116-004		557116-005		557116-006	
	Field Id:	Trench #1 (0-1')		Trench #1 (2')		Trench #1 (4')		Trench #2 (0-1')		Trench #2 (1-1.5')		Trench #2 (1.5-2')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-07-17 00:00		Jul-07-17 00:00		Jul-07-17 00:00		Jul-07-17 00:00		Jul-07-17 00:00		Jul-07-17 00:00	
BTEX by EPA 8021B	***Extracted:***	Jul-10-17 15:00		Jul-10-17 18:00		Jul-10-17 15:00		Jul-10-17 15:00		Jul-10-17 18:00		Jul-10-17 15:00	
	Analyzed:	Jul-10-17 21:51		Jul-11-17 10:09		Jul-10-17 22:24		Jul-10-17 22:40		Jul-11-17 13:24		Jul-10-17 23:12	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		ND	0.00202	ND	0.00199	ND	0.00199	ND	0.00202	ND	0.0200	ND	0.00199
Toluene		ND	0.00202	ND	0.00199	0.00222	0.00199	0.0408	0.00202	0.267	0.0200	0.0401	0.00199
Ethylbenzene		ND	0.00202	ND	0.00199	ND	0.00199	0.0805	0.00202	0.670	0.0200	ND	0.00199
m,p-Xylenes		ND	0.00403	0.0466	0.00398	0.0428	0.00398	0.713	0.00404	7.79	0.0401	13.2 D	0.0797
o-Xylene		ND	0.00202	0.0347	0.00199	0.0355	0.00199	0.203	0.00202	2.66	0.0200	6.14 D	0.0398
Total Xylenes		ND	0.00202	0.0813	0.00199	0.0783	0.00199	0.916	0.00202	10.5	0.0200	19.3	0.0398
Total BTEX		ND	0.00202	0.0813	0.00199	0.0805	0.00199	1.04	0.00202	11.4	0.0200	19.4	0.00199
Inorganic Anions by EPA 300/300.1	***Extracted:***	Jul-14-17 08:50		Jul-14-17 08:50		Jul-14-17 08:50							
	Analyzed:	Jul-14-17 11:31		Jul-14-17 11:39		Jul-14-17 11:46							
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL						
Chloride		7.57	4.98	8.27	4.99	13.3	4.97						
TPH By SW8015 Mod	***Extracted:***	Jul-10-17 15:00		Jul-10-17 15:00		Jul-10-17 15:00							
	Analyzed:	Jul-10-17 18:58		Jul-10-17 19:18		Jul-10-17 19:38							
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL						
Gasoline Range Hydrocarbons (GRO)		ND	15.0	292	15.0	62.5	15.0						
Diesel Range Organics (DRO)		155	15.0	1260	15.0	260	15.0						
Oil Range Hydrocarbons (ORO)		ND	15.0	120	15.0	ND	15.0						
Total TPH		155	15.0	1670	15.0	323	15.0						

Certificate of Analysis Summary 557116

Tetra Tech- Midland, Midland, TX

Project Name: COG- Pintail 3 Federal #1 H

Project Id: 212C-MD-00863
Contact: Ike Tavarez
Project Location: Lea County, NM

Date Received in Lab: Mon Jul-10-17 08:16 am
Report Date: 14-JUL-17
Project Manager: Kelsey Brooks

Analysis Requested											
	Lab Id:	557116-007		557116-008		557116-010		557116-011		557116-012	
	Field Id:	Trench #3 (0-1')		Trench #3 (2')		Trench #4 (0-1')		Trench #5 (0-1')		Trench #5 (2')	
	Depth:										
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-07-17 00:00		Jul-07-17 00:00		Jul-07-17 00:00		Jul-07-17 00:00		Jul-07-17 00:00	
BTEX by EPA 8021B	***Extracted:***	Jul-10-17 18:00		Jul-10-17 18:00		Jul-13-17 17:30		Jul-10-17 18:00		Jul-10-17 18:00	
	Analyzed:	Jul-11-17 08:00		Jul-11-17 12:19		Jul-14-17 08:31		Jul-11-17 08:17		Jul-11-17 08:33	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		ND	0.00202	ND	0.00201	ND	0.00200	0.0302	0.00200	0.0401	0.00201
Toluene		ND	0.00202	0.0422	0.00201	ND	0.00200	0.286	0.00200	3.88 D	0.0994
Ethylbenzene		ND	0.00202	0.0958	0.00201	ND	0.00200	0.0189	0.00200	0.147	0.00201
m,p-Xylenes		0.0201	0.00403	0.745	0.00402	ND	0.00399	0.618	0.00399	28.6 D	0.199
o-Xylene		0.0228	0.00202	0.297	0.00201	ND	0.00200	0.353	0.00200	13.7 D	0.0994
Total Xylenes		0.0429	0.00202	1.04	0.00201	ND	0.00200	0.971	0.00200	42.3	0.0994
Total BTEX		0.0429	0.00202	1.18	0.00201	ND	0.00200	1.31	0.00200	46.4	0.00201
TPH By SW8015 Mod	***Extracted:***	Jul-10-17 15:00		Jul-10-17 15:00		Jul-10-17 15:00		Jul-10-17 15:00		Jul-10-17 15:00	
	Analyzed:	Jul-10-17 19:58		Jul-10-17 20:19		Jul-10-17 20:39		Jul-10-17 21:41		Jul-10-17 22:01	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		343	15.0	1060	15.0	ND	15.0	864	15.0	1450	15.0
Diesel Range Organics (DRO)		3580	15.0	3450	15.0	ND	15.0	4220	15.0	1960	15.0
Oil Range Hydrocarbons (ORO)		340	15.0	301	15.0	ND	15.0	424	15.0	152	15.0
Total TPH		4260	15.0	4810	15.0	ND	15.0	5510	15.0	3560	15.0

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

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

	Phone	Fax
4147 Greenbriar Dr, Stafford, TX 77477	(281) 240-4200	(281) 240-4280
9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
1211 W Florida Ave, Midland, TX 79701	(432) 563-1800	(432) 563-1713
2525 W. Huntington Dr. - Suite 102, Tempe AZ 85282	(602) 437-0330	

Form 2 - Surrogate Recoveries

Project Name: COG- Pintail 3 Federal #1 H

Work Orders : 557116,

Project ID: 212C-MD-00863

Lab Batch #: 3021907 **Sample:** 557116-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/10/17 18:58

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	99.8	109	70-135	
o-Terphenyl	55.4	49.9	111	70-135	

Lab Batch #: 3021907 **Sample:** 557116-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/10/17 19:18

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	110	99.9	110	70-135	
o-Terphenyl	51.3	50.0	103	70-135	

Lab Batch #: 3021907 **Sample:** 557116-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/10/17 19:38

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	99.8	109	70-135	
o-Terphenyl	56.4	49.9	113	70-135	

Lab Batch #: 3021907 **Sample:** 557116-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/10/17 19:58

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	125	99.9	125	70-135	
o-Terphenyl	46.4	50.0	93	70-135	

Lab Batch #: 3021907 **Sample:** 557116-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/10/17 20:19

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	99.7	109	70-135	
o-Terphenyl	43.3	49.9	87	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: COG- Pintail 3 Federal #1 H

Work Orders : 557116,

Project ID: 212C-MD-00863

Lab Batch #: 3021907 **Sample:** 557116-010 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/10/17 20:39

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	99.7	109	70-135	
o-Terphenyl	55.6	49.9	111	70-135	

Lab Batch #: 3021907 **Sample:** 557116-011 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/10/17 21:41

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	99.8	111	70-135	
o-Terphenyl	41.2	49.9	83	70-135	

Lab Batch #: 3021934 **Sample:** 557116-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/10/17 21:51

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0299	0.0300	100	80-120	
4-Bromofluorobenzene	0.0285	0.0300	95	80-120	

Lab Batch #: 3021907 **Sample:** 557116-012 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/10/17 22:01

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	99.9	103	70-135	
o-Terphenyl	41.3	50.0	83	70-135	

Lab Batch #: 3021934 **Sample:** 557116-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/10/17 22:24

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0326	0.0300	109	80-120	
4-Bromofluorobenzene	0.0358	0.0300	119	80-120	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: COG- Pintail 3 Federal #1 H

Work Orders : 557116,

Project ID: 212C-MD-00863

Lab Batch #: 3021934 **Sample:** 557116-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/10/17 22:40

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0254	0.0300	85	80-120	
4-Bromofluorobenzene	0.0300	0.0300	100	80-120	

Lab Batch #: 3021965 **Sample:** 557116-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/10/17 23:12

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0303	0.0300	101	80-120	
4-Bromofluorobenzene	0.0266	0.0300	89	80-120	

Lab Batch #: 3021965 **Sample:** 557116-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/11/17 08:00

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0244	0.0300	81	80-120	
4-Bromofluorobenzene	0.0337	0.0300	112	80-120	

Lab Batch #: 3021965 **Sample:** 557116-011 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/11/17 08:17

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0270	0.0300	90	80-120	
4-Bromofluorobenzene	0.0265	0.0300	88	80-120	

Lab Batch #: 3021965 **Sample:** 557116-012 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/11/17 08:33

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0261	0.0300	87	80-120	
4-Bromofluorobenzene	0.0240	0.0300	80	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: COG- Pintail 3 Federal #1 H

Work Orders : 557116,

Project ID: 212C-MD-00863

Lab Batch #: 3021965 **Sample:** 557116-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/11/17 10:09

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0275	0.0300	92	80-120	
4-Bromofluorobenzene	0.0335	0.0300	112	80-120	

Lab Batch #: 3021965 **Sample:** 557116-006 / DL **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/11/17 10:41

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0252	0.0300	84	80-120	
4-Bromofluorobenzene	0.0257	0.0300	86	80-120	

Lab Batch #: 3021965 **Sample:** 557116-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/11/17 12:19

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0246	0.0300	82	80-120	
4-Bromofluorobenzene	0.0291	0.0300	97	80-120	

Lab Batch #: 3021965 **Sample:** 557116-012 / DL **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/11/17 13:08

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0277	0.0300	92	80-120	
4-Bromofluorobenzene	0.0358	0.0300	119	80-120	

Lab Batch #: 3021965 **Sample:** 557116-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/11/17 13:24

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0253	0.0300	84	80-120	
4-Bromofluorobenzene	0.0319	0.0300	106	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: COG- Pintail 3 Federal #1 H

Work Orders : 557116,

Project ID: 212C-MD-00863

Lab Batch #: 3022274 **Sample:** 557116-010 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/14/17 08:31

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0257	0.0300	86	80-120	
4-Bromofluorobenzene	0.0240	0.0300	80	80-120	

Lab Batch #: 3021907 **Sample:** 727439-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/10/17 17:56

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	112	100	112	70-135	
o-Terphenyl	59.7	50.0	119	70-135	

Lab Batch #: 3021934 **Sample:** 727453-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/10/17 18:04

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0264	0.0300	88	80-120	
4-Bromofluorobenzene	0.0256	0.0300	85	80-120	

Lab Batch #: 3021965 **Sample:** 727471-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/11/17 07:44

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0268	0.0300	89	80-120	
4-Bromofluorobenzene	0.0288	0.0300	96	80-120	

Lab Batch #: 3022274 **Sample:** 727633-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/13/17 19:26

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0263	0.0300	88	80-120	
4-Bromofluorobenzene	0.0275	0.0300	92	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: COG- Pintail 3 Federal #1 H

Work Orders : 557116,

Project ID: 212C-MD-00863

Lab Batch #: 3021934 **Sample:** 727453-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/10/17 16:43

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0282	0.0300	94	80-120	
4-Bromofluorobenzene	0.0268	0.0300	89	80-120	

Lab Batch #: 3021907 **Sample:** 727439-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/10/17 18:16

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	114	100	114	70-135	
o-Terphenyl	56.0	50.0	112	70-135	

Lab Batch #: 3021965 **Sample:** 727471-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/11/17 01:06

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0252	0.0300	84	80-120	
4-Bromofluorobenzene	0.0279	0.0300	93	80-120	

Lab Batch #: 3022274 **Sample:** 727633-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/13/17 18:04

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0298	0.0300	99	80-120	
4-Bromofluorobenzene	0.0254	0.0300	85	80-120	

Lab Batch #: 3021934 **Sample:** 727453-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/10/17 16:59

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0262	0.0300	87	80-120	
4-Bromofluorobenzene	0.0270	0.0300	90	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Version: 1.%

Form 2 - Surrogate Recoveries

Project Name: COG- Pintail 3 Federal #1 H

Work Orders : 557116, **Project ID:** 212C-MD-00863

Lab Batch #: 3021907 **Sample:** 727439-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/10/17 18:37

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	127	100	127	70-135	
o-Terphenyl	65.0	50.0	130	70-135	

Lab Batch #: 3021965 **Sample:** 727471-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/11/17 01:22

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0319	0.0300	106	80-120	
4-Bromofluorobenzene	0.0291	0.0300	97	80-120	

Lab Batch #: 3022274 **Sample:** 727633-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/13/17 18:21

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0317	0.0300	106	80-120	
4-Bromofluorobenzene	0.0325	0.0300	108	80-120	

Lab Batch #: 3021934 **Sample:** 556932-002 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/10/17 17:16

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0328	0.0300	109	80-120	
4-Bromofluorobenzene	0.0358	0.0300	119	80-120	

Lab Batch #: 3021907 **Sample:** 557116-010 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/10/17 21:00

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	106	99.9	106	70-135	
o-Terphenyl	51.3	50.0	103	70-135	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: COG- Pintail 3 Federal #1 H

Work Orders : 557116, **Project ID:** 212C-MD-00863

Lab Batch #: 3021965 **Sample:** 556811-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/11/17 11:14

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0264	0.0300	88	80-120	
4-Bromofluorobenzene	0.0294	0.0300	98	80-120	

Lab Batch #: 3022274 **Sample:** 557431-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/13/17 18:37

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0338	0.0300	113	80-120	
4-Bromofluorobenzene	0.0355	0.0300	118	80-120	

Lab Batch #: 3021934 **Sample:** 556932-002 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/10/17 17:32

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0333	0.0300	111	80-120	

Lab Batch #: 3021907 **Sample:** 557116-010 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/10/17 21:20

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	108	99.8	108	70-135	
o-Terphenyl	51.2	49.9	103	70-135	

Lab Batch #: 3021965 **Sample:** 556811-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/11/17 14:45

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0294	0.0300	98	80-120	
4-Bromofluorobenzene	0.0308	0.0300	103	80-120	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: COG- Pintail 3 Federal #1 H

Work Orders : 557116, **Project ID:** 212C-MD-00863

Lab Batch #: 3022274 **Sample:** 557431-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/13/17 18:53

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0346	0.0300	115	80-120	
4-Bromofluorobenzene	0.0347	0.0300	116	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

BS / BSD Recoveries

Project Name: COG- Pintail 3 Federal #1 H

Work Order #: 557116 **Project ID:** 212C-MD-00863

Analyst: ALJ **Date Prepared:** 07/10/2017 **Date Analyzed:** 07/10/2017

Lab Batch ID: 3021934 **Sample:** 727453-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00200	0.0998	0.121	121	0.100	0.113	113	7	70-130	35	
Toluene	<0.00200	0.0998	0.117	117	0.100	0.105	105	11	70-130	35	
Ethylbenzene	<0.00200	0.0998	0.120	120	0.100	0.109	109	10	71-129	35	
m,p-Xylenes	<0.00399	0.200	0.210	105	0.201	0.191	95	9	70-135	35	
o-Xylene	<0.00200	0.0998	0.117	117	0.100	0.102	102	14	71-133	35	

Analyst: ALJ **Date Prepared:** 07/10/2017 **Date Analyzed:** 07/11/2017

Lab Batch ID: 3021965 **Sample:** 727471-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00199	0.0994	0.0970	98	0.100	0.123	123	24	70-130	35	
Toluene	<0.00199	0.0994	0.0865	87	0.100	0.115	115	28	70-130	35	
Ethylbenzene	<0.00199	0.0994	0.0941	95	0.100	0.121	121	25	71-129	35	
m,p-Xylenes	<0.00398	0.199	0.166	83	0.200	0.210	105	23	70-135	35	
o-Xylene	<0.00199	0.0994	0.0979	98	0.100	0.111	111	13	71-133	35	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Version: 1.%

BS / BSD Recoveries

Project Name: COG- Pintail 3 Federal #1 H

Work Order #: 557116 **Project ID:** 212C-MD-00863

Analyst: JUM **Date Prepared:** 07/13/2017 **Date Analyzed:** 07/13/2017

Lab Batch ID: 3022274 **Sample:** 727633-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00198	0.0992	0.102	103	0.0998	0.122	122	18	70-130	35	
Toluene	<0.00198	0.0992	0.0949	96	0.0998	0.114	114	18	70-130	35	
Ethylbenzene	<0.00198	0.0992	0.0907	91	0.0998	0.117	117	25	71-129	35	
m,p-Xylenes	<0.00397	0.198	0.165	83	0.200	0.209	105	24	70-135	35	
o-Xylene	<0.00198	0.0992	0.0887	89	0.0998	0.115	115	26	71-133	35	

Analyst: MGO **Date Prepared:** 07/14/2017 **Date Analyzed:** 07/14/2017

Lab Batch ID: 3022280 **Sample:** 727631-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	244	98	250	243	97	0	90-110	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Version: 1.%

BS / BSD Recoveries

Project Name: COG- Pintail 3 Federal #1 H

Work Order #: 557116 **Project ID:** 212C-MD-00863

Analyst: ARM **Date Prepared:** 07/10/2017 **Date Analyzed:** 07/10/2017

Lab Batch ID: 3021907 **Sample:** 727439-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	1010	101	1000	1090	109	8	70-135	35	
Diesel Range Organics (DRO)	<15.0	1000	970	97	1000	1130	113	15	70-135	35	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Version: 1.%

Form 3 - MS / MSD Recoveries

Project Name: COG- Pintail 3 Federal #1 H

Work Order # : 557116 **Project ID:** 212C-MD-00863

Lab Batch ID: 3021934 **QC- Sample ID:** 556932-002 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 07/10/2017 **Date Prepared:** 07/10/2017 **Analyst:** ALJ

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00199	0.0996	0.0935	94	0.0998	0.102	102	9	70-130	35	
Toluene	<0.00199	0.0996	0.0778	78	0.0998	0.0893	89	14	70-130	35	
Ethylbenzene	<0.00199	0.0996	0.0848	85	0.0998	0.0940	94	10	71-129	35	
m,p-Xylenes	<0.00398	0.199	0.142	71	0.200	0.162	81	13	70-135	35	
o-Xylene	<0.00199	0.0996	0.0823	83	0.0998	0.0874	88	6	71-133	35	

Lab Batch ID: 3021965 **QC- Sample ID:** 556811-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 07/11/2017 **Date Prepared:** 07/10/2017 **Analyst:** ALJ

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00200	0.100	0.109	109	0.0998	0.103	103	6	70-130	35	
Toluene	<0.00200	0.100	0.0984	98	0.0998	0.0907	91	8	70-130	35	
Ethylbenzene	<0.00200	0.100	0.102	102	0.0998	0.0879	88	15	71-129	35	
m,p-Xylenes	0.0181	0.200	0.182	82	0.200	0.185	83	2	70-135	35	
o-Xylene	<0.00200	0.100	0.101	101	0.0998	0.0933	93	8	71-133	35	

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

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

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

Form 3 - MS / MSD Recoveries

Project Name: COG- Pintail 3 Federal #1 H

Work Order # : 557116 **Project ID:** 212C-MD-00863

Lab Batch ID: 3022274 **QC- Sample ID:** 557431-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 07/13/2017 **Date Prepared:** 07/13/2017 **Analyst:** JUM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00198	0.0992	0.0893	90	0.0998	0.0957	96	7	70-130	35	
Toluene	<0.00198	0.0992	0.0971	98	0.0998	0.0842	84	14	70-130	35	
Ethylbenzene	<0.00198	0.0992	0.0816	82	0.0998	0.0822	82	1	71-129	35	
m,p-Xylenes	0.00444	0.198	0.164	81	0.200	0.163	79	1	70-135	35	
o-Xylene	0.00391	0.0992	0.103	100	0.0998	0.0840	80	20	71-133	35	

Lab Batch ID: 3022280 **QC- Sample ID:** 557116-003 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 07/14/2017 **Date Prepared:** 07/14/2017 **Analyst:** MGO

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	13.3	250	264	100	250	263	100	0	90-110	20	

Lab Batch ID: 3022280 **QC- Sample ID:** 557358-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 07/14/2017 **Date Prepared:** 07/14/2017 **Analyst:** MGO

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	347	250	606	104	250	603	102	0	90-110	20	

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

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

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

Form 3 - MS / MSD Recoveries

Project Name: COG- Pintail 3 Federal #1 H

Work Order # : 557116 **Project ID:** 212C-MD-00863

Lab Batch ID: 3021907 **QC- Sample ID:** 557116-010 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 07/10/2017 **Date Prepared:** 07/10/2017 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	999	1000	100	998	1020	102	2	70-135	35	
Diesel Range Organics (DRO)	<15.0	999	999	100	998	1010	101	1	70-135	35	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

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

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

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

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

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

4000 N. Big Spring Street, Ste
401 Midland,Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

557116

Client Name: COG	**Site Manager:** Ike Tavarez
Project Name: Pintail 3 Federal #1H	
Project Location: (county, state) Lea County, New Mexico	**Project #:** 212C-MD-00863
Invoice to: Tetra Tech	
Receiving Laboratory: Xenco Midland Tx	**Sampler Signature:** Mike Cannon
Comments:	

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2017 DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	MATRIX	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None	PRESERVATIVE METHOD	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B / BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance				Hold
	Trench # 1 (0-1')	7/7/2017			X				X			1	N	X		X												X							
	Trench # 1 (2')	7/7/2017			X				X			1	N	X		X												X							
	Trench #1 (4')	7/7/2017			X				X			1	N	X		X												X							
	Trench #2 (0-1')	7/7/2017			X				X			1	N	X																					
	Trench #2 (1-1.5')	7/7/2017			X				X			1	N	X																					
	Trench #2 (1.5-2')	7/7/2017			X				X			1	N	X																					
	Trench #3 (0-1')	7/7/2017			X				X			1	N	X		X																			
	Trench #3 (2')	7/7/2017			X				X			1	N	X		X																			
	Trench #3 (3.5')	7/7/2017			X				X			1	N																						X
	Trench #4 (0-1')	7/7/2017			X				X			1	N	X		X																			

Relinquished by: Mike Cannon	Date: 7-7-17	Time: 1559	Received by: Shawne Smith
Relinquished by:	Date:	Time:	Received by:
Relinquished by:	Date:	Time:	Received by:

Date: 7-7-17 Time: 15:59

LAB USE ONLY

Sample Temperature

REMARKS:

STANDARD

☐ RUSH: Same Day 24 hr 48 hr 72 hr

☐ Rush Charges Authorized

☐ Special Report Limits or TRRP Report

FEDEX UPS Tracking #:

ORIGINAL COPY

Temp: 9.0 IR ID:R-8

CF:(0-6: -0.2°C)

(6-23: +0.2°C)

Corrected Temp: 7.0

Final 1.000

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

4000 N. Big Spring Street, Ste
401 Midland,Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

557116

Client Name: COG	**Site Manager:** Ike Tavarez
Project Name: Pintail 3 Federal #1H	
Project Location: (county, state) Lea County, New Mexico	**Project #:** 212C-MD-00863
Invoice to: Tetra Tech	
Receiving Laboratory: Xenco Midland Tx	**Sampler Signature:** Mike Camma
Comments:	

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2017 DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	MATRIX	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None	PRESERVATIVE METHOD	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance					Hold
	Trench #5 (0-1')	7/7/2017			X				X			1	N	X		X																				
	Trench #5 (2')	7/7/2017			X				X			1	N	X		X																				
	Trench #5 (3.5')	7/7/2017			X				X			1	N																							X

Final 1.000

Page 24 of 25

Relinquished by: Mike Camma	Date: 7-7-17	Time: 1559
Relinquished by:	Date:	Time:
Relinquished by:	Date:	Time:

Received by:	Date:	Time:
Received by:	Date: 7-7-17	Time: 15:59
Received by:	Date:	Time:

LAB USE ONLY

Sample Temperature

REMARKS:

STANDARD

☐ RUSH: Same Day 24 hr 48 hr 72 hr

☐ Rush Charges Authorized

☐ Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

ORIGINAL COPY

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech- Midland

Date/ Time Received: 07/10/2017 08:16:58 AM

Work Order #: 557116

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)?	7
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seal present on shipping container/ cooler?	**No**
#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)?	**No**
#21 VOC samples have zero headspace?	**N/A**

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

Analyst: SS

PH Device/Lot#:

Checklist completed by: Shawnee Smith Date: 07/10/2017

Shawnee Smith

Checklist reviewed by: Mike Kimmel Date: 07/10/2017

Mike Kimmel

Certificate of Analysis Summary 544228

COG Operating LLC, Artesia, NM

Project Name: Pintail 3 Federal #001H

Project Id:

Contact: Dakota Neel

Project Location: 32.0657692,-103.6615829

Date Received in Lab: Mon Jan-16-17 12:00 pm

Report Date: 23-JAN-17

Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	544228-001		544228-002		544228-003		544228-004		544228-005		544228-006	
	Field Id:	T1 - 1'		T1 - 2'		T2 - 1'		T2 - 2'		T2 - 3'		T2 - 4'	
	Depth:	1- ft		2- ft		1- ft		2- ft		3- ft		4- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jan-10-17 10:00		Jan-10-17 10:00		Jan-10-17 10:00		Jan-10-17 10:00		Jan-10-17 10:00		Jan-10-17 10:00	
BTEX by EPA 8021B	***Extracted:***	Jan-17-17 10:00		Jan-18-17 09:00		Jan-17-17 12:00		Jan-17-17 12:00		Jan-17-17 12:00		Jan-17-17 12:00	
	Analyzed:	Jan-17-17 12:56		Jan-18-17 13:17		Jan-17-17 22:50		Jan-17-17 22:00		Jan-17-17 22:17		Jan-17-17 20:55	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00151	0.00151	1.49	0.376	<0.0752	0.0752	<0.149	0.149	<0.149	0.149	<0.00151	0.00151
Toluene		0.00701	0.00201	43.0	0.501	11.7	0.100	4.93	0.199	5.70	0.198	0.00360	0.00201
Ethylbenzene		0.00420	0.00201	10.4	0.501	5.54	0.100	4.04	0.199	2.60	0.198	<0.00201	0.00201
m_p-Xylenes		0.0579	0.00201	62.9	0.501	26.8	0.100	18.0	0.199	11.5	0.198	0.00542	0.00201
o-Xylene		0.128	0.00302	19.0	0.752	7.56	0.150	4.89	0.298	3.28	0.297	0.00339	0.00302
Total Xylenes		0.186	0.00201	81.9	0.501	34.4	0.100	22.9	0.199	14.8	0.198	0.00881	0.00201
Total BTEX		0.197	0.00151	137	0.376	51.6	0.0752	31.9	0.149	23.1	0.149	0.0124	0.00151
Inorganic Anions by EPA 300/300.1	***Extracted:***	Jan-20-17 09:00		Jan-20-17 09:00		Jan-20-17 10:00		Jan-20-17 10:00		Jan-20-17 10:00		Jan-20-17 10:00	
	Analyzed:	Jan-20-17 14:14		Jan-20-17 14:21		Jan-20-17 15:24		Jan-20-17 16:07		Jan-20-17 16:14		Jan-20-17 16:21	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		62.7	5.00	21.0	5.00	28.0	5.00	11.5	5.00	11.2	5.00	22.9	5.00
TPH By SW8015 Mod	***Extracted:***	Jan-17-17 16:00		Jan-17-17 16:00		Jan-17-17 16:00		Jan-17-17 16:00		Jan-17-17 16:00		Jan-17-17 16:00	
	Analyzed:	Jan-17-17 20:20		Jan-17-17 20:43		Jan-17-17 21:08		Jan-17-17 21:31		Jan-17-17 21:54		Jan-17-17 22:21	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C10 Gasoline Range Hydrocarbons		64.1	15.0	683	15.0	1030	15.0	724	15.0	303	15.0	24.9	15.0
C10-C28 Diesel Range Organics		1200	15.0	1080	15.0	3040	15.0	2570	15.0	874	15.0	223	15.0
Total TPH		1260	15.0	1760	15.0	4070	15.0	3290	15.0	1180	15.0	248	15.0

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 544228

COG Operating LLC, Artesia, NM

Project Name: Pintail 3 Federal #001H

Project Id:

Contact: Dakota Neel

Project Location: 32.0657692,-103.6615829

Date Received in Lab: Mon Jan-16-17 12:00 pm

Report Date: 23-JAN-17

Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	544228-007		544228-008		544228-009		544228-010		544228-011		544228-012	
	Field Id:	T2 - 5'		T2 - 6'		T2 - 7'		T3 - 1'		T3 - 2'		T3 - 3'	
	Depth:	5- ft		6- ft		7- ft		1- ft		2- ft		3- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jan-10-17 10:00		Jan-10-17 10:00		Jan-10-17 10:00		Jan-10-17 10:30		Jan-10-17 10:30		Jan-10-17 10:30	
BTEX by EPA 8021B	***Extracted:***	Jan-17-17 12:00		Jan-18-17 09:00		Jan-17-17 12:00		Jan-18-17 09:00		Jan-18-17 09:00		Jan-18-17 09:00	
	Analyzed:	Jan-17-17 22:33		Jan-18-17 17:38		Jan-17-17 15:07		Jan-18-17 13:00		Jan-18-17 13:32		Jan-18-17 16:15	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.149	0.149	<0.00291	0.00291	<0.00149	0.00149	8.85	0.744	<0.297	0.297	<0.00301	0.00301
Toluene		0.766	0.198	<0.00388	0.00388	0.0158	0.00199	94.0	0.992	11.4	0.396	<0.00402	0.00402
Ethylbenzene		1.32	0.198	<0.00388	0.00388	0.0557	0.00199	21.0	0.992	3.98	0.396	<0.00402	0.00402
m_p-Xylenes		6.10	0.198	<0.00388	0.00388	0.209	0.00199	118	0.992	25.5	0.396	<0.00402	0.00402
o-Xylene		2.11	0.297	<0.00581	0.00581	0.126	0.00298	33.6	1.49	8.05	0.594	<0.00602	0.00602
Total Xylenes		8.21	0.198	<0.00388	0.00388	0.335	0.00199	152	0.992	33.6	0.396	<0.00402	0.00402
Total BTEX		10.3	0.149	<0.00291	0.00291	0.407	0.00149	275	0.744	48.9	0.297	<0.00301	0.00301
Inorganic Anions by EPA 300/300.1	***Extracted:***	Jan-20-17 10:00		Jan-20-17 10:00		Jan-20-17 10:00		Jan-20-17 10:00		Jan-20-17 10:00		Jan-20-17 10:00	
	Analyzed:	Jan-20-17 16:28		Jan-20-17 16:35		Jan-20-17 16:42		Jan-20-17 16:49		Jan-20-17 16:56		Jan-20-17 17:03	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		26.5	5.00	8.00	5.00	13.9	5.00	17.1	5.00	12.9	5.00	5.66	5.00
TPH By SW8015 Mod	***Extracted:***	Jan-17-17 16:00		Jan-17-17 16:00		Jan-17-17 16:00		Jan-17-17 16:00		Jan-17-17 16:00		Jan-17-17 16:00	
	Analyzed:	Jan-17-17 22:44		Jan-17-17 23:09		Jan-17-17 23:33		Jan-18-17 08:18		Jan-18-17 01:11		Jan-18-17 01:35	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C10 Gasoline Range Hydrocarbons		249	15.0	<15.0	15.0	46.0	15.0	4670	74.9	435	15.0	<15.0	15.0
C10-C28 Diesel Range Organics		1040	15.0	68.0	15.0	250	15.0	7950	74.9	1190	15.0	84.0	15.0
Total TPH		1290	15.0	68.0	15.0	296	15.0	12600	74.9	1630	15.0	84.0	15.0

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 544228

COG Operating LLC, Artesia, NM

Project Name: Pintail 3 Federal #001H

Project Id:

Contact: Dakota Neel

Project Location: 32.0657692,-103.6615829

Date Received in Lab: Mon Jan-16-17 12:00 pm

Report Date: 23-JAN-17

Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	544228-013		544228-014		544228-015		544228-016		544228-017		544228-018	
	Field Id:	T3 - 3.5'		T4 - 1'		T4 - 2'		T4 - 3'		T4 - 4'		T4 - 6'	
	Depth:	3.5- ft		1- ft		2- ft		3- ft		4- ft		6- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jan-10-17 10:30		Jan-10-17 10:30		Jan-10-17 10:30		Jan-10-17 10:30		Jan-10-17 10:30		Jan-10-17 10:30	
BTEX by EPA 8021B	***Extracted:***	Jan-19-17 13:00		Jan-17-17 12:00		Jan-18-17 09:00		Jan-18-17 09:00		Jan-18-17 09:00		Jan-18-17 09:00	
	Analyzed:	Jan-19-17 17:44		Jan-18-17 00:42		Jan-18-17 16:57		Jan-18-17 11:22		Jan-18-17 18:11		Jan-18-17 18:27	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00292	0.00292	<0.297	0.297	<0.00291	0.00291	<0.00285	0.00285	<0.00287	0.00287	<0.00290	0.00290
Toluene		<0.00389	0.00389	29.2	0.396	<0.00388	0.00388	0.256	0.00380	<0.00383	0.00383	<0.00386	0.00386
Ethylbenzene		<0.00389	0.00389	17.1	0.396	<0.00388	0.00388	0.263	0.00380	<0.00383	0.00383	<0.00386	0.00386
m_p-Xylenes		<0.00389	0.00389	65.5	0.396	<0.00388	0.00388	1.38	0.00380	<0.00383	0.00383	<0.00386	0.00386
o-Xylene		<0.00584	0.00584	17.1	0.594	<0.00581	0.00581	0.502	0.00570	<0.00575	0.00575	<0.00579	0.00579
Total Xylenes		<0.00389	0.00389	82.6	0.396	<0.00388	0.00388	1.88	0.00380	<0.00383	0.00383	<0.00386	0.00386
Total BTEX		<0.00292	0.00292	129	0.297	<0.00291	0.00291	2.40	0.00285	<0.00287	0.00287	<0.00290	0.00290
Inorganic Anions by EPA 300/300.1	***Extracted:***	Jan-20-17 10:00		Jan-20-17 10:00		Jan-20-17 10:00		Jan-20-17 10:00		Jan-20-17 10:00		Jan-20-17 10:00	
	Analyzed:	Jan-20-17 17:38		Jan-20-17 17:45		Jan-20-17 17:52		Jan-20-17 17:59		Jan-20-17 18:06		Jan-20-17 18:13	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		12.2	5.00	18.7	5.00	6.35	5.00	10.2	5.00	7.58	5.00	10.1	5.00
TPH By SW8015 Mod	***Extracted:***	Jan-17-17 16:00		Jan-17-17 16:00		Jan-17-17 16:00		Jan-17-17 16:00		Jan-17-17 16:00		Jan-17-17 16:00	
	Analyzed:	Jan-18-17 02:01		Jan-18-17 02:24		Jan-18-17 02:48		Jan-18-17 03:14		Jan-18-17 03:37		Jan-18-17 04:03	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C10 Gasoline Range Hydrocarbons		<15.0	15.0	2000	15.0	<15.0	15.0	88.4	15.0	<15.0	15.0	<15.0	15.0
C10-C28 Diesel Range Organics		<15.0	15.0	4530	15.0	<15.0	15.0	434	15.0	<15.0	15.0	21.5	15.0
Total TPH		<15.0	15.0	6530	15.0	<15.0	15.0	522	15.0	<15.0	15.0	21.5	15.0

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 544228

COG Operating LLC, Artesia, NM

Project Name: Pintail 3 Federal #001H

Project Id:

Contact: Dakota Neel

Project Location: 32.0657692,-103.6615829

Date Received in Lab: Mon Jan-16-17 12:00 pm

Report Date: 23-JAN-17

Project Manager: Kelsey Brooks

Analysis Requested									
	Lab Id:	544228-019		544228-020		544228-021			
	Field Id:	T5 - 1'		T5 - 2'		T5 - 3'			
	Depth:	1- ft		2- ft		3- ft			
	Matrix:	SOIL		SOIL		SOIL			
	Sampled:	Jan-10-17 11:00		Jan-10-17 11:00		Jan-10-17 11:00			
BTEX by EPA 8021B	***Extracted:***	Jan-17-17 12:00		Jan-17-17 12:00		Jan-18-17 09:00			
	Analyzed:	Jan-17-17 21:44		Jan-17-17 23:22		Jan-18-17 11:55			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Benzene		0.00240	0.00149	<0.299	0.299	<0.00304	0.00304		
Toluene		0.00989	0.00199	36.3	0.399	0.00915	0.00405		
Ethylbenzene		0.00391	0.00199	14.7	0.399	0.0199	0.00405		
m_p-Xylenes		0.0354	0.00199	61.6	0.399	0.211	0.00405		
o-Xylene		<0.00298	0.00298	17.2	0.599	0.0990	0.00607		
Total Xylenes		0.0354	0.00199	78.8	0.399	0.310	0.00405		
Total BTEX		0.0516	0.00149	130	0.299	0.339	0.00304		
Inorganic Anions by EPA 300/300.1	***Extracted:***	Jan-20-17 10:00		Jan-20-17 10:00		Jan-20-17 10:00			
	Analyzed:	Jan-20-17 18:21		Jan-20-17 18:28		Jan-20-17 18:35			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Chloride		9.79	5.00	13.6	5.00	23.3	5.00		
TPH By SW8015 Mod	***Extracted:***	Jan-17-17 16:00		Jan-17-17 16:00		Jan-20-17 15:00			
	Analyzed:	Jan-18-17 05:16		Jan-18-17 08:42		Jan-20-17 19:03			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
C6-C10 Gasoline Range Hydrocarbons		<15.0	15.0	2580	74.8	59.0	15.0		
C10-C28 Diesel Range Organics		166	15.0	8380	74.8	436	15.0		
Total TPH		166	15.0	11000	74.8	495	15.0		

Kelsey Brooks
Project Manager

Analytical Report 544228

for

COG Operating LLC

Project Manager: Dakota Neel

Pintail 3 Federal #001H

23-JAN-17

Collected By: Dakota Neel

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)

23-JAN-17

Project Manager: **Dakota Neel**
COG Operating LLC
2407 Pecos Avenue
Artesia, NM 88210

Reference: XENCO Report No(s): **544228**
Pintail 3 Federal #001H
Project Address: 32.0657692,-103.6615829

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) 544228. 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. 544228 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,

Kelsey Brooks
Project Manager

Sample Cross Reference 544228

COG Operating LLC, Artesia, NM

Pintail 3 Federal #001H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
T1 - 1'	S	01-10-17 10:00	1 ft	544228-001
T1 - 2'	S	01-10-17 10:00	2 ft	544228-002
T2 - 1'	S	01-10-17 10:00	1 ft	544228-003
T2 - 2'	S	01-10-17 10:00	2 ft	544228-004
T2 - 3'	S	01-10-17 10:00	3 ft	544228-005
T2 - 4'	S	01-10-17 10:00	4 ft	544228-006
T2 - 5'	S	01-10-17 10:00	5 ft	544228-007
T2 - 6'	S	01-10-17 10:00	6 ft	544228-008
T2 - 7'	S	01-10-17 10:00	7 ft	544228-009
T3 - 1'	S	01-10-17 10:30	1 ft	544228-010
T3 - 2'	S	01-10-17 10:30	2 ft	544228-011
T3 - 3'	S	01-10-17 10:30	3 ft	544228-012
T3 - 3.5'	S	01-10-17 10:30	3.5 ft	544228-013
T4 - 1'	S	01-10-17 10:30	1 ft	544228-014
T4 - 2'	S	01-10-17 10:30	2 ft	544228-015
T4 - 3'	S	01-10-17 10:30	3 ft	544228-016
T4 - 4'	S	01-10-17 10:30	4 ft	544228-017
T4 - 6'	S	01-10-17 10:30	6 ft	544228-018
T5 - 1'	S	01-10-17 11:00	1 ft	544228-019
T5 - 2'	S	01-10-17 11:00	2 ft	544228-020
T5 - 3'	S	01-10-17 11:00	3 ft	544228-021

Sample receipt non conformances and comments:

please email results to:
rgrubbs@concho.com rhaskell@concho.com alieb@concho.com

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3007823 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3007824 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3007993 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3008017 BTEX by EPA 8021B
Surrogate 4-Bromofluorobenzene recovered below QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 544228-002,544228-010,544228-016.
Surrogate 1,4-Difluorobenzene recovered below QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 544228-010,544228-002.
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.
Lab Sample ID 544228-016 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Ethylbenzene, Toluene recovered above QC limits in the Matrix Spike. m_p-Xylenes , o-Xylene recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 544228-002, -008, -010, -011, -012, -015, -016, -017, -018, -021.
The Laboratory Control Sample for Toluene, Ethylbenzene, m_p-Xylenes , o-Xylene is within laboratory Control Limits, therefore the data was accepted.

Certificate of Analytical Results 544228

COG Operating LLC, Artesia, NM

Pintail 3 Federal #001H

Sample Id:	**T1 - 1'**	Matrix:	Soil	Date Received:	01.16.17 12.00
Lab Sample Id:	544228-001	Date Collected:	01.10.17 10.00	Sample Depth:	1 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNR			% Moisture:	
Analyst:	MNR	Date Prep:	01.20.17 09.00	Basis:	Wet Weight
Seq Number:	3008054				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**62.7**	5.00	mg/kg	01.20.17 14.14		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.17.17 16.00	Basis:	Wet Weight
Seq Number:	3007833				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	**64.1**	15.0	mg/kg	01.17.17 20.20		1
C10-C28 Diesel Range Organics	C10C28DRO	**1200**	15.0	mg/kg	01.17.17 20.20		1
Total TPH	PHC635	**1260**	15.0	mg/kg	01.17.17 20.20		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	01.17.17 20.20	
o-Terphenyl	84-15-1	105	%	70-135	01.17.17 20.20	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	01.17.17 10.00	Basis:	Wet Weight
Seq Number:	3007823				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00151	0.00151	mg/kg	01.17.17 12.56	U	1
Toluene	108-88-3	**0.00701**	0.00201	mg/kg	01.17.17 12.56		1
Ethylbenzene	100-41-4	**0.00420**	0.00201	mg/kg	01.17.17 12.56		1
m_p-Xylenes	179601-23-1	**0.0579**	0.00201	mg/kg	01.17.17 12.56		1
o-Xylene	95-47-6	**0.128**	0.00302	mg/kg	01.17.17 12.56		1
Total Xylenes	1330-20-7	**0.186**	0.00201	mg/kg	01.17.17 12.56		1
Total BTEX		**0.197**	0.00151	mg/kg	01.17.17 12.56		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	115	%	80-120	01.17.17 12.56	
4-Bromofluorobenzene	460-00-4	93	%	80-120	01.17.17 12.56	

Certificate of Analytical Results 544228

COG Operating LLC, Artesia, NM

Pintail 3 Federal #001H

Sample Id:	**T1 - 2'**	Matrix:	Soil	Date Received:	01.16.17 12.00
Lab Sample Id:	544228-002	Date Collected:	01.10.17 10.00	Sample Depth:	2 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNR			% Moisture:	
Analyst:	MNR	Date Prep:	01.20.17 09.00	Basis:	Wet Weight
Seq Number:	3008054				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**21.0**	5.00	mg/kg	01.20.17 14.21		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.17.17 16.00	Basis:	Wet Weight
Seq Number:	3007833				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	**683**	15.0	mg/kg	01.17.17 20.43		1
C10-C28 Diesel Range Organics	C10C28DRO	**1080**	15.0	mg/kg	01.17.17 20.43		1
Total TPH	PHC635	**1760**	15.0	mg/kg	01.17.17 20.43		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	01.17.17 20.43	
o-Terphenyl	84-15-1	109	%	70-135	01.17.17 20.43	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	01.18.17 09.00	Basis:	Wet Weight
Seq Number:	3008017				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**1.49**	0.376	mg/kg	01.18.17 13.17		250
Toluene	108-88-3	**43.0**	0.501	mg/kg	01.18.17 13.17		250
Ethylbenzene	100-41-4	**10.4**	0.501	mg/kg	01.18.17 13.17		250
m_p-Xylenes	179601-23-1	**62.9**	0.501	mg/kg	01.18.17 13.17		250
o-Xylene	95-47-6	**19.0**	0.752	mg/kg	01.18.17 13.17		250
Total Xylenes	1330-20-7	**81.9**	0.501	mg/kg	01.18.17 13.17		250
Total BTEX		**137**	0.376	mg/kg	01.18.17 13.17		250

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	74	%	80-120	01.18.17 13.17	***
1,4-Difluorobenzene	540-36-3	72	%	80-120	01.18.17 13.17	***

Certificate of Analytical Results 544228

COG Operating LLC, Artesia, NM

Pintail 3 Federal #001H

Sample Id:	**T2 - 1'**	Matrix:	Soil	Date Received:	01.16.17 12.00
Lab Sample Id:	544228-003	Date Collected:	01.10.17 10.00	Sample Depth:	1 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNR			% Moisture:	
Analyst:	MNR	Date Prep:	01.20.17 10.00	Basis:	Wet Weight
Seq Number:	3008153				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**28.0**	5.00	mg/kg	01.20.17 15.24		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.17.17 16.00	Basis:	Wet Weight
Seq Number:	3007833				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	**1030**	15.0	mg/kg	01.17.17 21.08		1
C10-C28 Diesel Range Organics	C10C28DRO	**3040**	15.0	mg/kg	01.17.17 21.08		1
Total TPH	PHC635	**4070**	15.0	mg/kg	01.17.17 21.08		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	01.17.17 21.08	
o-Terphenyl	84-15-1	106	%	70-135	01.17.17 21.08	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	01.17.17 12.00	Basis:	Wet Weight
Seq Number:	3007824				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0752	0.0752	mg/kg	01.17.17 22.50	U	50
Toluene	108-88-3	**11.7**	0.100	mg/kg	01.17.17 22.50		50
Ethylbenzene	100-41-4	**5.54**	0.100	mg/kg	01.17.17 22.50		50
m_p-Xylenes	179601-23-1	**26.8**	0.100	mg/kg	01.17.17 22.50		50
o-Xylene	95-47-6	**7.56**	0.150	mg/kg	01.17.17 22.50		50
Total Xylenes	1330-20-7	**34.4**	0.100	mg/kg	01.17.17 22.50		50
Total BTEX		**51.6**	0.0752	mg/kg	01.17.17 22.50		50

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	94	%	80-120	01.17.17 22.50	
1,4-Difluorobenzene	540-36-3	80	%	80-120	01.17.17 22.50	

Certificate of Analytical Results 544228

COG Operating LLC, Artesia, NM

Pintail 3 Federal #001H

Sample Id:	**T2 - 2'**	Matrix:	Soil	Date Received:	01.16.17 12.00
Lab Sample Id:	544228-004	Date Collected:	01.10.17 10.00	Sample Depth:	2 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNR			% Moisture:	
Analyst:	MNR	Date Prep:	01.20.17 10.00	Basis:	Wet Weight
Seq Number:	3008153				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**11.5**	5.00	mg/kg	01.20.17 16.07		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.17.17 16.00	Basis:	Wet Weight
Seq Number:	3007833				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	**724**	15.0	mg/kg	01.17.17 21.31		1
C10-C28 Diesel Range Organics	C10C28DRO	**2570**	15.0	mg/kg	01.17.17 21.31		1
Total TPH	PHC635	**3290**	15.0	mg/kg	01.17.17 21.31		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	01.17.17 21.31	
o-Terphenyl	84-15-1	106	%	70-135	01.17.17 21.31	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	01.17.17 12.00	Basis:	Wet Weight
Seq Number:	3007824				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.149	0.149	mg/kg	01.17.17 22.00	U	100
Toluene	108-88-3	**4.93**	0.199	mg/kg	01.17.17 22.00		100
Ethylbenzene	100-41-4	**4.04**	0.199	mg/kg	01.17.17 22.00		100
m_p-Xylenes	179601-23-1	**18.0**	0.199	mg/kg	01.17.17 22.00		100
o-Xylene	95-47-6	**4.89**	0.298	mg/kg	01.17.17 22.00		100
Total Xylenes	1330-20-7	**22.9**	0.199	mg/kg	01.17.17 22.00		100
Total BTEX		**31.9**	0.149	mg/kg	01.17.17 22.00		100

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	92	%	80-120	01.17.17 22.00	
1,4-Difluorobenzene	540-36-3	108	%	80-120	01.17.17 22.00	

Certificate of Analytical Results 544228

COG Operating LLC, Artesia, NM

Pintail 3 Federal #001H

Sample Id:	**T2 - 3'**	Matrix:	Soil	Date Received:	01.16.17 12.00
Lab Sample Id:	544228-005	Date Collected:	01.10.17 10.00	Sample Depth:	3 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNR			% Moisture:	
Analyst:	MNR	Date Prep:	01.20.17 10.00	Basis:	Wet Weight
Seq Number:	3008153				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**11.2**	5.00	mg/kg	01.20.17 16.14		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.17.17 16.00	Basis:	Wet Weight
Seq Number:	3007833				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	**303**	15.0	mg/kg	01.17.17 21.54		1
C10-C28 Diesel Range Organics	C10C28DRO	**874**	15.0	mg/kg	01.17.17 21.54		1
Total TPH	PHC635	**1180**	15.0	mg/kg	01.17.17 21.54		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	01.17.17 21.54	
o-Terphenyl	84-15-1	108	%	70-135	01.17.17 21.54	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	01.17.17 12.00	Basis:	Wet Weight
Seq Number:	3007824				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.149	0.149	mg/kg	01.17.17 22.17	U	100
Toluene	108-88-3	**5.70**	0.198	mg/kg	01.17.17 22.17		100
Ethylbenzene	100-41-4	**2.60**	0.198	mg/kg	01.17.17 22.17		100
m_p-Xylenes	179601-23-1	**11.5**	0.198	mg/kg	01.17.17 22.17		100
o-Xylene	95-47-6	**3.28**	0.297	mg/kg	01.17.17 22.17		100
Total Xylenes	1330-20-7	**14.8**	0.198	mg/kg	01.17.17 22.17		100
Total BTEX		**23.1**	0.149	mg/kg	01.17.17 22.17		100

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	116	%	80-120	01.17.17 22.17	
4-Bromofluorobenzene	460-00-4	94	%	80-120	01.17.17 22.17	

Certificate of Analytical Results 544228

COG Operating LLC, Artesia, NM

Pintail 3 Federal #001H

Sample Id:	**T2 - 4'**	Matrix:	Soil	Date Received:	01.16.17 12.00
Lab Sample Id:	544228-006	Date Collected:	01.10.17 10.00	Sample Depth:	4 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNR			% Moisture:	
Analyst:	MNR	Date Prep:	01.20.17 10.00	Basis:	Wet Weight
Seq Number:	3008153				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**22.9**	5.00	mg/kg	01.20.17 16.21		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.17.17 16.00	Basis:	Wet Weight
Seq Number:	3007833				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	**24.9**	15.0	mg/kg	01.17.17 22.21		1
C10-C28 Diesel Range Organics	C10C28DRO	**223**	15.0	mg/kg	01.17.17 22.21		1
Total TPH	PHC635	**248**	15.0	mg/kg	01.17.17 22.21		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	01.17.17 22.21	
o-Terphenyl	84-15-1	123	%	70-135	01.17.17 22.21	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	01.17.17 12.00	Basis:	Wet Weight
Seq Number:	3007824				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00151	0.00151	mg/kg	01.17.17 20.55	U	1
Toluene	108-88-3	**0.00360**	0.00201	mg/kg	01.17.17 20.55		1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	01.17.17 20.55	U	1
m_p-Xylenes	179601-23-1	**0.00542**	0.00201	mg/kg	01.17.17 20.55		1
o-Xylene	95-47-6	**0.00339**	0.00302	mg/kg	01.17.17 20.55		1
Total Xylenes	1330-20-7	**0.00881**	0.00201	mg/kg	01.17.17 20.55		1
Total BTEX		**0.0124**	0.00151	mg/kg	01.17.17 20.55		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	108	%	80-120	01.17.17 20.55	
4-Bromofluorobenzene	460-00-4	88	%	80-120	01.17.17 20.55	

Certificate of Analytical Results 544228

COG Operating LLC, Artesia, NM

Pintail 3 Federal #001H

Sample Id:	**T2 - 5'**	Matrix:	Soil	Date Received:	01.16.17 12.00
Lab Sample Id:	544228-007	Date Collected:	01.10.17 10.00	Sample Depth:	5 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNR			% Moisture:	
Analyst:	MNR	Date Prep:	01.20.17 10.00	Basis:	Wet Weight
Seq Number:	3008153				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**26.5**	5.00	mg/kg	01.20.17 16.28		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.17.17 16.00	Basis:	Wet Weight
Seq Number:	3007833				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	**249**	15.0	mg/kg	01.17.17 22.44		1
C10-C28 Diesel Range Organics	C10C28DRO	**1040**	15.0	mg/kg	01.17.17 22.44		1
Total TPH	PHC635	**1290**	15.0	mg/kg	01.17.17 22.44		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	01.17.17 22.44	
o-Terphenyl	84-15-1	106	%	70-135	01.17.17 22.44	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	01.17.17 12.00	Basis:	Wet Weight
Seq Number:	3007824				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.149	0.149	mg/kg	01.17.17 22.33	U	100
Toluene	108-88-3	**0.766**	0.198	mg/kg	01.17.17 22.33		100
Ethylbenzene	100-41-4	**1.32**	0.198	mg/kg	01.17.17 22.33		100
m_p-Xylenes	179601-23-1	**6.10**	0.198	mg/kg	01.17.17 22.33		100
o-Xylene	95-47-6	**2.11**	0.297	mg/kg	01.17.17 22.33		100
Total Xylenes	1330-20-7	**8.21**	0.198	mg/kg	01.17.17 22.33		100
Total BTEX		**10.3**	0.149	mg/kg	01.17.17 22.33		100

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	107	%	80-120	01.17.17 22.33	
4-Bromofluorobenzene	460-00-4	96	%	80-120	01.17.17 22.33	

Certificate of Analytical Results 544228

COG Operating LLC, Artesia, NM

Pintail 3 Federal #001H

Sample Id:	**T2 - 6'**	Matrix:	Soil	Date Received:	01.16.17 12.00
Lab Sample Id:	544228-008	Date Collected:	01.10.17 10.00	Sample Depth:	6 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNR			% Moisture:	
Analyst:	MNR	Date Prep:	01.20.17 10.00	Basis:	Wet Weight
Seq Number:	3008153				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**8.00**	5.00	mg/kg	01.20.17 16.35		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.17.17 16.00	Basis:	Wet Weight
Seq Number:	3007833				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	01.17.17 23.09	U	1
C10-C28 Diesel Range Organics	C10C28DRO	**68.0**	15.0	mg/kg	01.17.17 23.09		1
Total TPH	PHC635	**68.0**	15.0	mg/kg	01.17.17 23.09		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	01.17.17 23.09	
o-Terphenyl	84-15-1	101	%	70-135	01.17.17 23.09	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	01.18.17 09.00	Basis:	Wet Weight
Seq Number:	3008017				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00291	0.00291	mg/kg	01.18.17 17.38	U	1
Toluene	108-88-3	<0.00388	0.00388	mg/kg	01.18.17 17.38	U	1
Ethylbenzene	100-41-4	<0.00388	0.00388	mg/kg	01.18.17 17.38	U	1
m_p-Xylenes	179601-23-1	<0.00388	0.00388	mg/kg	01.18.17 17.38	U	1
o-Xylene	95-47-6	<0.00581	0.00581	mg/kg	01.18.17 17.38	U	1
Total Xylenes	1330-20-7	<0.00388	0.00388	mg/kg	01.18.17 17.38	U	1
Total BTEX		<0.00291	0.00291	mg/kg	01.18.17 17.38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	96	%	80-120	01.18.17 17.38	
1,4-Difluorobenzene	540-36-3	117	%	80-120	01.18.17 17.38	

Certificate of Analytical Results 544228

COG Operating LLC, Artesia, NM

Pintail 3 Federal #001H

Sample Id:	**T2 - 7'**	Matrix:	Soil	Date Received:	01.16.17 12.00
Lab Sample Id:	544228-009	Date Collected:	01.10.17 10.00	Sample Depth:	7 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNR			% Moisture:	
Analyst:	MNR	Date Prep:	01.20.17 10.00	Basis:	Wet Weight
Seq Number:	3008153				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**13.9**	5.00	mg/kg	01.20.17 16.42		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.17.17 16.00	Basis:	Wet Weight
Seq Number:	3007833				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	**46.0**	15.0	mg/kg	01.17.17 23.33		1
C10-C28 Diesel Range Organics	C10C28DRO	**250**	15.0	mg/kg	01.17.17 23.33		1
Total TPH	PHC635	**296**	15.0	mg/kg	01.17.17 23.33		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	01.17.17 23.33	
o-Terphenyl	84-15-1	106	%	70-135	01.17.17 23.33	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	01.17.17 12.00	Basis:	Wet Weight
Seq Number:	3007823				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00149	0.00149	mg/kg	01.17.17 15.07	U	1
Toluene	108-88-3	**0.0158**	0.00199	mg/kg	01.17.17 15.07		1
Ethylbenzene	100-41-4	**0.0557**	0.00199	mg/kg	01.17.17 15.07		1
m_p-Xylenes	179601-23-1	**0.209**	0.00199	mg/kg	01.17.17 15.07		1
o-Xylene	95-47-6	**0.126**	0.00298	mg/kg	01.17.17 15.07		1
Total Xylenes	1330-20-7	**0.335**	0.00199	mg/kg	01.17.17 15.07		1
Total BTEX		**0.407**	0.00149	mg/kg	01.17.17 15.07		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	111	%	80-120	01.17.17 15.07	
4-Bromofluorobenzene	460-00-4	84	%	80-120	01.17.17 15.07	

Certificate of Analytical Results 544228

COG Operating LLC, Artesia, NM

Pintail 3 Federal #001H

Sample Id:	**T3 - 1'**	Matrix:	Soil	Date Received:	01.16.17 12.00
Lab Sample Id:	544228-010	Date Collected:	01.10.17 10.30	Sample Depth:	1 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNR			% Moisture:	
Analyst:	MNR	Date Prep:	01.20.17 10.00	Basis:	Wet Weight
Seq Number:	3008153				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**17.1**	5.00	mg/kg	01.20.17 16.49		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.17.17 16.00	Basis:	Wet Weight
Seq Number:	3007833				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	**4670**	74.9	mg/kg	01.18.17 08.18		5
C10-C28 Diesel Range Organics	C10C28DRO	**7950**	74.9	mg/kg	01.18.17 08.18		5
Total TPH	PHC635	**12600**	74.9	mg/kg	01.18.17 08.18		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	125	%	70-135	01.18.17 08.18	
o-Terphenyl	84-15-1	105	%	70-135	01.18.17 08.18	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	01.18.17 09.00	Basis:	Wet Weight
Seq Number:	3008017				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**8.85**	0.744	mg/kg	01.18.17 13.00		500
Toluene	108-88-3	**94.0**	0.992	mg/kg	01.18.17 13.00		500
Ethylbenzene	100-41-4	**21.0**	0.992	mg/kg	01.18.17 13.00		500
m_p-Xylenes	179601-23-1	**118**	0.992	mg/kg	01.18.17 13.00		500
o-Xylene	95-47-6	**33.6**	1.49	mg/kg	01.18.17 13.00		500
Total Xylenes	1330-20-7	**152**	0.992	mg/kg	01.18.17 13.00		500
Total BTEX		**275**	0.744	mg/kg	01.18.17 13.00		500

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	64	%	80-120	01.18.17 13.00	***
1,4-Difluorobenzene	540-36-3	68	%	80-120	01.18.17 13.00	***

Certificate of Analytical Results 544228

COG Operating LLC, Artesia, NM

Pintail 3 Federal #001H

Sample Id:	**T3 - 2'**	Matrix:	Soil	Date Received:	01.16.17 12.00
Lab Sample Id:	544228-011	Date Collected:	01.10.17 10.30	Sample Depth:	2 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNR			% Moisture:	
Analyst:	MNR	Date Prep:	01.20.17 10.00	Basis:	Wet Weight
Seq Number:	3008153				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**12.9**	5.00	mg/kg	01.20.17 16.56		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.17.17 16.00	Basis:	Wet Weight
Seq Number:	3007833				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	**435**	15.0	mg/kg	01.18.17 01.11		1
C10-C28 Diesel Range Organics	C10C28DRO	**1190**	15.0	mg/kg	01.18.17 01.11		1
Total TPH	PHC635	**1630**	15.0	mg/kg	01.18.17 01.11		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	01.18.17 01.11	
o-Terphenyl	84-15-1	104	%	70-135	01.18.17 01.11	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	01.18.17 09.00	Basis:	Wet Weight
Seq Number:	3008017				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.297	0.297	mg/kg	01.18.17 13.32	U	200
Toluene	108-88-3	**11.4**	0.396	mg/kg	01.18.17 13.32		200
Ethylbenzene	100-41-4	**3.98**	0.396	mg/kg	01.18.17 13.32		200
m_p-Xylenes	179601-23-1	**25.5**	0.396	mg/kg	01.18.17 13.32		200
o-Xylene	95-47-6	**8.05**	0.594	mg/kg	01.18.17 13.32		200
Total Xylenes	1330-20-7	**33.6**	0.396	mg/kg	01.18.17 13.32		200
Total BTEX		**48.9**	0.297	mg/kg	01.18.17 13.32		200

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	88	%	80-120	01.18.17 13.32	
1,4-Difluorobenzene	540-36-3	114	%	80-120	01.18.17 13.32	

Certificate of Analytical Results 544228

COG Operating LLC, Artesia, NM

Pintail 3 Federal #001H

Sample Id:	**T3 - 3'**	Matrix:	Soil	Date Received:	01.16.17 12.00
Lab Sample Id:	544228-012	Date Collected:	01.10.17 10.30	Sample Depth:	3 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNR			% Moisture:	
Analyst:	MNR	Date Prep:	01.20.17 10.00	Basis:	Wet Weight
Seq Number:	3008153				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**5.66**	5.00	mg/kg	01.20.17 17.03		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.17.17 16.00	Basis:	Wet Weight
Seq Number:	3007833				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	01.18.17 01.35	U	1
C10-C28 Diesel Range Organics	C10C28DRO	**84.0**	15.0	mg/kg	01.18.17 01.35		1
Total TPH	PHC635	**84.0**	15.0	mg/kg	01.18.17 01.35		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	01.18.17 01.35	
o-Terphenyl	84-15-1	106	%	70-135	01.18.17 01.35	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	01.18.17 09.00	Basis:	Wet Weight
Seq Number:	3008017				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00301	0.00301	mg/kg	01.18.17 16.15	U	1
Toluene	108-88-3	<0.00402	0.00402	mg/kg	01.18.17 16.15	U	1
Ethylbenzene	100-41-4	<0.00402	0.00402	mg/kg	01.18.17 16.15	U	1
m_p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	01.18.17 16.15	U	1
o-Xylene	95-47-6	<0.00602	0.00602	mg/kg	01.18.17 16.15	U	1
Total Xylenes	1330-20-7	<0.00402	0.00402	mg/kg	01.18.17 16.15	U	1
Total BTEX		<0.00301	0.00301	mg/kg	01.18.17 16.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	93	%	80-120	01.18.17 16.15	
1,4-Difluorobenzene	540-36-3	117	%	80-120	01.18.17 16.15	

Certificate of Analytical Results 544228

COG Operating LLC, Artesia, NM

Pintail 3 Federal #001H

Sample Id:	**T3 - 3.5'**	Matrix:	Soil	Date Received:	01.16.17 12.00
Lab Sample Id:	544228-013	Date Collected:	01.10.17 10.30	Sample Depth:	3.5 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNR			% Moisture:	
Analyst:	MNR	Date Prep:	01.20.17 10.00	Basis:	Wet Weight
Seq Number:	3008153				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**12.2**	5.00	mg/kg	01.20.17 17.38		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.17.17 16.00	Basis:	Wet Weight
Seq Number:	3007833				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	01.18.17 02.01	U	1
C10-C28 Diesel Range Organics	C10C28DRO	<15.0	15.0	mg/kg	01.18.17 02.01	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.18.17 02.01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	01.18.17 02.01	
o-Terphenyl	84-15-1	102	%	70-135	01.18.17 02.01	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	01.19.17 13.00	Basis:	Wet Weight
Seq Number:	3007993				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00292	0.00292	mg/kg	01.19.17 17.44	U	1
Toluene	108-88-3	<0.00389	0.00389	mg/kg	01.19.17 17.44	U	1
Ethylbenzene	100-41-4	<0.00389	0.00389	mg/kg	01.19.17 17.44	U	1
m_p-Xylenes	179601-23-1	<0.00389	0.00389	mg/kg	01.19.17 17.44	U	1
o-Xylene	95-47-6	<0.00584	0.00584	mg/kg	01.19.17 17.44	U	1
Total Xylenes	1330-20-7	<0.00389	0.00389	mg/kg	01.19.17 17.44	U	1
Total BTEX		<0.00292	0.00292	mg/kg	01.19.17 17.44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	118	%	80-120	01.19.17 17.44	
4-Bromofluorobenzene	460-00-4	98	%	80-120	01.19.17 17.44	

Certificate of Analytical Results 544228

COG Operating LLC, Artesia, NM

Pintail 3 Federal #001H

Sample Id:	**T4 - 1'**	Matrix:	Soil	Date Received:	01.16.17 12.00
Lab Sample Id:	544228-014	Date Collected:	01.10.17 10.30	Sample Depth:	1 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNR			% Moisture:	
Analyst:	MNR	Date Prep:	01.20.17 10.00	Basis:	Wet Weight
Seq Number:	3008153				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**18.7**	5.00	mg/kg	01.20.17 17.45		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.17.17 16.00	Basis:	Wet Weight
Seq Number:	3007833				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	**2000**	15.0	mg/kg	01.18.17 02.24		1
C10-C28 Diesel Range Organics	C10C28DRO	**4530**	15.0	mg/kg	01.18.17 02.24		1
Total TPH	PHC635	**6530**	15.0	mg/kg	01.18.17 02.24		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	115	%	70-135	01.18.17 02.24	
o-Terphenyl	84-15-1	108	%	70-135	01.18.17 02.24	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	01.17.17 12.00	Basis:	Wet Weight
Seq Number:	3007824				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.297	0.297	mg/kg	01.18.17 00.42	U	200
Toluene	108-88-3	**29.2**	0.396	mg/kg	01.18.17 00.42		200
Ethylbenzene	100-41-4	**17.1**	0.396	mg/kg	01.18.17 00.42		200
m_p-Xylenes	179601-23-1	**65.5**	0.396	mg/kg	01.18.17 00.42		200
o-Xylene	95-47-6	**17.1**	0.594	mg/kg	01.18.17 00.42		200
Total Xylenes	1330-20-7	**82.6**	0.396	mg/kg	01.18.17 00.42		200
Total BTEX		**129**	0.297	mg/kg	01.18.17 00.42		200

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	93	%	80-120	01.18.17 00.42	
1,4-Difluorobenzene	540-36-3	98	%	80-120	01.18.17 00.42	

Certificate of Analytical Results 544228

COG Operating LLC, Artesia, NM

Pintail 3 Federal #001H

Sample Id:	**T4 - 2'**	Matrix:	Soil	Date Received:	01.16.17 12.00
Lab Sample Id:	544228-015	Date Collected:	01.10.17 10.30	Sample Depth:	2 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNR			% Moisture:	
Analyst:	MNR	Date Prep:	01.20.17 10.00	Basis:	Wet Weight
Seq Number:	3008153				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**6.35**	5.00	mg/kg	01.20.17 17.52		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.17.17 16.00	Basis:	Wet Weight
Seq Number:	3007833				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	01.18.17 02.48	U	1
C10-C28 Diesel Range Organics	C10C28DRO	<15.0	15.0	mg/kg	01.18.17 02.48	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.18.17 02.48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	01.18.17 02.48	
o-Terphenyl	84-15-1	104	%	70-135	01.18.17 02.48	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	01.18.17 09.00	Basis:	Wet Weight
Seq Number:	3008017				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00291	0.00291	mg/kg	01.18.17 16.57	U	1
Toluene	108-88-3	<0.00388	0.00388	mg/kg	01.18.17 16.57	U	1
Ethylbenzene	100-41-4	<0.00388	0.00388	mg/kg	01.18.17 16.57	U	1
m_p-Xylenes	179601-23-1	<0.00388	0.00388	mg/kg	01.18.17 16.57	U	1
o-Xylene	95-47-6	<0.00581	0.00581	mg/kg	01.18.17 16.57	U	1
Total Xylenes	1330-20-7	<0.00388	0.00388	mg/kg	01.18.17 16.57	U	1
Total BTEX		<0.00291	0.00291	mg/kg	01.18.17 16.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	118	%	80-120	01.18.17 16.57	
4-Bromofluorobenzene	460-00-4	95	%	80-120	01.18.17 16.57	

Certificate of Analytical Results 544228

COG Operating LLC, Artesia, NM

Pintail 3 Federal #001H

Sample Id:	**T4 - 3'**	Matrix:	Soil	Date Received:	01.16.17 12.00
Lab Sample Id:	544228-016	Date Collected:	01.10.17 10.30	Sample Depth:	3 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNR			% Moisture:	
Analyst:	MNR	Date Prep:	01.20.17 10.00	Basis:	Wet Weight
Seq Number:	3008153				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**10.2**	5.00	mg/kg	01.20.17 17.59		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.17.17 16.00	Basis:	Wet Weight
Seq Number:	3007833				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	**88.4**	15.0	mg/kg	01.18.17 03.14		1
C10-C28 Diesel Range Organics	C10C28DRO	**434**	15.0	mg/kg	01.18.17 03.14		1
Total TPH	PHC635	**522**	15.0	mg/kg	01.18.17 03.14		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	01.18.17 03.14	
o-Terphenyl	84-15-1	100	%	70-135	01.18.17 03.14	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	01.18.17 09.00	Basis:	Wet Weight
Seq Number:	3008017				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00285	0.00285	mg/kg	01.18.17 11.22	U	1
Toluene	108-88-3	**0.256**	0.00380	mg/kg	01.18.17 11.22		1
Ethylbenzene	100-41-4	**0.263**	0.00380	mg/kg	01.18.17 11.22		1
m_p-Xylenes	179601-23-1	**1.38**	0.00380	mg/kg	01.18.17 11.22		1
o-Xylene	95-47-6	**0.502**	0.00570	mg/kg	01.18.17 11.22		1
Total Xylenes	1330-20-7	**1.88**	0.00380	mg/kg	01.18.17 11.22		1
Total BTEX		**2.40**	0.00285	mg/kg	01.18.17 11.22		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	66	%	80-120	01.18.17 11.22	**
1,4-Difluorobenzene	540-36-3	93	%	80-120	01.18.17 11.22	

Certificate of Analytical Results 544228

COG Operating LLC, Artesia, NM

Pintail 3 Federal #001H

Sample Id:	**T4 - 4'**	Matrix:	Soil	Date Received:	01.16.17 12.00
Lab Sample Id:	544228-017	Date Collected:	01.10.17 10.30	Sample Depth:	4 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNR			% Moisture:	
Analyst:	MNR	Date Prep:	01.20.17 10.00	Basis:	Wet Weight
Seq Number:	3008153				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**7.58**	5.00	mg/kg	01.20.17 18.06		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.17.17 16.00	Basis:	Wet Weight
Seq Number:	3007833				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	01.18.17 03.37	U	1
C10-C28 Diesel Range Organics	C10C28DRO	<15.0	15.0	mg/kg	01.18.17 03.37	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.18.17 03.37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	01.18.17 03.37	
o-Terphenyl	84-15-1	107	%	70-135	01.18.17 03.37	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	01.18.17 09.00	Basis:	Wet Weight
Seq Number:	3008017				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00287	0.00287	mg/kg	01.18.17 18.11	U	1
Toluene	108-88-3	<0.00383	0.00383	mg/kg	01.18.17 18.11	U	1
Ethylbenzene	100-41-4	<0.00383	0.00383	mg/kg	01.18.17 18.11	U	1
m_p-Xylenes	179601-23-1	<0.00383	0.00383	mg/kg	01.18.17 18.11	U	1
o-Xylene	95-47-6	<0.00575	0.00575	mg/kg	01.18.17 18.11	U	1
Total Xylenes	1330-20-7	<0.00383	0.00383	mg/kg	01.18.17 18.11	U	1
Total BTEX		<0.00287	0.00287	mg/kg	01.18.17 18.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	118	%	80-120	01.18.17 18.11	
4-Bromofluorobenzene	460-00-4	103	%	80-120	01.18.17 18.11	

Certificate of Analytical Results 544228

COG Operating LLC, Artesia, NM

Pintail 3 Federal #001H

Sample Id:	**T4 - 6'**	Matrix:	Soil	Date Received:	01.16.17 12.00
Lab Sample Id:	544228-018	Date Collected:	01.10.17 10.30	Sample Depth:	6 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNR			% Moisture:	
Analyst:	MNR	Date Prep:	01.20.17 10.00	Basis:	Wet Weight
Seq Number:	3008153				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**10.1**	5.00	mg/kg	01.20.17 18.13		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.17.17 16.00	Basis:	Wet Weight
Seq Number:	3007833				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	01.18.17 04.03	U	1
C10-C28 Diesel Range Organics	C10C28DRO	**21.5**	15.0	mg/kg	01.18.17 04.03		1
Total TPH	PHC635	**21.5**	15.0	mg/kg	01.18.17 04.03		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	01.18.17 04.03	
o-Terphenyl	84-15-1	100	%	70-135	01.18.17 04.03	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	01.18.17 09.00	Basis:	Wet Weight
Seq Number:	3008017				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00290	0.00290	mg/kg	01.18.17 18.27	U	1
Toluene	108-88-3	<0.00386	0.00386	mg/kg	01.18.17 18.27	U	1
Ethylbenzene	100-41-4	<0.00386	0.00386	mg/kg	01.18.17 18.27	U	1
m_p-Xylenes	179601-23-1	<0.00386	0.00386	mg/kg	01.18.17 18.27	U	1
o-Xylene	95-47-6	<0.00579	0.00579	mg/kg	01.18.17 18.27	U	1
Total Xylenes	1330-20-7	<0.00386	0.00386	mg/kg	01.18.17 18.27	U	1
Total BTEX		<0.00290	0.00290	mg/kg	01.18.17 18.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	97	%	80-120	01.18.17 18.27	
1,4-Difluorobenzene	540-36-3	116	%	80-120	01.18.17 18.27	

Certificate of Analytical Results 544228

COG Operating LLC, Artesia, NM

Pintail 3 Federal #001H

Sample Id:	**T5 - 1'**	Matrix:	Soil	Date Received:	01.16.17 12.00
Lab Sample Id:	544228-019	Date Collected:	01.10.17 11.00	Sample Depth:	1 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNR			% Moisture:	
Analyst:	MNR	Date Prep:	01.20.17 10.00	Basis:	Wet Weight
Seq Number:	3008153				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**9.79**	5.00	mg/kg	01.20.17 18.21		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.17.17 16.00	Basis:	Wet Weight
Seq Number:	3007833				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	01.18.17 05.16	U	1
C10-C28 Diesel Range Organics	C10C28DRO	**166**	15.0	mg/kg	01.18.17 05.16		1
Total TPH	PHC635	**166**	15.0	mg/kg	01.18.17 05.16		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	01.18.17 05.16	
o-Terphenyl	84-15-1	104	%	70-135	01.18.17 05.16	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	01.17.17 12.00	Basis:	Wet Weight
Seq Number:	3007824				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**0.00240**	0.00149	mg/kg	01.17.17 21.44		1
Toluene	108-88-3	**0.00989**	0.00199	mg/kg	01.17.17 21.44		1
Ethylbenzene	100-41-4	**0.00391**	0.00199	mg/kg	01.17.17 21.44		1
m_p-Xylenes	179601-23-1	**0.0354**	0.00199	mg/kg	01.17.17 21.44		1
o-Xylene	95-47-6	<0.00298	0.00298	mg/kg	01.17.17 21.44	U	1
Total Xylenes	1330-20-7	**0.0354**	0.00199	mg/kg	01.17.17 21.44		1
Total BTEX		**0.0516**	0.00149	mg/kg	01.17.17 21.44		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	114	%	80-120	01.17.17 21.44	
4-Bromofluorobenzene	460-00-4	93	%	80-120	01.17.17 21.44	

COG Operating LLC, Artesia, NM

Pintail 3 Federal #001H

Sample Id:	**T5 - 2'**	Matrix:	Soil	Date Received:	01.16.17 12.00
Lab Sample Id:	544228-020	Date Collected:	01.10.17 11.00	Sample Depth:	2 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNR			% Moisture:	
Analyst:	MNR	Date Prep:	01.20.17 10.00	Basis:	Wet Weight
Seq Number:	3008153				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**13.6**	5.00	mg/kg	01.20.17 18.28		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.17.17 16.00	Basis:	Wet Weight
Seq Number:	3007833				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	**2580**	74.8	mg/kg	01.18.17 08.42		5
C10-C28 Diesel Range Organics	C10C28DRO	**8380**	74.8	mg/kg	01.18.17 08.42		5
Total TPH	PHC635	**11000**	74.8	mg/kg	01.18.17 08.42		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	128	%	70-135	01.18.17 08.42	
o-Terphenyl	84-15-1	109	%	70-135	01.18.17 08.42	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	01.17.17 12.00	Basis:	Wet Weight
Seq Number:	3007824				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.299	0.299	mg/kg	01.17.17 23.22	U	200
Toluene	108-88-3	**36.3**	0.399	mg/kg	01.17.17 23.22		200
Ethylbenzene	100-41-4	**14.7**	0.399	mg/kg	01.17.17 23.22		200
m_p-Xylenes	179601-23-1	**61.6**	0.399	mg/kg	01.17.17 23.22		200
o-Xylene	95-47-6	**17.2**	0.599	mg/kg	01.17.17 23.22		200
Total Xylenes	1330-20-7	**78.8**	0.399	mg/kg	01.17.17 23.22		200
Total BTEX		**130**	0.299	mg/kg	01.17.17 23.22		200

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	95	%	80-120	01.17.17 23.22	
4-Bromofluorobenzene	460-00-4	99	%	80-120	01.17.17 23.22	

Certificate of Analytical Results 544228

COG Operating LLC, Artesia, NM

Pintail 3 Federal #001H

Sample Id:	**T5 - 3'**	Matrix:	Soil	Date Received:	01.16.17 12.00
Lab Sample Id:	544228-021	Date Collected:	01.10.17 11.00	Sample Depth:	3 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNR			% Moisture:	
Analyst:	MNR	Date Prep:	01.20.17 10.00	Basis:	Wet Weight
Seq Number:	3008153				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**23.3**	5.00	mg/kg	01.20.17 18.35		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.20.17 15.00	Basis:	Wet Weight
Seq Number:	3008186				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	**59.0**	15.0	mg/kg	01.20.17 19.03		1
C10-C28 Diesel Range Organics	C10C28DRO	**436**	15.0	mg/kg	01.20.17 19.03		1
Total TPH	PHC635	**495**	15.0	mg/kg	01.20.17 19.03		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	01.20.17 19.03	
o-Terphenyl	84-15-1	117	%	70-135	01.20.17 19.03	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	01.18.17 09.00	Basis:	Wet Weight
Seq Number:	3008017				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00304	0.00304	mg/kg	01.18.17 11.55	U	1
Toluene	108-88-3	**0.00915**	0.00405	mg/kg	01.18.17 11.55		1
Ethylbenzene	100-41-4	**0.0199**	0.00405	mg/kg	01.18.17 11.55		1
m_p-Xylenes	179601-23-1	**0.211**	0.00405	mg/kg	01.18.17 11.55		1
o-Xylene	95-47-6	**0.0990**	0.00607	mg/kg	01.18.17 11.55		1
Total Xylenes	1330-20-7	**0.310**	0.00405	mg/kg	01.18.17 11.55		1
Total BTEX		**0.339**	0.00304	mg/kg	01.18.17 11.55		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	98	%	80-120	01.18.17 11.55	
1,4-Difluorobenzene	540-36-3	99	%	80-120	01.18.17 11.55	

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

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

COG Operating LLC

Pintail 3 Federal #001H

Analytical Method: **Inorganic Anions by EPA 300/300.1** Prep Method: E300P
Seq Number: 3008054 Matrix: Solid Date Prep: 01.20.17
MB Sample Id: 718770-1-BLK LCS Sample Id: 718770-1-BKS LCSD Sample Id: 718770-1-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	241	96	246	98	90-110	2	20	mg/kg	01.20.17 10:28	

Analytical Method: **Inorganic Anions by EPA 300/300.1** Prep Method: E300P
Seq Number: 3008153 Matrix: Solid Date Prep: 01.20.17
MB Sample Id: 718823-1-BLK LCS Sample Id: 718823-1-BKS LCSD Sample Id: 718823-1-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	248	99	242	97	90-110	2	20	mg/kg	01.20.17 15:10	

Analytical Method: **Inorganic Anions by EPA 300/300.1** Prep Method: E300P
Seq Number: 3008054 Matrix: Soil Date Prep: 01.20.17
Parent Sample Id: 544227-025 MS Sample Id: 544227-025 S MSD Sample Id: 544227-025 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	10.5	250	247	95	248	95	90-110	0	20	mg/kg	01.20.17 12:56	

Analytical Method: **Inorganic Anions by EPA 300/300.1** Prep Method: E300P
Seq Number: 3008054 Matrix: Soil Date Prep: 01.20.17
Parent Sample Id: 544522-001 MS Sample Id: 544522-001 S MSD Sample Id: 544522-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	7280	250	7320	16	7320	16	90-110	0	20	mg/kg	01.20.17 10:50	X

Analytical Method: **Inorganic Anions by EPA 300/300.1** Prep Method: E300P
Seq Number: 3008153 Matrix: Soil Date Prep: 01.20.17
Parent Sample Id: 544228-003 MS Sample Id: 544228-003 S MSD Sample Id: 544228-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	28.0	250	269	96	273	98	90-110	1	20	mg/kg	01.20.17 15:31	

Analytical Method: **Inorganic Anions by EPA 300/300.1** Prep Method: E300P
Seq Number: 3008153 Matrix: Soil Date Prep: 01.20.17
Parent Sample Id: 544228-012 MS Sample Id: 544228-012 S MSD Sample Id: 544228-012 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	5.66	250	274	107	277	109	90-110	1	20	mg/kg	01.20.17 17:24	

COG Operating LLC

Pintail 3 Federal #001H

Analytical Method: TPH By SW8015 Mod — Prep Method: TX1005P
Seq Number: 3007833 — Matrix: Solid — Date Prep: 01.17.17
MB Sample Id: 718641-1-BLK — LCS Sample Id: 718641-1-BKS — LCSD Sample Id: 718641-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	826	83	844	84	70-135	2	35	mg/kg	01.17.17 19:30	
C10-C28 Diesel Range Organics	<15.0	1000	924	92	930	93	70-135	1	35	mg/kg	01.17.17 19:30	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	78		99		101		70-135	%	01.17.17 19:30
o-Terphenyl	84		86		88		70-135	%	01.17.17 19:30

Analytical Method: TPH By SW8015 Mod — Prep Method: TX1005P
Seq Number: 3008186 — Matrix: Solid — Date Prep: 01.20.17
MB Sample Id: 718867-1-BLK — LCS Sample Id: 718867-1-BKS — LCSD Sample Id: 718867-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	999	100	973	97	70-135	3	35	mg/kg	01.20.17 18:10	
C10-C28 Diesel Range Organics	<15.0	1000	1110	111	1100	110	70-135	1	35	mg/kg	01.20.17 18:10	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	105		125		130		70-135	%	01.20.17 18:10
o-Terphenyl	120		130		127		70-135	%	01.20.17 18:10

Analytical Method: TPH By SW8015 Mod — Prep Method: TX1005P
Seq Number: 3007833 — Matrix: Soil — Date Prep: 01.17.17
Parent Sample Id: 544228-018 — MS Sample Id: 544228-018 S — MSD Sample Id: 544228-018 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	999	864	86	853	85	70-135	1	35	mg/kg	01.18.17 04:26	
C10-C28 Diesel Range Organics	21.5	999	963	94	917	90	70-135	5	35	mg/kg	01.18.17 04:26	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	112		108		70-135	%	01.18.17 04:26
o-Terphenyl	108		102		70-135	%	01.18.17 04:26

COG Operating LLC

Pintail 3 Federal #001H

Analytical Method: TPH By SW8015 Mod | Prep Method: TX1005P
Seq Number: 3008186 | Matrix: Soil | Date Prep: 01.20.17
Parent Sample Id: 544228-021 | MS Sample Id: 544228-021 S | MSD Sample Id: 544228-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
C6-C10 Gasoline Range Hydrocarbons	59.0	1000	820	76	813	76	70-135	1	35	mg/kg	01.20.17 19:28	
C10-C28 Diesel Range Organics	436	1000	1210	77	1330	90	70-135	9	35	mg/kg	01.20.17 19:28	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	98		113		70-135	%	01.20.17 19:28
o-Terphenyl	87		102		70-135	%	01.20.17 19:28

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3007823 | Matrix: Solid | Date Prep: 01.17.17
MB Sample Id: 718571-1-BLK | LCS Sample Id: 718571-1-BKS | LCSD Sample Id: 718571-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00150	0.0998	0.0822	82	0.0798	80	70-130	3	35	mg/kg	01.17.17 09:42	
Toluene	<0.00200	0.0998	0.0838	84	0.0799	80	70-130	5	35	mg/kg	01.17.17 09:42	
Ethylbenzene	<0.00200	0.0998	0.103	103	0.0978	98	71-129	5	35	mg/kg	01.17.17 09:42	
m_p-Xylenes	<0.00200	0.200	0.201	101	0.188	94	70-135	7	35	mg/kg	01.17.17 09:42	
o-Xylene	<0.00299	0.0998	0.105	105	0.0905	91	71-133	15	35	mg/kg	01.17.17 09:42	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	112		116		102		80-120	%	01.17.17 09:42
4-Bromofluorobenzene	102		90		105		80-120	%	01.17.17 09:42

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3007824 | Matrix: Solid | Date Prep: 01.17.17
MB Sample Id: 718625-1-BLK | LCS Sample Id: 718625-1-BKS | LCSD Sample Id: 718625-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00149	0.0994	0.100	101	0.0956	96	70-130	4	35	mg/kg	01.17.17 19:16	
Toluene	<0.00199	0.0994	0.106	107	0.0998	100	70-130	6	35	mg/kg	01.17.17 19:16	
Ethylbenzene	<0.00199	0.0994	0.124	125	0.118	118	71-129	5	35	mg/kg	01.17.17 19:16	
m_p-Xylenes	<0.00199	0.199	0.243	122	0.230	114	70-135	5	35	mg/kg	01.17.17 19:16	
o-Xylene	<0.00298	0.0994	0.120	121	0.112	112	71-133	7	35	mg/kg	01.17.17 19:16	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	114		110		117		80-120	%	01.17.17 19:16
4-Bromofluorobenzene	97		118		120		80-120	%	01.17.17 19:16

COG Operating LLC

Pintail 3 Federal #001H

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3008017 — Matrix: Solid — Date Prep: 01.18.17
MB Sample Id: 718719-1-BLK — LCS Sample Id: 718719-1-BKS — LCSD Sample Id: 718719-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00151	0.100	0.101	101	0.0975	98	70-130	4	35	mg/kg	01.18.17 09:13	
Toluene	<0.00201	0.100	0.103	103	0.0995	100	70-130	3	35	mg/kg	01.18.17 09:13	
Ethylbenzene	<0.00201	0.100	0.120	120	0.121	122	71-129	1	35	mg/kg	01.18.17 09:13	
m_p-Xylenes	<0.00201	0.201	0.218	108	0.236	119	70-135	8	35	mg/kg	01.18.17 09:13	
o-Xylene	<0.00301	0.100	0.118	118	0.115	116	71-133	3	35	mg/kg	01.18.17 09:13	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	115		109		109		80-120	%	01.18.17 09:13
4-Bromofluorobenzene	94		106		111		80-120	%	01.18.17 09:13

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3007993 — Matrix: Solid — Date Prep: 01.19.17
MB Sample Id: 718730-1-BLK — LCS Sample Id: 718730-1-BKS — LCSD Sample Id: 718730-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00149	0.0996	0.0875	88	0.0901	90	70-130	3	35	mg/kg	01.19.17 12:14	
Toluene	<0.00199	0.0996	0.0838	84	0.0879	88	70-130	5	35	mg/kg	01.19.17 12:14	
Ethylbenzene	<0.00199	0.0996	0.106	106	0.111	111	71-129	5	35	mg/kg	01.19.17 12:14	
m_p-Xylenes	<0.00199	0.199	0.207	104	0.217	109	70-135	5	35	mg/kg	01.19.17 12:14	
o-Xylene	<0.00299	0.0996	0.0992	100	0.106	106	71-133	7	35	mg/kg	01.19.17 12:14	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	119		113		105		80-120	%	01.19.17 12:14
4-Bromofluorobenzene	92		106		95		80-120	%	01.19.17 12:14

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3007823 — Matrix: Soil — Date Prep: 01.17.17
Parent Sample Id: 543566-001 — MS Sample Id: 543566-001 S — MSD Sample Id: 543566-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00149	0.0996	0.0846	85	0.0811	80	70-130	4	35	mg/kg	01.17.17 10:14	
Toluene	<0.00199	0.0996	0.0841	84	0.0772	76	70-130	9	35	mg/kg	01.17.17 10:14	
Ethylbenzene	<0.00199	0.0996	0.0955	96	0.0883	87	71-129	8	35	mg/kg	01.17.17 10:14	
m_p-Xylenes	<0.00199	0.199	0.182	91	0.169	84	70-135	7	35	mg/kg	01.17.17 10:14	
o-Xylene	<0.00299	0.0996	0.0906	91	0.0824	82	71-133	9	35	mg/kg	01.17.17 10:14	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	116		117		80-120	%	01.17.17 10:14
4-Bromofluorobenzene	108		110		80-120	%	01.17.17 10:14

COG Operating LLC

Pintail 3 Federal #001H

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B

Seq Number: 3008017 Matrix: Soil Date Prep: 01.18.17

Parent Sample Id: 544228-016 MS Sample Id: 544228-016 S MSD Sample Id: 544228-016 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00281	0.187	0.180	96	0.157	83	70-130	14	35	mg/kg	01.18.17 09:46	
Toluene	0.256	0.187	0.503	132	0.396	74	70-130	24	35	mg/kg	01.18.17 09:46	X
Ethylbenzene	0.263	0.187	0.551	154	0.438	92	71-129	23	35	mg/kg	01.18.17 09:46	X
m_p-Xylenes	1.38	0.375	3.29	509	2.64	332	70-135	22	35	mg/kg	01.18.17 09:46	X
o-Xylene	0.502	0.187	1.20	373	0.910	215	71-133	27	35	mg/kg	01.18.17 09:46	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		117		80-120	%	01.18.17 09:46
4-Bromofluorobenzene	115		90		80-120	%	01.18.17 09:46

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B

Seq Number: 3007993 Matrix: Soil Date Prep: 01.19.17

Parent Sample Id: 544411-001 MS Sample Id: 544411-001 S MSD Sample Id: 544411-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00149	0.0990	0.0624	63	0.0589	59	70-130	6	35	mg/kg	01.19.17 12:47	X
Toluene	<0.00198	0.0990	0.0580	59	0.0571	57	70-130	2	35	mg/kg	01.19.17 12:47	X
Ethylbenzene	<0.00198	0.0990	0.0694	70	0.0683	68	71-129	2	35	mg/kg	01.19.17 12:47	X
m_p-Xylenes	<0.00198	0.198	0.134	68	0.132	66	70-135	2	35	mg/kg	01.19.17 12:47	X
o-Xylene	<0.00297	0.0990	0.0652	66	0.0653	65	71-133	0	35	mg/kg	01.19.17 12:47	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	118		118		80-120	%	01.19.17 12:47
4-Bromofluorobenzene	117		119		80-120	%	01.19.17 12:47

CHAIN OF CUSTODY

XENCO LABORATORIES
Setting the Standard since 1990
Stafford,Texas (281-240-4200)
Dallas Texas (214-902-0300)
San Antonio, Texas (210-509-3334)
Midland, Texas (432-704-5251)
www.xenco.com
Phoenix, Arizona (480-355-0900)

Xenco Quote # | Xenco Job # 544220

Client / Reporting Information

Company Name / Branch: COG Operating LLC
Company Address: 2407 Pecos Avenue, Artesia NM, 88210
Email: dneel2@concho.com Phone No: 432-215-2783
Project Contact: Dakota Neel
Samplers's Name Dakota Neel

Project Information

Project Name/Number: Pintail 3 Federal #001H
Project Location: 32.0657692,-103.6615829
Invoice To: COG Operating LLC, Robert McNeill, 600 W Illinois, Midland TX 79701, (432) 221-0388
PO Number:

Analytical Information

Matrix Codes

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

No.	Field ID / Point of Collection	Collection: Sample Depth	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Chloride	BTEX	TPH	Field Comments
1	T1	1'	1/10/2017	10:00 AM	S										X	X	X	
2	T1	2'	1/10/2017	10:00 AM	S										X	X	X	
3	T2	1'	1/10/2017	10:00 AM	S										X	X	X	
4	T2	2'	1/10/2017	10:00 AM	S										X	X	X	
5	T2	3'	1/10/2017	10:00 AM	S										X	X	X	
6	T2	4'	1/10/2017	10:00 AM	S										X	X	X	
7	T2	5'	1/10/2017	10:00 AM	S										X	X	X	
8	T2	6'	1/10/2017	10:00 AM	S										X	X	X	
9	T2	7'	1/10/2017	10:00 AM	S										X	X	X	
10																		
11																		

Turnaround Time (Business days)

- ☐ Same Day TAT
- ☐ 5 Day TAT
- ☐ Next Day EMERGENCY
- ☐ 7 Day TAT
- ☐ 2 Day EMERGENCY
- ☐ Contract TAT
- ☐ 3 Day EMERGENCY

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

Data Deliverable Information

- ☐ 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

Notes:

Please email results to:

rgrubbs@concho.com; rhaskell@concho.com; alieb@concho.com; dneel2@concho.com

FED-EX / UPS: Tracking #

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

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	DAKOTA NEEL	1-16-17	Sid Butler	2		TRAMER 1.17.17 950
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
5	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable	On Ice: X

Cooler Temp. Thermo. Corr. Factor

Temp: IR ID:R-8
CF:+ 0.1
Corrected Temp: 4.3 4.4

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 co for any losses or expenses incurred by the Client if such loses 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 terms will be enforced unless previously negotiated under a fully executed client contract.

CHAIN OF CUSTODY

XENCO LABORATORIES
Setting the Standard since 1990
Stafford,Texas (281-240-4200)
Dallas Texas (214-902-0300)
San Antonio, Texas (210-509-3334)
Midland, Texas (432-704-5251)
Phoenix, Arizona (480-355-0900)
www.xenco.com

Xenco Quote #

Xenco Job # 544220

Client / Reporting Information

Company Name / Branch: COG Operating LLC
Company Address: 2407 Pecos Avenue, Artesia NM, 88210
Email: dneel2@concho.com Phone No: 432-215-2783
Project Contact: Dakota Neel
Samplers's Name Dakota Neel

Project Information

Project Name/Number: Pintail 3 Federal #001H
Project Location: 32.0657692,-103.6615829
Invoice To: COG Operating LLC, Robert McNeill, 600 W Illinois, Midland TX 79701, (432) 221-0388
PO Number:

Analytical Information

Matrix Codes

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

No.	Field ID / Point of Collection	Collection: Sample Depth	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Chloride	BTEX	TPH	Field Comments
1	T3	1'	1/10/2017	10:30 AM	S										x	x	x	
2	T3	2'	1/10/2017	10:30 AM	S										x	x	x	
3	T3	3'	1/10/2017	10:30 AM	S										x	x	x	
4	T3	3.5'	1/10/2017	10:30 AM	S										x	x	x	
5	T4	1'	1/10/2017	10:30 AM	S										x	x	x	
6	T4	2'	1/10/2017	10:30 AM	S										x	x	x	
7	T4	3'	1/10/2017	10:30 AM	S										x	x	x	
8	T4	4'	1/10/2017	10:30 AM	S										x	x	x	
9	T4	6'	1/10/2017	10:30 AM	S										x	x	x	
10																		
11																		

Turnaround Time (Business days)

- ☐ Same Day TAT
- ☐ 5 Day TAT
- ☐ Next Day EMERGENCY
- ☐ 7 Day TAT
- ☐ 2 Day EMERGENCY
- ☐ Contract TAT
- ☐ 3 Day EMERGENCY

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

Data Deliverable Information

- ☐ 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

Notes:

Please email results to:

rgrubbs@concho.com; rhaskell@concho.com; alieb@concho.com; dneel2@concho.com

FED-EX / UPS: Tracking #

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

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1			1	2		2 Rramel 1.17.17 950
3	Relinquished by:	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
5	Relinquished by:	Date Time:	Received By: 5	Custody Seal #	Preserved where applicable	On Ice: X

Cooler Temp. Thermo. Corr. Factor
Temp: IR ID:R-8
CF:+ 0.1 4.3
Corrected Temp: 4.4

CHAIN OF CUSTODY

Page 3 Of 3

XENCO LABORATORIES

Setting the Standard since 1990

Stafford,Texas (281-240-4200)
Dallas Texas (214-902-0300)
San Antonio, Texas (210-509-3334)
Midland, Texas (432-704-5251)
Phoenix, Arizona (480-355-0900)
www.xenco.com

Xenco Quote #
Xenco Job # 544228

Client / Reporting Information

Company Name / Branch: COG Operating LLC
Company Address: 2407 Pecos Avenue, Artesia NM, 88210
Email: dneel2@concho.com Phone No: 432-215-2783
Project Contact: Dakota Neel
Samplers's Name Dakota Neel

Project Information

Project Name/Number: Pintail 3 Federal #001H
Project Location: 32.0657692,-103.6615829
Invoice To: COG Operating LLC, Robert McNeill, 600 W Illinois, Midland TX 79701, (432) 221-0388
PO Number:

Analytical Information

Matrix Codes

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

No.	Field ID / Point of Collection	Collection: Sample Depth	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Chrloride	BTEX	TPH	Field Comments
1	T5	1'	1/10/2017	11:00 AM	S										x	x	x	
2	T5	2'	1/10/2017	11:00 AM	S										x	x	x	
3	T5	3'	1/10/2017	11:00 AM	S										x	x	x	
4																		
5																		
6																		
7																		
8																		
9																		
10																		
11																		

Turnaround Time (Business days)

- ☐ Same Day TAT
- ☐ 5 Day TAT
- ☐ Next Day EMERGENCY
- ☐ 7 Day TAT
- ☐ 2 Day EMERGENCY
- ☐ Contract TAT
- ☐ 3 Day EMERGENCY

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

Data Deliverable Information

- ☐ 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

Notes:

Please email results to:

rgrubbs@concho.com; rhaskell@concho.com; alieb@concho.com; dneel2@concho.com

FED-EX / UPS: Tracking #

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

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1			1	2		2 ALRAMEE 1.17.17 950
3	Relinquished by:	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
5	Relinquished by:	Date Time:	Received By: 5	Custody Seal #	Preserved where applicable ☐	On Ice ☐

Cooler Temp. Thermo. Corr. Factor
Temp: IR ID:R-8
CF:+ 0.1 4.3 4.4
Corrected Temp:

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 any losses or expenses incurred by the Client if such loses 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 bu terms will be enforced unless previously negotiated under a fully executed client contract.

ORIGIN ID:HOBA (575) 392-7550
** MAIL SERVICES ETC, LLC
4008 N GRIMES
HOBBS, NM 88240
UNITED STATES US

SHIP DATE: 16JAN17
ACTWGT: 70.0 LB MAN
CAD: 0909328/CAFE2915
DIMS: 24x16x15 IN

BILL RECIPIENT

TO XENCO LABORATORIES
XENCO LABORATORIES
1211 W FLORIDA AVE

MIDLAND TX 79701

(432) 563-1800

INV:
PO:
REF:
DEPT:

FedEx Express

J151315081301uv

530C1/1997/3298

TRK# 0201 6606 3913 4904

TUE - 17 JAN 10:30A
PRIORITY OVERNIGHT

41 MAFA

79701
TX-US LBB

156148-434 RRD 04/16

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: COG Operating LLC

Date/ Time Received: 01/16/2017 12:00:00 PM

Work Order #: 544228

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	4.4
#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)?	**No**
#21 VOC samples have zero headspace (less than 1/4 inch bubble)?	**N/A**
#22 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	**N/A**
#23 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	**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: 01/17/2017

Checklist reviewed by:

Date: