SITE INFORMATION

Report Type: Work Plan 1RP-4597

General Site Information:						
Site:	**Miller B #3**					
Company:	**COG Operating LLC**					
Section, Township and Range	**Unit A**	**Sec. 23**	**T 17S**	**R 32E**		
Lease Number:	**API No. 30-025-31054**					
County:	**Lea County**					
GPS:	**32.8245583º N**			**103.7327499º W**		
Surface Owner:	Federal					
Mineral Owner:						
Directions:	From the intersection of CR 126 (Maljamar Rd) and Mescalero Rd, travel east on Mescalero for 1.9 mi, turn south onto lease road and continue for 0.90 mi, turn west onto lease road for 0.10 mi to location.					

Release Data:	
Date Released:	2/1/2017
Type Release:	Oil & Produced Water
Source of Contamination:	Flowline
Fluid Released:	7 bbls oil & 3 bbls water
Fluids Recovered:	6 bbls oil & 1 bbl water

Official Communication:			
Name:	Rebecca Haskell		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:	rhaskell@conchoresources.com		Ike.Tavarez@tetratech.com

Ranking Criteria		
Depth to Groundwater:	***Ranking Score***	***Site Data***
<50 ft	***20***	*48'*
50-99 ft	10	
>100 ft.	0	
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:	***20***	

Acceptable Soil RRAL (mg/kg)		
Benzene	***Total BTEX***	***TPH***
10	50	100

TETRA TECH

June 15, 2018

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., Miller B #3, Unit A, Section 23, Township 17 South, Range 32 East, Eddy County, New Mexico.
1RP-4597.

Ms. Yu:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC., (COG) to prepare a work plan for a release that occurred at Miller B #3, Unit A, Section 23, Township 17 South, Range 32 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.8245583º, W 103.7327499º. 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 February 1, 2017, and released approximately seven (7) barrels of oil and three (3) barrels of produced water due to a ruptured poly flowline. A vacuum truck was used to remove the freestanding fluids and recovered approximately six (6) barrels of oil and one (1) barrel of produced water. The release occurred in the pasture west of the pad and migrated across the reserve pit area and into the pasture west of the reserve pit. The release impacted an area measuring approximately 50' x 160'. The initial C-141 form is included in Appendix A.

Groundwater

No wells are listed within Section 23 in the New Mexico Office of the State Engineers database, the USGS National Water Information System or the Geology and Ground-Water Conditions in Southern Lea County, New Mexico (Report 6). The nearest well is listed on the USGS National Water Information System in Section 11, with a reported depth to groundwater of 48' below surface. According to the Chevron Texaco Groundwater Trend map, the average depth to groundwater in the area is between 50' and 75' 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 100 mg/kg.

Soil Assessment and Analytical Results

On February 22, 2017, COG personnel were onsite to evaluate and sample the release area. One (1) backhoe trench (T-1) was installed in the release area west of the reserve pit to a total depth of 12.0' below surface. Additionally, four (4) horizontal trenches (North, South, East, and West) were installed outside the release footprint to total depths of 2.0' 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.

Referring to Table 1, the area of trench (T-1) showed TPH, benzene, and total BTEX concentrations above the RRALs in the shallow soils. The area showed a TPH high of 34,400 mg/kg at surface, which declined with depth to 214 mg/kg at 4.0' and <15.0 mg/kg at 5.0' below surface. Additionally, benzene and total BTEX concentrations exceeded the RRALs from surface to 3.0' below surface; and showed concentrations of <0.00149 mg/kg (benzene) and 0.0179 mg/kg (BTEX) at 4.0' below surface.

Additionally, a chloride high of 6,480 mg/kg was detected at 1.0' below surface in the area of trench (T-1), which declined with depth to 245 mg/kg at 4.0' and showed a bottom trench concentration of 13.2 mg/kg at 12' below surface.

Referring to Table 1, none of the horizontal trenches (North, South, East, and West) showed TPH, benzene, or total BTEX concentrations above the RRALs. The area of trench (West) showed minimal chloride concentrations to the shallow soils, which spiked to 1,310 mg/kg at 2.0' below surface. The area of trench (East), which was installed along the eastern edge of the reserve pit, did show slightly elevated chlorides of 654 mg/kg at surface, which then declined with depth to below the 600 mg/kg threshold at 2.0' below surface. The remaining horizontal trenches (North and South) showed minimal chlorides to the shallow soils.

TETRA TECH

Work Plan

Based on the laboratory results and location of the release, which migrated across a closed reserve pit, COG proposes to remove the impacted soils in the area of trench (T-1) to an approximate depth of 4.0' below surface. The area of the horizontal trench (West) will be resampled to confirm the chloride concentration detected at 2.0' below surface. If confirmation samples show a deeper chloride impact, the area will be excavated to a depth of 3.0' to 4.0' below surface and capped with a 20-mil liner to prevent vertical migration of the deeper impact.

In addition, any hydrocarbon impact on top of the closed reserve pit will be excavated to address the surficial staining in the area. However, no further evaluation will be performed on the closed reserve pit due to potential chlorides present in the pit. The assessment (chlorides) of the pit would not representative to the impact encountered in the pasture.

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.

Conclusion

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.

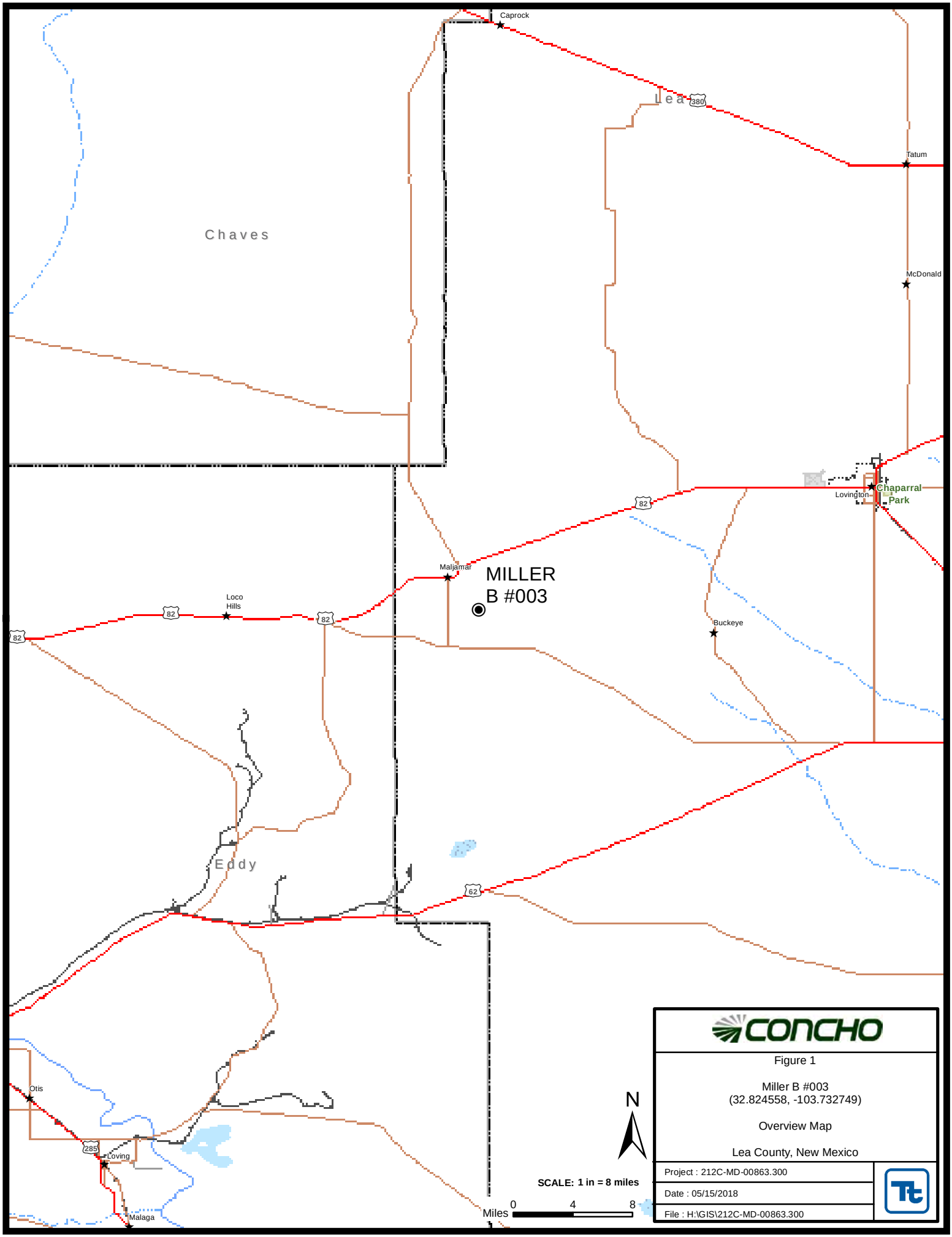
Respectfully submitted,
TETRA TECH

Clair Gonzales,
Project Manager

Ike Tavarez,
Senior Project Manager, P.G.

cc: Dakota Neel – COG
Rebecca Haskell – COG
Crystal Weaver - NMOCD
Shelly Tucker - BLM

Figures



CONCHO

Figure 1

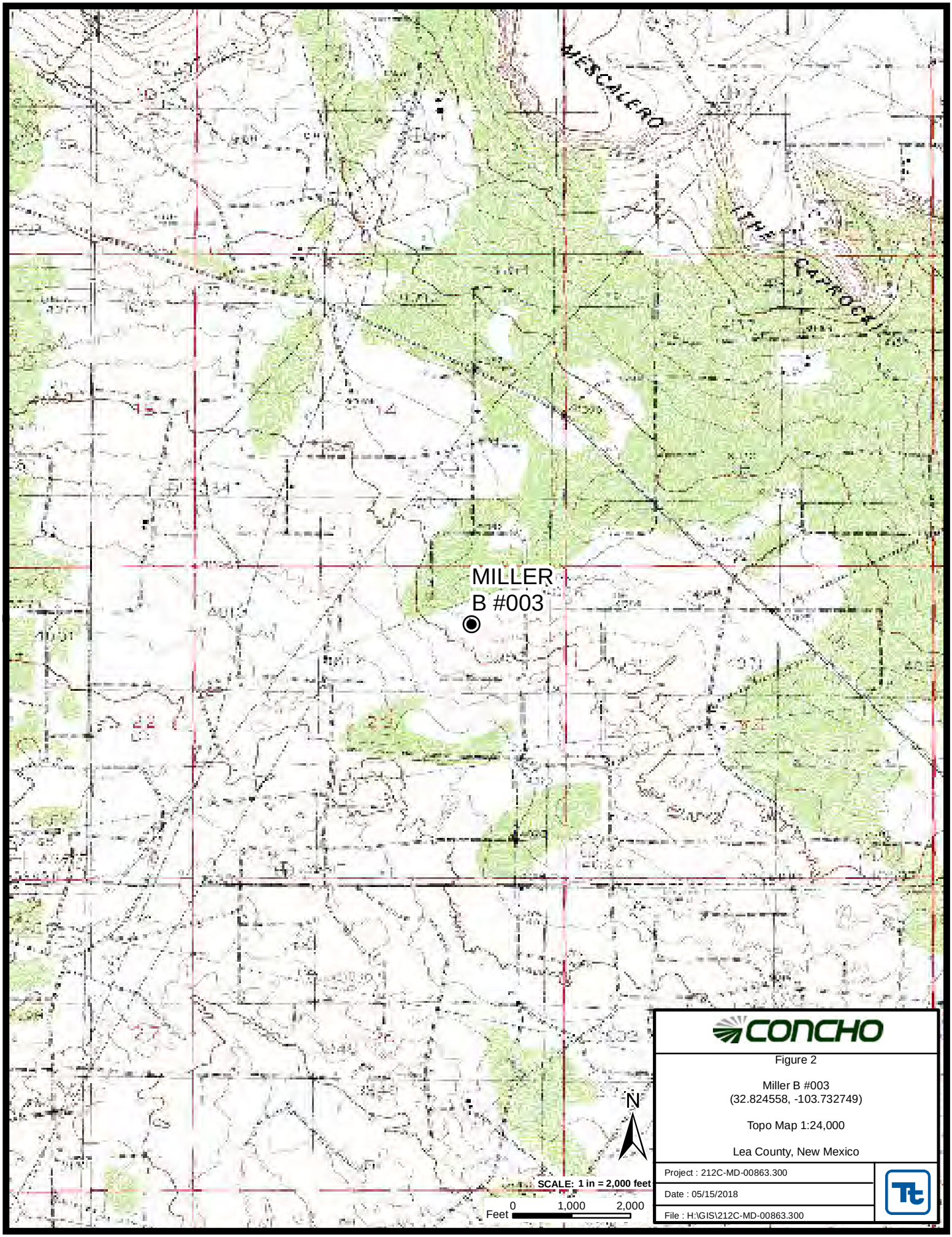
Miller B #003
(32.824558, -103.732749)

Overview Map

Lea County, New Mexico

Project : 212C-MD-00863.300	
Date : 05/15/2018	
File : H:\GIS\212C-MD-00863.300	

Mapped By: Isabel Marmolejo



CONCHO

Figure 2

Miller B #003
(32.824558, -103.732749)

Topo Map 1:24,000

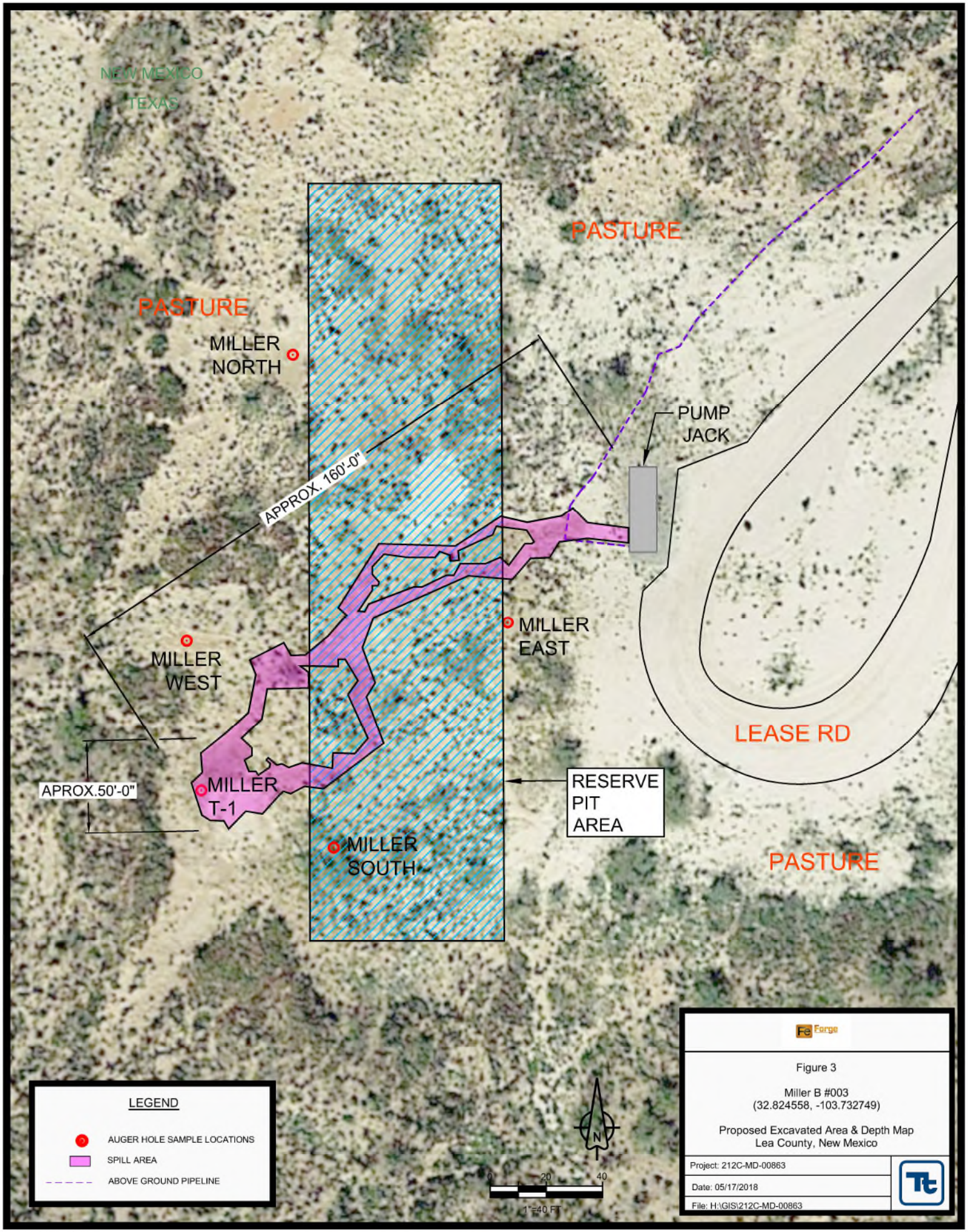
Lea County, New Mexico

Project : 212C-MD-00863.300

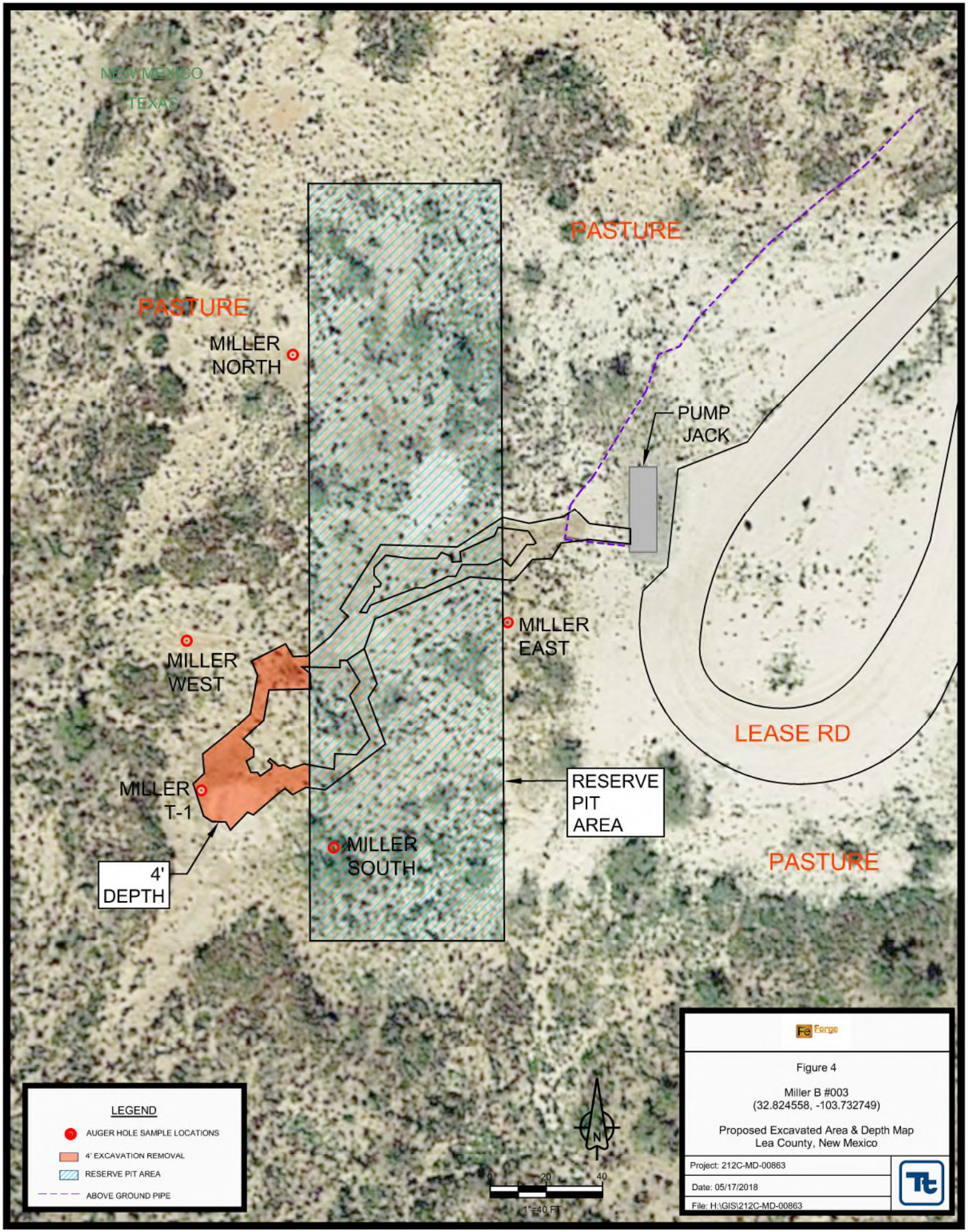
Date : 05/15/2018

File : H:\GIS\212C-MD-00863.300

Mapped By: Isabel Marmolejo



Drawn By: MISTI MORGAN


NEW MEXICO
TEXAS
PASTURE
PASTURE
MILLER NORTH
PUMP JACK
MILLER EAST
MILLER WEST
LEASE RD
MILLER T-1
RESERVE PIT AREA
MILLER SOUTH
4' DEPTH
PASTURE
LEGEND
AUGER HOLE SAMPLE LOCATIONS
4' EXCAVATION REMOVAL
RESERVE PIT AREA
ABOVE GROUND PIPE
N
0
20
40
1"=40 FT
Forge
Figure 4
Miller B #003
(32.824558, -103.732749)
Proposed Excavated Area & Depth Map
Lea County, New Mexico
Project: 212C-MD-00863
Date: 05/17/2018
File: H:\GIS\212C-MD-00863
Drawn By: MISTI MORGAN

Tables

Table 1
COG Operating LLC.
Miller B Federal #3
Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Soil Status		TPH (mg/kg)				Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	C6-C10	C10-C28	C28-C35	Total						
T-1	2/22/2017	Surface	X		7,880	23,800	2,270	**34,000**	**28.9**	168	105	165	**467**	505
	"	1	X		2,280	3,650	405	**6,340**	**26.9**	190	123	205	**545**	**6,480**
	"	2	X		5,370	8,230	815	**14,400**	**20.9**	137	89.6	151	**398**	**4,380**
	"	3	X		5,800	10,900	1,080	**17,800**	**28.8**	163	120	201	**513**	**3,740**
	"	4	X		29.4	168	16.8	**214**	<0.00149	<0.00198	0.00366	0.0142	0.0179	245
	"	5	X		<15.0	<15.0	<15.0	<15.0	<0.00150	<0.00200	<0.00200	<0.00200	<0.00150	19.5
	"	6	X		-	-	-	-	-	-	-	-	-	114
	"	8	X		-	-	-	-	-	-	-	-	-	191
	"	10	X		-	-	-	-	-	-	-	-	-	15.8
	"	12	X		-	-	-	-	-	-	-	-	-	13.2
North	2/22/2017	Surface	X		<15.0	<15.0	<15.0	<15.0	<0.00151	<0.00202	<0.00202	<0.00202	<0.00151	6.34
	"	1	X		<14.9	<14.9	<14.9	<14.9	<0.00728	<0.00971	<0.00971	<0.00971	<0.00728	<4.92
	"	2	X		<15.0	<15.0	<15.0	<15.0	<0.00148	<0.00197	<0.00197	<0.00197	<0.00148	<4.89
South	2/22/2017	Surface	X		<15.0	<15.0	<15.0	<15.0	<0.00150	<0.00200	<0.00200	<0.00200	<0.00150	7.04
	"	1	X		<15.0	<15.0	<15.0	<15.0	<0.00150	<0.00200	<0.00200	<0.00200	<0.00150	<4.96
	"	2	X		<15.0	<15.0	<15.0	<15.0	<0.00149	<0.00198	<0.00198	<0.00198	<0.00149	<4.90
East	2/22/2017	Surface	X		<15.0	19.9	<15.0	19.9	<0.00148	<0.00198	<0.00198	<0.00198	<0.00148	654
	"	1	X		<15.0	18.0	<15.0	18.0	<0.00152	<0.00202	<0.00202	<0.00202	<0.00152	627
	"	2	X		<15.0	<15.0	<15.0	<15.0	<0.00151	0.00223	<0.00201	0.00262	0.00485	446
West	2/22/2017	Surface	X		<15.0	<15.0	<15.0	<15.0	0.00152	0.00330	<0.00203	<0.00203	0.00482	6.94
	"	1	X		<15.0	<15.0	<15.0	<15.0	<0.00149	<0.00199	<0.00199	<0.00199	<0.00149	59.8
	"	2	X		<15.0	<15.0	<15.0	<15.0	0.00168	0.00423	0.00258	0.00316	0.0117	**1,310**

(-) Not Analyzed

Proposed Excavation Depths

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: Miller B #003		Facility Type:	Flowline

Surface Owner: Federal	Mineral Owner:	API No. 30-025-31054

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
A	23	17S	32E	990	North	1295	East	Lea

Latitude 32.8245583 **Longitude** -103.7327499

NATURE OF RELEASE

Type of Release: Oil and Produced Water	Volume of Release: 7 bbls Oil & 3 bbls PW	Volume Recovered: 6 bbls Oil & 1 bbls PW
Source of Release: Poly Flowline	Date and Hour of Occurrence: February 1, 2017 4:00 pm	Date and Hour of Discovery: February 1, 2017 4:00 pm
Was Immediate Notice Given? ☐ Yes ☒ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour:	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

Flowline rupture due to paraffin buildup. The section of flowline was replaced

Describe Area Affected and Cleanup Action Taken.*

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

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

Signature: 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: February 2, 2017	Phone: 432-683-7443		

* Attach Additional Sheets If Necessary

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
COG - Miller B Federal #3
Lea County, New Mexico

16 South 31 East

6	5	4	3	2 290	1
7	8	9	10	11	12 288
18	17	16	15	14 113 314	13 299
19	20	21	22	23	24
30	29	28	27	26	25
31 290	32	33	34	35	36

16 South 32 East

6	5	4	3 65	2 265	1 265
7	8	9	10	11	12 215
18	17	16 221	15	14	13 215
19 220	20	21 210	22	23 210	24
30	29	28	27	26 243	25
31	32	33	34	35	36 260

16 South 33 East

6	5 180	4 150	3 130	2 148	1 142
7	8 200	9	10 182	11	12 142
18	17 182	16 180	15 175	14 143	13 110
19	20	21	22	23 120	24
30 191	29	28 190	27 130	26 143	25 120
31 190	32 168	33	34 160	35	36

17 South 31 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	34 271	35	36

17 South 32 East

6	5	4 82 Maljamar	3 175	2 60	1 225
7	8	9	10 132	11 70 88 48	12 120
18	17	16	15	14	13
19	20	21	22	23 SITE	24
30 180 dry	29	28 81	27	26	25
31	32	33	34	35	36

17 South 33 East

6 90	5	4	3 155	2 158	1 150
7 167	8 173	9 161	10	11	12
18 188	17 180	16	15	14	13 165
19	20 190	21	22	23 115	24
30 69	29 60	28	27	26	25
31	32	33 120	34	35 155	36

18 South 31 East

6	5	4	3	2	1
7	8	9	10	11	12 400
18	17	16	15 98	14 317	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35 261	36

18 South 32 East

6	5	4 65	3	2	1
7 460 82	8	9	10	11	12
18	17	16 84	15	14	13
19	20 164	21	22 429	23	24
30	29	28	27	26	25
31	32	33	34 117	35	36

18 South 33 East

6	5	4	3 60	2	1
7	8 100	9	10 62	11 46	12 143 140
18	17 85	16	15	14 36	13 60
19 >140	20	21	22	23	24 195
30 35	29	28	27	26	25
31	32	33 177	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	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
L 03980		L	LE	2	2	2	01	17S	32E	620466	3637594*	270	200	70
L 03980 S		L	LE	4	4	4	02	17S	32E	618870	3636170*	255	179	76
L 03980 S2		L	LE	3	2	3	01	17S	32E	619470	3636581*	225	175	50
L 04019		L	LE	4	3	4	02	17S	32E	618468	3636166*	182		
L 04020		L	LE	3	3	4	02	17S	32E	618268	3636166*	200		
L 04021	R	L	LE	3	4	4	02	17S	32E	618670	3636170*	190		
L 04021 POD3		L	LE		3	4	03	17S	32E	616761	3636252*	247		
L 04021 S		L	LE	2	4	4	03	17S	32E	617262	3636354*	260		
L 13047 POD1		L	LE				11	17S	32E	618187	3635254*	140		
L 13050 POD1		L	LE	2	2	1	10	17S	32E	616463	3635945*	156	132	24
RA 08855			LE	4	1	1	10	17S	32E	616061	3635742*	158		
RA 09505			LE	2	2	1	10	17S	32E	616462	3635944	147		
RA 09505 S			LE	2	2	1	10	17S	32E	616463	3635945*	144		
RA 10175			LE		2	1	28	17S	32E	614814	3631005*	158		
RA 11684 POD1			LE	1	1	4	11	17S	32E	618216	3635124	275		
RA 11684 POD2			LE	1	1	4	11	17S	32E	618313	3635248	275		
RA 11684 POD3			LE	3	3	1	11	17S	32E	618262	3635371	275		
RA 11684 POD4			LE	1	3	2	11	17S	32E	618334	3635521	275		
RA 11684 POD5			LE	3	1	4	11	17S	32E	618353	3635047	275		
RA 11734 POD1			LE	2	2	1	10	17S	32E	616556	3635929	165		
RA 11911 POD1			LE	1	3	1	24	17S	32E	619192	3632296	35		
RA 12020 POD1			LE	2	2	1	28	17S	32E	614828	3630954	120	81	39
RA 12042 POD1			LE	2	2	1	28	17S	32E	614891	3631181	400		

Average Depth to Water: **153 feet**

Minimum Depth: **81 feet**

Maximum Depth: **200 feet**

Record Count: 23

PLSS Search:

Township: 17S **Range:** 32E

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

Appendix C

Certificate of Analysis Summary 547697

COG Operating LLC, Artesia, NM

Project Name: Miller B Federal #3

Project Id:
Contact: Aaron Lieb
Project Location:

Date Received in Lab: Thu Mar-02-17 10:20 am
Report Date: 09-MAR-17
Project Manager: Liz Givens

Analysis Requested													
	Lab Id:	547697-001		547697-002		547697-003		547697-004		547697-005		547697-006	
	Field Id:	T1- Surface		T1- 1'		T1- 2'		T1- 3'		T1- 4'		T1- 5'	
	Depth:			1 ft		2 ft		3 ft		4 ft		5 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Feb-22-17 10:00		Feb-22-17 10:00		Feb-22-17 10:00		Feb-22-17 10:00		Feb-22-17 10:00		Feb-22-17 10:00	
BTEX by EPA 8021B	***Extracted:***	Mar-06-17 07:20		Mar-06-17 07:20		Mar-06-17 07:20		Mar-06-17 07:20		Mar-06-17 07:20		Mar-03-17 16:25	
	Analyzed:	Mar-06-17 12:52		Mar-06-17 13:10		Mar-06-17 14:50		Mar-06-17 14:33		Mar-06-17 15:29		Mar-04-17 15:10	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		28.9	0.753	26.9	0.746	20.9	7.59	28.8	7.52	<0.00149	0.00149	<0.00150	0.00150
Toluene		168	1.00	190	0.994	137	10.1	163	10.0	<0.00198	0.00198	<0.00200	0.00200
Ethylbenzene		105	1.00	123	0.994	89.6	10.1	120	10.0	0.00366	0.00198	<0.00200	0.00200
m_p-Xylenes		115	1.00	149	0.994	104	10.1	135	10.0	0.00660	0.00198	<0.00200	0.00200
o-Xylene		49.7	1.51	56.1	1.49	46.8	15.2	66.1	15.0	0.00759	0.00297	<0.00299	0.00299
Total Xylenes		165	1.00	205	0.994	151	10.1	201	10.0	0.0142	0.00198	<0.00200	0.00200
Total BTEX		467	0.753	545	0.746	398	7.59	513	7.52	0.0179	0.00149	<0.00150	0.00150
BTEX by EPA 8021B	***Extracted:***											Mar-03-17 16:25	
	Analyzed:											Mar-04-17 15:10	
	Units/RL:											mg/L	RL
MTBE												<0.00998	0.00998
Inorganic Anions by EPA 300/300.1	***Extracted:***	Mar-06-17 12:15		Mar-06-17 12:15		Mar-06-17 12:15		Mar-06-17 12:15		Mar-06-17 12:15		Mar-06-17 12:15	
	Analyzed:	Mar-06-17 13:42		Mar-06-17 14:04		Mar-06-17 14:12		Mar-06-17 14:19		Mar-06-17 14:26		Mar-06-17 14:49	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		505	4.87	6480	49.0	4380	25.0	3740	24.6	245	4.95	19.5	4.88
TPH By SW8015 Mod	***Extracted:***	Mar-06-17 07:00		Mar-06-17 07:00		Mar-06-17 07:00		Mar-06-17 07:00		Mar-06-17 07:00		Mar-06-17 07:00	
	Analyzed:	Mar-06-17 09:47		Mar-06-17 10:07		Mar-06-17 10:28		Mar-06-17 10:48		Mar-06-17 11:09		Mar-06-17 11:30	
	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		7880	74.9	2280	74.8	5370	74.9	5800	74.9	29.4	15.0	<15.0	15.0
C10-C28 Diesel Range Hydrocarbons		23800	74.9	3650	74.8	8230	74.9	10900	74.9	168	15.0	<15.0	15.0
C28-C35 Oil Range Hydrocarbons		2270	74.9	405	74.8	815	74.9	1080	74.9	16.8	15.0	<15.0	15.0
Total TPH		34000	74.9	6340	74.8	14400	74.9	17800	74.9	214	15.0	<15.0	15.0

Brandi Ritcherson
Project Manager

Certificate of Analysis Summary 547697

COG Operating LLC, Artesia, NM

Project Name: Miller B Federal #3

Project Id:

Contact: Aaron Lieb

Project Location:

Date Received in Lab: Thu Mar-02-17 10:20 am

Report Date: 09-MAR-17

Project Manager: Liz Givens

Analysis Requested													
	Lab Id:	547697-007		547697-008		547697-009		547697-010		547697-011		547697-012	
	Field Id:	T1- 6'		T1- 8'		T1- 10'		T1- 12'		North-Surface		North-1'	
	Depth:	6 ft		8 ft		10 ft		12 ft				1 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Feb-22-17 10:00		Feb-22-17 10:00		Feb-22-17 10:00		Feb-22-17 10:00		Feb-22-17 11:00		Feb-22-17 11:00	
BTEX by EPA 8021B	***Extracted:***									Mar-03-17 16:25		Mar-03-17 16:25	
	Analyzed:									Mar-04-17 14:54		Mar-04-17 20:20	
	Units/RL:									mg/L	RL	mg/L	RL
MTBE										<0.0101	0.0101	<0.0485	0.0485
BTEX by EPA 8021B	***Extracted:***									Mar-03-17 16:25		Mar-03-17 16:25	
	Analyzed:									Mar-04-17 14:54		Mar-04-17 20:20	
	Units/RL:									mg/kg	RL	mg/kg	RL
Benzene										<0.00151	0.00151	<0.00728	0.00728
Toluene										<0.00202	0.00202	<0.00971	0.00971
Ethylbenzene										<0.00202	0.00202	<0.00971	0.00971
m_p-Xylenes										<0.00202	0.00202	<0.00971	0.00971
o-Xylene										<0.00302	0.00302	<0.0146	0.0146
Total Xylenes										<0.00202	0.00202	<0.00971	0.00971
Total BTEX										<0.00151	0.00151	<0.00728	0.00728
Inorganic Anions by EPA 300/300.1	***Extracted:***	Mar-06-17 12:15		Mar-06-17 12:15		Mar-06-17 12:15		Mar-06-17 12:15		Mar-06-17 12:15		Mar-06-17 12:15	
	Analyzed:	Mar-06-17 14:56		Mar-06-17 15:03		Mar-06-17 15:11		Mar-06-17 15:18		Mar-06-17 15:25		Mar-06-17 15:47	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		114	5.00	191	4.95	15.8	4.88	13.2	4.89	6.34	4.91	<4.92	4.92
TPH By SW8015 Mod	***Extracted:***									Mar-06-17 07:00		Mar-06-17 07:00	
	Analyzed:									Mar-06-17 12:35		Mar-06-17 12:56	
	Units/RL:									mg/kg	RL	mg/kg	RL
C6-C10 Gasoline Range Hydrocarbons										<15.0	15.0	<14.9	14.9
C10-C28 Diesel Range Hydrocarbons										<15.0	15.0	<14.9	14.9
C28-C35 Oil Range Hydrocarbons										<15.0	15.0	<14.9	14.9
Total TPH										<15.0	15.0	<14.9	14.9

Brandi Ritcherson
Project Manager

Certificate of Analysis Summary 547697

COG Operating LLC, Artesia, NM

Project Name: Miller B Federal #3

Project Id:
Contact: Aaron Lieb
Project Location:

Date Received in Lab: Thu Mar-02-17 10:20 am
Report Date: 09-MAR-17
Project Manager: Liz Givens

Analysis Requested													
	Lab Id:	547697-013		547697-014		547697-015		547697-016		547697-017		547697-018	
	Field Id:	North-2'		South-Surface		South-1'		South-2'		East-Surface		East-1'	
	Depth:	2 ft				1 ft		2 ft				1 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Feb-22-17 11:00		Feb-22-17 11:00		Feb-22-17 11:00		Feb-22-17 11:00		Feb-22-17 11:00		Feb-22-17 11:00	
BTEX by EPA 8021B	***Extracted:***	Mar-03-17 16:25		Mar-03-17 16:25		Mar-03-17 16:25		Mar-03-17 16:25		Mar-03-17 16:25		Mar-03-17 16:25	
	Analyzed:	Mar-04-17 15:27		Mar-04-17 16:14		Mar-04-17 15:43		Mar-04-17 17:54		Mar-04-17 15:59		Mar-04-17 18:10	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
MTBE		<0.00984	0.00984	<0.0100	0.0100	<0.00998	0.00998	<0.00992	0.00992	<0.00988	0.00988	<0.0101	0.0101
BTEX by EPA 8021B	***Extracted:***	Mar-03-17 16:25		Mar-03-17 16:25		Mar-03-17 16:25		Mar-03-17 16:25		Mar-03-17 16:25		Mar-03-17 16:25	
	Analyzed:	Mar-04-17 15:27		Mar-04-17 16:14		Mar-04-17 15:43		Mar-04-17 17:54		Mar-04-17 15:59		Mar-04-17 18:10	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00148	0.00148	<0.00150	0.00150	<0.00150	0.00150	<0.00149	0.00149	<0.00148	0.00148	<0.00152	0.00152
Toluene		<0.00197	0.00197	<0.00200	0.00200	<0.00200	0.00200	<0.00198	0.00198	<0.00198	0.00198	<0.00202	0.00202
Ethylbenzene		<0.00197	0.00197	<0.00200	0.00200	<0.00200	0.00200	<0.00198	0.00198	<0.00198	0.00198	<0.00202	0.00202
m_p-Xylenes		<0.00197	0.00197	<0.00200	0.00200	<0.00200	0.00200	<0.00198	0.00198	<0.00198	0.00198	<0.00202	0.00202
o-Xylene		<0.00295	0.00295	<0.00301	0.00301	<0.00299	0.00299	<0.00298	0.00298	<0.00296	0.00296	<0.00303	0.00303
Total Xylenes		<0.00197	0.00197	<0.00200	0.00200	<0.00200	0.00200	<0.00198	0.00198	<0.00198	0.00198	<0.00202	0.00202
Total BTEX		<0.00148	0.00148	<0.00150	0.00150	<0.00150	0.00150	<0.00149	0.00149	<0.00148	0.00148	<0.00152	0.00152
Inorganic Anions by EPA 300/300.1	***Extracted:***	Mar-06-17 12:15		Mar-06-17 12:15		Mar-06-17 12:15		Mar-06-17 12:15		Mar-06-17 12:15		Mar-06-17 12:15	
	Analyzed:	Mar-06-17 15:55		Mar-06-17 16:17		Mar-06-17 16:24		Mar-06-17 16:31		Mar-06-17 16:39		Mar-06-17 16:46	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		<4.89	4.89	7.04	4.88	<4.96	4.96	<4.90	4.90	654	4.87	627	4.95
TPH By SW8015 Mod	***Extracted:***	Mar-06-17 07:00		Mar-06-17 07:00		Mar-06-17 07:00		Mar-06-17 07:00		Mar-06-17 07:00		Mar-06-17 07:00	
	Analyzed:	Mar-06-17 13:17		Mar-06-17 13:37		Mar-06-17 14:39		Mar-06-17 14:59		Mar-06-17 15:21		Mar-06-17 15:40	
	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	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
C10-C28 Diesel Range Hydrocarbons		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	19.9	15.0	18.0	15.0
C28-C35 Oil Range Hydrocarbons		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total TPH		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	19.9	15.0	18.0	15.0

Brandi Ritcherson
Project Manager

Certificate of Analysis Summary 547697

COG Operating LLC, Artesia, NM

Project Name: Miller B Federal #3

Project Id:
Contact: Aaron Lieb
Project Location:

Date Received in Lab: Thu Mar-02-17 10:20 am
Report Date: 09-MAR-17
Project Manager: Liz Givens

Analysis Requested													
	Lab Id:	547697-019		547697-020		547697-021		547697-022					
	Field Id:	East-2'		West-Surface		West-1'		West-2'					
	Depth:	2 ft				1 ft		2 ft					
	Matrix:	SOIL		SOIL		SOIL		SOIL					
	Sampled:	Feb-22-17 11:00		Feb-22-17 11:30		Feb-22-17 11:30		Feb-22-17 11:30					
BTEX by EPA 8021B	***Extracted:***	Mar-03-17 16:25		Mar-03-17 16:25		Mar-03-17 16:25		Mar-03-17 16:25					
	Analyzed:	Mar-04-17 18:27		Mar-04-17 18:43		Mar-04-17 18:59		Mar-04-17 19:15					
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL				
MTBE		<0.0100	0.0100	<0.0101	0.0101	<0.00996	0.00996	<0.00990	0.00990				
BTEX by EPA 8021B	***Extracted:***	Mar-03-17 16:25		Mar-03-17 16:25		Mar-03-17 16:25		Mar-03-17 16:25					
	Analyzed:	Mar-04-17 18:27		Mar-04-17 18:43		Mar-04-17 18:59		Mar-04-17 19:15					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Benzene		<0.00151	0.00151	0.00152	0.00152	<0.00149	0.00149	0.00168	0.00149				
Toluene		0.00223	0.00201	0.00330	0.00203	<0.00199	0.00199	0.00423	0.00198				
Ethylbenzene		<0.00201	0.00201	<0.00203	0.00203	<0.00199	0.00199	0.00258	0.00198				
m_p-Xylenes		0.00262	0.00201	<0.00203	0.00203	<0.00199	0.00199	0.00316	0.00198				
o-Xylene		<0.00301	0.00301	<0.00304	0.00304	<0.00299	0.00299	<0.00297	0.00297				
Total Xylenes		0.00262	0.00201	<0.00203	0.00203	<0.00199	0.00199	0.00316	0.00198				
Total BTEX		0.00485	0.00151	0.00482	0.00152	<0.00149	0.00149	0.0117	0.00149				
Inorganic Anions by EPA 300/300.1	***Extracted:***	Mar-06-17 12:15		Mar-06-17 12:15		Mar-07-17 10:30		Mar-07-17 10:30					
	Analyzed:	Mar-06-17 16:53		Mar-06-17 17:01		Mar-07-17 11:13		Mar-07-17 11:35					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		446	4.98	6.94	4.89	59.8	4.92	1310	24.8				
TPH By SW8015 Mod	***Extracted:***	Mar-06-17 07:00		Mar-06-17 07:00		Mar-06-17 07:00		Mar-06-17 07:00					
	Analyzed:	Mar-06-17 16:00		Mar-06-17 16:21		Mar-06-17 16:41		Mar-06-17 17:01					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
C6-C10 Gasoline Range Hydrocarbons		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0				
C10-C28 Diesel Range Hydrocarbons		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0				
C28-C35 Oil Range Hydrocarbons		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0				
Total TPH		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0				

Brandi Ritcherson
Project Manager

Analytical Report 547697

for

COG Operating LLC

Project Manager: Aaron Lieb

Miller B Federal #3

09-MAR-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)

09-MAR-17

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

Reference: XENCO Report No(s): **547697**
Miller B Federal #3
Project Address:

Aaron Lieb:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 547697. 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. 547697 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,

Brandi Ritcherson
Project Manager

Sample Cross Reference 547697

COG Operating LLC, Artesia, NM

Miller B Federal #3

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
T1- Surface	S	02-22-17 10:00		547697-001
T1- 1'	S	02-22-17 10:00	- 1 ft	547697-002
T1- 2'	S	02-22-17 10:00	- 2 ft	547697-003
T1- 3'	S	02-22-17 10:00	- 3 ft	547697-004
T1- 4'	S	02-22-17 10:00	- 4 ft	547697-005
T1- 5'	S	02-22-17 10:00	- 5 ft	547697-006
T1- 6'	S	02-22-17 10:00	- 6 ft	547697-007
T1- 8'	S	02-22-17 10:00	- 8 ft	547697-008
T1- 10'	S	02-22-17 10:00	- 10 ft	547697-009
T1- 12'	S	02-22-17 10:00	- 12 ft	547697-010
North-Surface	S	02-22-17 11:00		547697-011
North-1'	S	02-22-17 11:00	- 1 ft	547697-012
North-2'	S	02-22-17 11:00	- 2 ft	547697-013
South-Surface	S	02-22-17 11:00		547697-014
South-1'	S	02-22-17 11:00	- 1 ft	547697-015
South-2'	S	02-22-17 11:00	- 2 ft	547697-016
East-Surface	S	02-22-17 11:00		547697-017
East-1'	S	02-22-17 11:00	- 1 ft	547697-018
East-2'	S	02-22-17 11:00	- 2 ft	547697-019
West-Surface	S	02-22-17 11:30		547697-020
West-1'	S	02-22-17 11:30	- 1 ft	547697-021
West-2'	S	02-22-17 11:30	- 2 ft	547697-022

CASE NARRATIVE

Client Name: COG Operating LLC

Project Name: Miller B Federal #3

Project ID:
Work Order Number(s): *547697*

Report Date: *09-MAR-17*
Date Received: *03/02/2017*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3011637 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.
Lab Sample ID 547697-012 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD).
MTBE recovered below QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference.
Samples in the analytical batch are: 547697-006, -011, -012, -013, -014, -015, -016, -017, -018, -019, -020, -021, -022.
The Laboratory Control Sample for MTBE is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3011716 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3011830 Inorganic Anions by EPA 300/300.1
Lab Sample ID 547697-011 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD).
Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 547697-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016, -017, -018, -019, -020.
The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Certificate of Analytical Results 547697

COG Operating LLC, Artesia, NM

Miller B Federal #3

Sample Id:	**T1- Surface**	Matrix:	Soil	Date Received:	03.02.17 10.20
Lab Sample Id:	547697-001	Date Collected:	02.22.17 10.00		

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	03.06.17 12.15	Basis:	Wet Weight
Seq Number:	3011830				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**505**	4.87	mg/kg	03.06.17 13.42		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.06.17 07.00	Basis:	Wet Weight
Seq Number:	3011763				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	**7880**	74.9	mg/kg	03.06.17 09.47		5
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	**23800**	74.9	mg/kg	03.06.17 09.47		5
C28-C35 Oil Range Hydrocarbons	PHCG2835	**2270**	74.9	mg/kg	03.06.17 09.47		5
Total TPH	PHC635	**34000**	74.9	mg/kg	03.06.17 09.47		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	123	%	70-135	03.06.17 09.47	
o-Terphenyl	84-15-1	97	%	70-135	03.06.17 09.47	

Certificate of Analytical Results 547697

COG Operating LLC, Artesia, NM

Miller B Federal #3

Sample Id:	**T1- Surface**	Matrix:	Soil	Date Received:	03.02.17 10.20
Lab Sample Id:	547697-001	Date Collected:	02.22.17 10.00		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	03.06.17 07.20	Basis:	Wet Weight
Seq Number:	3011716				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**28.9**	0.753	mg/kg	03.06.17 12.52		500
Toluene	108-88-3	**168**	1.00	mg/kg	03.06.17 12.52		500
Ethylbenzene	100-41-4	**105**	1.00	mg/kg	03.06.17 12.52		500
m_p-Xylenes	179601-23-1	**115**	1.00	mg/kg	03.06.17 12.52		500
o-Xylene	95-47-6	**49.7**	1.51	mg/kg	03.06.17 12.52		500
Total Xylenes	1330-20-7	**165**	1.00	mg/kg	03.06.17 12.52		500
Total BTEX		**467**	0.753	mg/kg	03.06.17 12.52		500

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	112	%	80-120	03.06.17 12.52	
4-Bromofluorobenzene	460-00-4	109	%	80-120	03.06.17 12.52	

COG Operating LLC, Artesia, NM

Miller B Federal #3

Sample Id:	**T1- 1'**	Matrix:	Soil	Date Received:	03.02.17 10.20
Lab Sample Id:	547697-002	Date Collected:	02.22.17 10.00	Sample Depth:	1 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	03.06.17 12.15	Basis:	Wet Weight
Seq Number:	3011830				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**6480**	49.0	mg/kg	03.06.17 14.04		10

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.06.17 07.00	Basis:	Wet Weight
Seq Number:	3011763				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	**2280**	74.8	mg/kg	03.06.17 10.07		5
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	**3650**	74.8	mg/kg	03.06.17 10.07		5
C28-C35 Oil Range Hydrocarbons	PHCG2835	**405**	74.8	mg/kg	03.06.17 10.07		5
Total TPH	PHC635	**6340**	74.8	mg/kg	03.06.17 10.07		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	03.06.17 10.07	
o-Terphenyl	84-15-1	98	%	70-135	03.06.17 10.07	

Certificate of Analytical Results 547697

COG Operating LLC, Artesia, NM

Miller B Federal #3

Sample Id:	**T1- 1'**	Matrix:	Soil	Date Received:	03.02.17 10.20
Lab Sample Id:	547697-002	Date Collected:	02.22.17 10.00	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	03.06.17 07.20	Basis:	Wet Weight
Seq Number:	3011716				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**26.9**	0.746	mg/kg	03.06.17 13.10		500
Toluene	108-88-3	**190**	0.994	mg/kg	03.06.17 13.10		500
Ethylbenzene	100-41-4	**123**	0.994	mg/kg	03.06.17 13.10		500
m_p-Xylenes	179601-23-1	**149**	0.994	mg/kg	03.06.17 13.10		500
o-Xylene	95-47-6	**56.1**	1.49	mg/kg	03.06.17 13.10		500
Total Xylenes	1330-20-7	**205**	0.994	mg/kg	03.06.17 13.10		500
Total BTEX		**545**	0.746	mg/kg	03.06.17 13.10		500

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	102	%	80-120	03.06.17 13.10	
4-Bromofluorobenzene	460-00-4	105	%	80-120	03.06.17 13.10	

Certificate of Analytical Results 547697

COG Operating LLC, Artesia, NM

Miller B Federal #3

Sample Id:	**T1- 2'**	Matrix:	Soil	Date Received:	03.02.17 10.20
Lab Sample Id:	547697-003	Date Collected:	02.22.17 10.00	Sample Depth:	2 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	03.06.17 12.15	Basis:	Wet Weight
Seq Number:	3011830				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**4380**	25.0	mg/kg	03.06.17 14.12		5

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.06.17 07.00	Basis:	Wet Weight
Seq Number:	3011763				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	**5370**	74.9	mg/kg	03.06.17 10.28		5
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	**8230**	74.9	mg/kg	03.06.17 10.28		5
C28-C35 Oil Range Hydrocarbons	PHCG2835	**815**	74.9	mg/kg	03.06.17 10.28		5
Total TPH	PHC635	**14400**	74.9	mg/kg	03.06.17 10.28		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	128	%	70-135	03.06.17 10.28	
o-Terphenyl	84-15-1	94	%	70-135	03.06.17 10.28	

Certificate of Analytical Results 547697

COG Operating LLC, Artesia, NM

Miller B Federal #3

Sample Id:	**T1- 2'**	Matrix:	Soil	Date Received:	03.02.17 10.20
Lab Sample Id:	547697-003	Date Collected:	02.22.17 10.00	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	03.06.17 07.20	Basis:	Wet Weight
Seq Number:	3011716				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**20.9**	7.59	mg/kg	03.06.17 14.50		5000
Toluene	108-88-3	**137**	10.1	mg/kg	03.06.17 14.50		5000
Ethylbenzene	100-41-4	**89.6**	10.1	mg/kg	03.06.17 14.50		5000
m_p-Xylenes	179601-23-1	**104**	10.1	mg/kg	03.06.17 14.50		5000
o-Xylene	95-47-6	**46.8**	15.2	mg/kg	03.06.17 14.50		5000
Total Xylenes	1330-20-7	**151**	10.1	mg/kg	03.06.17 14.50		5000
Total BTEX		**398**	7.59	mg/kg	03.06.17 14.50		5000

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	89	%	80-120	03.06.17 14.50	
1,4-Difluorobenzene	540-36-3	103	%	80-120	03.06.17 14.50	

COG Operating LLC, Artesia, NM

Miller B Federal #3

Sample Id:	**T1- 3'**	Matrix:	Soil	Date Received:	03.02.17 10.20
Lab Sample Id:	547697-004	Date Collected:	02.22.17 10.00	Sample Depth:	3 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	03.06.17 12.15	Basis:	Wet Weight
Seq Number:	3011830				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**3740**	24.6	mg/kg	03.06.17 14.19		5

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.06.17 07.00	Basis:	Wet Weight
Seq Number:	3011763				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	**5800**	74.9	mg/kg	03.06.17 10.48		5
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	**10900**	74.9	mg/kg	03.06.17 10.48		5
C28-C35 Oil Range Hydrocarbons	PHCG2835	**1080**	74.9	mg/kg	03.06.17 10.48		5
Total TPH	PHC635	**17800**	74.9	mg/kg	03.06.17 10.48		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	119	%	70-135	03.06.17 10.48	
o-Terphenyl	84-15-1	95	%	70-135	03.06.17 10.48	

Certificate of Analytical Results 547697

COG Operating LLC, Artesia, NM

Miller B Federal #3

Sample Id:	**T1- 3'**	Matrix:	Soil	Date Received:	03.02.17 10.20
Lab Sample Id:	547697-004	Date Collected:	02.22.17 10.00	Sample Depth:	3 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	03.06.17 07.20	Basis:	Wet Weight
Seq Number:	3011716				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**28.8**	7.52	mg/kg	03.06.17 14.33		5000
Toluene	108-88-3	**163**	10.0	mg/kg	03.06.17 14.33		5000
Ethylbenzene	100-41-4	**120**	10.0	mg/kg	03.06.17 14.33		5000
m_p-Xylenes	179601-23-1	**135**	10.0	mg/kg	03.06.17 14.33		5000
o-Xylene	95-47-6	**66.1**	15.0	mg/kg	03.06.17 14.33		5000
Total Xylenes	1330-20-7	**201**	10.0	mg/kg	03.06.17 14.33		5000
Total BTEX		**513**	7.52	mg/kg	03.06.17 14.33		5000

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	92	%	80-120	03.06.17 14.33	
4-Bromofluorobenzene	460-00-4	94	%	80-120	03.06.17 14.33	

Certificate of Analytical Results 547697

COG Operating LLC, Artesia, NM

Miller B Federal #3

Sample Id:	**T1- 4'**	Matrix:	Soil	Date Received:	03.02.17 10.20
Lab Sample Id:	547697-005	Date Collected:	02.22.17 10.00	Sample Depth:	4 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	03.06.17 12.15	Basis:	Wet Weight
Seq Number:	3011830				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**245**	4.95	mg/kg	03.06.17 14.26		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.06.17 07.00	Basis:	Wet Weight
Seq Number:	3011763				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	**29.4**	15.0	mg/kg	03.06.17 11.09		1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	**168**	15.0	mg/kg	03.06.17 11.09		1
C28-C35 Oil Range Hydrocarbons	PHCG2835	**16.8**	15.0	mg/kg	03.06.17 11.09		1
Total TPH	PHC635	**214**	15.0	mg/kg	03.06.17 11.09		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	03.06.17 11.09	
o-Terphenyl	84-15-1	98	%	70-135	03.06.17 11.09	

Certificate of Analytical Results 547697

COG Operating LLC, Artesia, NM

Miller B Federal #3

Sample Id:	**T1- 4'**	Matrix:	Soil	Date Received:	03.02.17 10.20
Lab Sample Id:	547697-005	Date Collected:	02.22.17 10.00	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	03.06.17 07.20	Basis:	Wet Weight
Seq Number:	3011716				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00149	0.00149	mg/kg	03.06.17 15.29	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	03.06.17 15.29	U	1
Ethylbenzene	100-41-4	**0.00366**	0.00198	mg/kg	03.06.17 15.29		1
m_p-Xylenes	179601-23-1	**0.00660**	0.00198	mg/kg	03.06.17 15.29		1
o-Xylene	95-47-6	**0.00759**	0.00297	mg/kg	03.06.17 15.29		1
Total Xylenes	1330-20-7	**0.0142**	0.00198	mg/kg	03.06.17 15.29		1
Total BTEX		**0.0179**	0.00149	mg/kg	03.06.17 15.29		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	93	%	80-120	03.06.17 15.29	
1,4-Difluorobenzene	540-36-3	102	%	80-120	03.06.17 15.29	

COG Operating LLC, Artesia, NM

Miller B Federal #3

Sample Id:	**T1- 5'**	Matrix:	Soil	Date Received:	03.02.17 10.20
Lab Sample Id:	547697-006	Date Collected:	02.22.17 10.00	Sample Depth:	5 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	03.06.17 12.15	Basis:	Wet Weight
Seq Number:	3011830				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**19.5**	4.88	mg/kg	03.06.17 14.49		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.06.17 07.00	Basis:	Wet Weight
Seq Number:	3011763				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	03.06.17 11.30	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	<15.0	15.0	mg/kg	03.06.17 11.30	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<15.0	15.0	mg/kg	03.06.17 11.30	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	03.06.17 11.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	03.06.17 11.30	
o-Terphenyl	84-15-1	91	%	70-135	03.06.17 11.30	

Certificate of Analytical Results 547697

COG Operating LLC, Artesia, NM

Miller B Federal #3

Sample Id:	**T1- 5'**	Matrix:	Soil	Date Received:	03.02.17 10.20
Lab Sample Id:	547697-006	Date Collected:	02.22.17 10.00	Sample Depth:	5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	03.03.17 16.25	Basis:	Wet Weight
Seq Number:	3011637				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00150	0.00150	mg/kg	03.04.17 15.10	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.04.17 15.10	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.04.17 15.10	U	1
m_p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	03.04.17 15.10	U	1
o-Xylene	95-47-6	<0.00299	0.00299	mg/kg	03.04.17 15.10	U	1
MTBE	1634-04-4	<0.00998	0.00998	mg/L	03.04.17 15.10	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.04.17 15.10	U	1
Total BTEX		<0.00150	0.00150	mg/kg	03.04.17 15.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	95	%	80-120	03.04.17 15.10	
4-Bromofluorobenzene	460-00-4	85	%	80-120	03.04.17 15.10	

Certificate of Analytical Results 547697

COG Operating LLC, Artesia, NM

Miller B Federal #3

Sample Id:	**T1- 6'**	Matrix:	Soil	Date Received:	03.02.17 10.20
Lab Sample Id:	547697-007	Date Collected:	02.22.17 10.00	Sample Depth:	6 ft
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	03.06.17 12.15	Basis:	Wet Weight
Seq Number:	3011830				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**114**	5.00	mg/kg	03.06.17 14.56		1

Certificate of Analytical Results 547697

COG Operating LLC, Artesia, NM

Miller B Federal #3

Sample Id:	**T1- 8'**	Matrix:	Soil	Date Received:	03.02.17 10.20
Lab Sample Id:	547697-008	Date Collected:	02.22.17 10.00	Sample Depth:	8 ft
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	03.06.17 12.15	Basis:	Wet Weight
Seq Number:	3011830				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**191**	4.95	mg/kg	03.06.17 15.03		1

Certificate of Analytical Results 547697

COG Operating LLC, Artesia, NM

Miller B Federal #3

Sample Id:	**T1- 10'**	Matrix:	Soil	Date Received:	03.02.17 10.20
Lab Sample Id:	547697-009	Date Collected:	02.22.17 10.00	Sample Depth:	10 ft
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	03.06.17 12.15	Basis:	Wet Weight
Seq Number:	3011830				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**15.8**	4.88	mg/kg	03.06.17 15.11		1

Certificate of Analytical Results 547697

COG Operating LLC, Artesia, NM

Miller B Federal #3

Sample Id:	**T1- 12'**	Matrix:	Soil	Date Received:	03.02.17 10.20
Lab Sample Id:	547697-010	Date Collected:	02.22.17 10.00	Sample Depth:	12 ft
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	03.06.17 12.15	Basis:	Wet Weight
Seq Number:	3011830				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**13.2**	4.89	mg/kg	03.06.17 15.18		1

Certificate of Analytical Results 547697

COG Operating LLC, Artesia, NM

Miller B Federal #3

Sample Id:	**North-Surface**	Matrix:	Soil	Date Received:	03.02.17 10.20
Lab Sample Id:	547697-011	Date Collected:	02.22.17 11.00		

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	03.06.17 12.15	Basis:	Wet Weight
Seq Number:	3011830				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**6.34**	4.91	mg/kg	03.06.17 15.25		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.06.17 07.00	Basis:	Wet Weight
Seq Number:	3011763				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	03.06.17 12.35	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	<15.0	15.0	mg/kg	03.06.17 12.35	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<15.0	15.0	mg/kg	03.06.17 12.35	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	03.06.17 12.35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	03.06.17 12.35	
o-Terphenyl	84-15-1	95	%	70-135	03.06.17 12.35	

Certificate of Analytical Results 547697

COG Operating LLC, Artesia, NM

Miller B Federal #3

Sample Id:	**North-Surface**	Matrix:	Soil	Date Received:	03.02.17 10.20
Lab Sample Id:	547697-011	Date Collected:	02.22.17 11.00		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	03.03.17 16.25	Basis:	Wet Weight
Seq Number:	3011637				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00151	0.00151	mg/kg	03.04.17 14.54	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	03.04.17 14.54	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	03.04.17 14.54	U	1
m_p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	03.04.17 14.54	U	1
o-Xylene	95-47-6	<0.00302	0.00302	mg/kg	03.04.17 14.54	U	1
MTBE	1634-04-4	<0.0101	0.0101	mg/L	03.04.17 14.54	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	03.04.17 14.54	U	1
Total BTEX		<0.00151	0.00151	mg/kg	03.04.17 14.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	102	%	80-120	03.04.17 14.54	
1,4-Difluorobenzene	540-36-3	104	%	80-120	03.04.17 14.54	

COG Operating LLC, Artesia, NM

Miller B Federal #3

Sample Id:	**North-1'**	Matrix:	Soil	Date Received:	03.02.17 10.20
Lab Sample Id:	547697-012	Date Collected:	02.22.17 11.00	Sample Depth:	1 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	03.06.17 12.15	Basis:	Wet Weight
Seq Number:	3011830				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.92	4.92	mg/kg	03.06.17 15.47	U	1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.06.17 07.00	Basis:	Wet Weight
Seq Number:	3011763				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<14.9	14.9	mg/kg	03.06.17 12.56	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	<14.9	14.9	mg/kg	03.06.17 12.56	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<14.9	14.9	mg/kg	03.06.17 12.56	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	03.06.17 12.56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	03.06.17 12.56	
o-Terphenyl	84-15-1	99	%	70-135	03.06.17 12.56	

Certificate of Analytical Results 547697

COG Operating LLC, Artesia, NM

Miller B Federal #3

Sample Id:	**North-1'**	Matrix:	Soil	Date Received:	03.02.17 10.20
Lab Sample Id:	547697-012	Date Collected:	02.22.17 11.00	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	03.03.17 16.25	Basis:	Wet Weight
Seq Number:	3011637				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00728	0.00728	mg/kg	03.04.17 20.20	U	1
Toluene	108-88-3	<0.00971	0.00971	mg/kg	03.04.17 20.20	U	1
Ethylbenzene	100-41-4	<0.00971	0.00971	mg/kg	03.04.17 20.20	U	1
m_p-Xylenes	179601-23-1	<0.00971	0.00971	mg/kg	03.04.17 20.20	U	1
o-Xylene	95-47-6	<0.0146	0.0146	mg/kg	03.04.17 20.20	U	1
MTBE	1634-04-4	<0.0485	0.0485	mg/L	03.04.17 20.20	U	1
Total Xylenes	1330-20-7	<0.00971	0.00971	mg/kg	03.04.17 20.20	U	1
Total BTEX		<0.00728	0.00728	mg/kg	03.04.17 20.20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	116	%	80-120	03.04.17 20.20	
1,4-Difluorobenzene	540-36-3	98	%	80-120	03.04.17 20.20	

COG Operating LLC, Artesia, NM

Miller B Federal #3

Sample Id:	**North-2'**	Matrix:	Soil	Date Received:	03.02.17 10.20
Lab Sample Id:	547697-013	Date Collected:	02.22.17 11.00	Sample Depth:	2 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	03.06.17 12.15	Basis:	Wet Weight
Seq Number:	3011830				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.89	4.89	mg/kg	03.06.17 15.55	U	1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.06.17 07.00	Basis:	Wet Weight
Seq Number:	3011763				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	03.06.17 13.17	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	<15.0	15.0	mg/kg	03.06.17 13.17	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<15.0	15.0	mg/kg	03.06.17 13.17	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	03.06.17 13.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	83	%	70-135	03.06.17 13.17	
o-Terphenyl	84-15-1	82	%	70-135	03.06.17 13.17	

Certificate of Analytical Results 547697

COG Operating LLC, Artesia, NM

Miller B Federal #3

Sample Id:	**North-2'**	Matrix:	Soil	Date Received:	03.02.17 10.20
Lab Sample Id:	547697-013	Date Collected:	02.22.17 11.00	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	03.03.17 16.25	Basis:	Wet Weight
Seq Number:	3011637				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00148	0.00148	mg/kg	03.04.17 15.27	U	1
Toluene	108-88-3	<0.00197	0.00197	mg/kg	03.04.17 15.27	U	1
Ethylbenzene	100-41-4	<0.00197	0.00197	mg/kg	03.04.17 15.27	U	1
m_p-Xylenes	179601-23-1	<0.00197	0.00197	mg/kg	03.04.17 15.27	U	1
o-Xylene	95-47-6	<0.00295	0.00295	mg/kg	03.04.17 15.27	U	1
MTBE	1634-04-4	<0.00984	0.00984	mg/L	03.04.17 15.27	U	1
Total Xylenes	1330-20-7	<0.00197	0.00197	mg/kg	03.04.17 15.27	U	1
Total BTEX		<0.00148	0.00148	mg/kg	03.04.17 15.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	92	%	80-120	03.04.17 15.27	
1,4-Difluorobenzene	540-36-3	103	%	80-120	03.04.17 15.27	

Certificate of Analytical Results 547697

COG Operating LLC, Artesia, NM

Miller B Federal #3

Sample Id:	**South-Surface**	Matrix:	Soil	Date Received:	03.02.17 10.20
Lab Sample Id:	547697-014	Date Collected:	02.22.17 11.00		

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	03.06.17 12.15	Basis:	Wet Weight
Seq Number:	3011830				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**7.04**	4.88	mg/kg	03.06.17 16.17		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.06.17 07.00	Basis:	Wet Weight
Seq Number:	3011763				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	03.06.17 13.37	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	<15.0	15.0	mg/kg	03.06.17 13.37	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<15.0	15.0	mg/kg	03.06.17 13.37	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	03.06.17 13.37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	03.06.17 13.37	
o-Terphenyl	84-15-1	98	%	70-135	03.06.17 13.37	

Certificate of Analytical Results 547697

COG Operating LLC, Artesia, NM

Miller B Federal #3

Sample Id:	**South-Surface**	Matrix:	Soil	Date Received:	03.02.17 10.20
Lab Sample Id:	547697-014	Date Collected:	02.22.17 11.00		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	03.03.17 16.25	Basis:	Wet Weight
Seq Number:	3011637				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00150	0.00150	mg/kg	03.04.17 16.14	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.04.17 16.14	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.04.17 16.14	U	1
m_p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	03.04.17 16.14	U	1
o-Xylene	95-47-6	<0.00301	0.00301	mg/kg	03.04.17 16.14	U	1
MTBE	1634-04-4	<0.0100	0.0100	mg/L	03.04.17 16.14	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.04.17 16.14	U	1
Total BTEX		<0.00150	0.00150	mg/kg	03.04.17 16.14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	85	%	80-120	03.04.17 16.14	
1,4-Difluorobenzene	540-36-3	106	%	80-120	03.04.17 16.14	

COG Operating LLC, Artesia, NM

Miller B Federal #3

Sample Id:	**South-1'**	Matrix:	Soil	Date Received:	03.02.17 10.20
Lab Sample Id:	547697-015	Date Collected:	02.22.17 11.00	Sample Depth:	1 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	03.06.17 12.15	Basis:	Wet Weight
Seq Number:	3011830				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.96	4.96	mg/kg	03.06.17 16.24	U	1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.06.17 07.00	Basis:	Wet Weight
Seq Number:	3011763				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	03.06.17 14.39	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	<15.0	15.0	mg/kg	03.06.17 14.39	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<15.0	15.0	mg/kg	03.06.17 14.39	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	03.06.17 14.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	03.06.17 14.39	
o-Terphenyl	84-15-1	98	%	70-135	03.06.17 14.39	

Certificate of Analytical Results 547697

COG Operating LLC, Artesia, NM

Miller B Federal #3

Sample Id:	**South-1'**	Matrix:	Soil	Date Received:	03.02.17 10.20
Lab Sample Id:	547697-015	Date Collected:	02.22.17 11.00	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	03.03.17 16.25	Basis:	Wet Weight
Seq Number:	3011637				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00150	0.00150	mg/kg	03.04.17 15.43	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.04.17 15.43	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.04.17 15.43	U	1
m_p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	03.04.17 15.43	U	1
o-Xylene	95-47-6	<0.00299	0.00299	mg/kg	03.04.17 15.43	U	1
MTBE	1634-04-4	<0.00998	0.00998	mg/L	03.04.17 15.43	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.04.17 15.43	U	1
Total BTEX		<0.00150	0.00150	mg/kg	03.04.17 15.43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	95	%	80-120	03.04.17 15.43	
1,4-Difluorobenzene	540-36-3	103	%	80-120	03.04.17 15.43	

Certificate of Analytical Results 547697

COG Operating LLC, Artesia, NM

Miller B Federal #3

Sample Id:	**South-2'**	Matrix:	Soil	Date Received:	03.02.17 10.20
Lab Sample Id:	547697-016	Date Collected:	02.22.17 11.00	Sample Depth:	2 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	03.06.17 12.15	Basis:	Wet Weight
Seq Number:	3011830				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.90	4.90	mg/kg	03.06.17 16.31	U	1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.06.17 07.00	Basis:	Wet Weight
Seq Number:	3011763				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	03.06.17 14.59	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	<15.0	15.0	mg/kg	03.06.17 14.59	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<15.0	15.0	mg/kg	03.06.17 14.59	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	03.06.17 14.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	03.06.17 14.59	
o-Terphenyl	84-15-1	96	%	70-135	03.06.17 14.59	

Certificate of Analytical Results 547697

COG Operating LLC, Artesia, NM

Miller B Federal #3

Sample Id:	**South-2'**	Matrix:	Soil	Date Received:	03.02.17 10.20
Lab Sample Id:	547697-016	Date Collected:	02.22.17 11.00	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	03.03.17 16.25	Basis:	Wet Weight
Seq Number:	3011637				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00149	0.00149	mg/kg	03.04.17 17.54	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	03.04.17 17.54	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	03.04.17 17.54	U	1
m_p-Xylenes	179601-23-1	<0.00198	0.00198	mg/kg	03.04.17 17.54	U	1
o-Xylene	95-47-6	<0.00298	0.00298	mg/kg	03.04.17 17.54	U	1
MTBE	1634-04-4	<0.00992	0.00992	mg/L	03.04.17 17.54	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	03.04.17 17.54	U	1
Total BTEX		<0.00149	0.00149	mg/kg	03.04.17 17.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	111	%	80-120	03.04.17 17.54	
4-Bromofluorobenzene	460-00-4	102	%	80-120	03.04.17 17.54	

Certificate of Analytical Results 547697

COG Operating LLC, Artesia, NM

Miller B Federal #3

Sample Id:	**East-Surface**	Matrix:	Soil	Date Received:	03.02.17 10.20
Lab Sample Id:	547697-017	Date Collected:	02.22.17 11.00		

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	03.06.17 12.15	Basis:	Wet Weight
Seq Number:	3011830				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**654**	4.87	mg/kg	03.06.17 16.39		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.06.17 07.00	Basis:	Wet Weight
Seq Number:	3011763				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	03.06.17 15.21	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	**19.9**	15.0	mg/kg	03.06.17 15.21		1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<15.0	15.0	mg/kg	03.06.17 15.21	U	1
Total TPH	PHC635	**19.9**	15.0	mg/kg	03.06.17 15.21		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	03.06.17 15.21	
o-Terphenyl	84-15-1	98	%	70-135	03.06.17 15.21	

Certificate of Analytical Results 547697

COG Operating LLC, Artesia, NM

Miller B Federal #3

Sample Id:	**East-Surface**	Matrix:	Soil	Date Received:	03.02.17 10.20
Lab Sample Id:	547697-017	Date Collected:	02.22.17 11.00		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	03.03.17 16.25	Basis:	Wet Weight
Seq Number:	3011637				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00148	0.00148	mg/kg	03.04.17 15.59	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	03.04.17 15.59	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	03.04.17 15.59	U	1
m_p-Xylenes	179601-23-1	<0.00198	0.00198	mg/kg	03.04.17 15.59	U	1
o-Xylene	95-47-6	<0.00296	0.00296	mg/kg	03.04.17 15.59	U	1
MTBE	1634-04-4	<0.00988	0.00988	mg/L	03.04.17 15.59	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	03.04.17 15.59	U	1
Total BTEX		<0.00148	0.00148	mg/kg	03.04.17 15.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	97	%	80-120	03.04.17 15.59	
1,4-Difluorobenzene	540-36-3	111	%	80-120	03.04.17 15.59	

Certificate of Analytical Results 547697

COG Operating LLC, Artesia, NM

Miller B Federal #3

Sample Id:	**East-1'**	Matrix:	Soil	Date Received:	03.02.17 10.20
Lab Sample Id:	547697-018	Date Collected:	02.22.17 11.00	Sample Depth:	1 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	03.06.17 12.15	Basis:	Wet Weight
Seq Number:	3011830				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**627**	4.95	mg/kg	03.06.17 16.46		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.06.17 07.00	Basis:	Wet Weight
Seq Number:	3011763				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	03.06.17 15.40	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	**18.0**	15.0	mg/kg	03.06.17 15.40		1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<15.0	15.0	mg/kg	03.06.17 15.40	U	1
Total TPH	PHC635	**18.0**	15.0	mg/kg	03.06.17 15.40		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	03.06.17 15.40	
o-Terphenyl	84-15-1	114	%	70-135	03.06.17 15.40	

Certificate of Analytical Results 547697

COG Operating LLC, Artesia, NM

Miller B Federal #3

Sample Id:	**East-1'**	Matrix:	Soil	Date Received:	03.02.17 10.20
Lab Sample Id:	547697-018	Date Collected:	02.22.17 11.00	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	03.03.17 16.25	Basis:	Wet Weight
Seq Number:	3011637				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00152	0.00152	mg/kg	03.04.17 18.10	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	03.04.17 18.10	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	03.04.17 18.10	U	1
m_p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	03.04.17 18.10	U	1
o-Xylene	95-47-6	<0.00303	0.00303	mg/kg	03.04.17 18.10	U	1
MTBE	1634-04-4	<0.0101	0.0101	mg/L	03.04.17 18.10	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	03.04.17 18.10	U	1
Total BTEX		<0.00152	0.00152	mg/kg	03.04.17 18.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	95	%	80-120	03.04.17 18.10	
1,4-Difluorobenzene	540-36-3	118	%	80-120	03.04.17 18.10	

Certificate of Analytical Results 547697

COG Operating LLC, Artesia, NM

Miller B Federal #3

Sample Id:	**East-2'**	Matrix:	Soil	Date Received:	03.02.17 10.20
Lab Sample Id:	547697-019	Date Collected:	02.22.17 11.00	Sample Depth:	2 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	03.06.17 12.15	Basis:	Wet Weight
Seq Number:	3011830				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**446**	4.98	mg/kg	03.06.17 16.53		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.06.17 07.00	Basis:	Wet Weight
Seq Number:	3011763				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	03.06.17 16.00	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	<15.0	15.0	mg/kg	03.06.17 16.00	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<15.0	15.0	mg/kg	03.06.17 16.00	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	03.06.17 16.00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	03.06.17 16.00	
o-Terphenyl	84-15-1	95	%	70-135	03.06.17 16.00	

Certificate of Analytical Results 547697

COG Operating LLC, Artesia, NM

Miller B Federal #3

Sample Id:	**East-2'**	Matrix:	Soil	Date Received:	03.02.17 10.20
Lab Sample Id:	547697-019	Date Collected:	02.22.17 11.00	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	03.03.17 16.25	Basis:	Wet Weight
Seq Number:	3011637				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00151	0.00151	mg/kg	03.04.17 18.27	U	1
Toluene	108-88-3	**0.00223**	0.00201	mg/kg	03.04.17 18.27		1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	03.04.17 18.27	U	1
m_p-Xylenes	179601-23-1	**0.00262**	0.00201	mg/kg	03.04.17 18.27		1
o-Xylene	95-47-6	<0.00301	0.00301	mg/kg	03.04.17 18.27	U	1
MTBE	1634-04-4	<0.0100	0.0100	mg/L	03.04.17 18.27	U	1
Total Xylenes	1330-20-7	**0.00262**	0.00201	mg/kg	03.04.17 18.27		1
Total BTEX		**0.00485**	0.00151	mg/kg	03.04.17 18.27		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	86	%	80-120	03.04.17 18.27	
1,4-Difluorobenzene	540-36-3	111	%	80-120	03.04.17 18.27	

Certificate of Analytical Results 547697

COG Operating LLC, Artesia, NM

Miller B Federal #3

Sample Id:	**West-Surface**	Matrix:	Soil	Date Received:	03.02.17 10.20
Lab Sample Id:	547697-020	Date Collected:	02.22.17 11.30		

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	03.06.17 12.15	Basis:	Wet Weight
Seq Number:	3011830				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**6.94**	4.89	mg/kg	03.06.17 17.01		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.06.17 07.00	Basis:	Wet Weight
Seq Number:	3011763				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	03.06.17 16.21	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	<15.0	15.0	mg/kg	03.06.17 16.21	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<15.0	15.0	mg/kg	03.06.17 16.21	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	03.06.17 16.21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	03.06.17 16.21	
o-Terphenyl	84-15-1	104	%	70-135	03.06.17 16.21	

Certificate of Analytical Results 547697

COG Operating LLC, Artesia, NM

Miller B Federal #3

Sample Id:	**West-Surface**	Matrix:	Soil	Date Received:	03.02.17 10.20
Lab Sample Id:	547697-020	Date Collected:	02.22.17 11.30		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	03.03.17 16.25	Basis:	Wet Weight
Seq Number:	3011637				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**0.00152**	0.00152	mg/kg	03.04.17 18.43		1
Toluene	108-88-3	**0.00330**	0.00203	mg/kg	03.04.17 18.43		1
Ethylbenzene	100-41-4	<0.00203	0.00203	mg/kg	03.04.17 18.43	U	1
m_p-Xylenes	179601-23-1	<0.00203	0.00203	mg/kg	03.04.17 18.43	U	1
o-Xylene	95-47-6	<0.00304	0.00304	mg/kg	03.04.17 18.43	U	1
MTBE	1634-04-4	<0.0101	0.0101	mg/L	03.04.17 18.43	U	1
Total Xylenes	1330-20-7	<0.00203	0.00203	mg/kg	03.04.17 18.43	U	1
Total BTEX		**0.00482**	0.00152	mg/kg	03.04.17 18.43		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	109	%	80-120	03.04.17 18.43	
4-Bromofluorobenzene	460-00-4	86	%	80-120	03.04.17 18.43	

Certificate of Analytical Results 547697

COG Operating LLC, Artesia, NM

Miller B Federal #3

Sample Id:	**West-1'**	Matrix:	Soil	Date Received:	03.02.17 10.20
Lab Sample Id:	547697-021	Date Collected:	02.22.17 11.30	Sample Depth:	1 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	03.07.17 10.30	Basis:	Wet Weight
Seq Number:	3011838				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**59.8**	4.92	mg/kg	03.07.17 11.13		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.06.17 07.00	Basis:	Wet Weight
Seq Number:	3011763				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	03.06.17 16.41	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	<15.0	15.0	mg/kg	03.06.17 16.41	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<15.0	15.0	mg/kg	03.06.17 16.41	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	03.06.17 16.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	03.06.17 16.41	
o-Terphenyl	84-15-1	104	%	70-135	03.06.17 16.41	

Certificate of Analytical Results 547697

COG Operating LLC, Artesia, NM

Miller B Federal #3

Sample Id:	**West-1'**	Matrix:	Soil	Date Received:	03.02.17 10.20
Lab Sample Id:	547697-021	Date Collected:	02.22.17 11.30	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	03.03.17 16.25	Basis:	Wet Weight
Seq Number:	3011637				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00149	0.00149	mg/kg	03.04.17 18.59	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	03.04.17 18.59	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	03.04.17 18.59	U	1
m_p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	03.04.17 18.59	U	1
o-Xylene	95-47-6	<0.00299	0.00299	mg/kg	03.04.17 18.59	U	1
MTBE	1634-04-4	<0.00996	0.00996	mg/L	03.04.17 18.59	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	03.04.17 18.59	U	1
Total BTEX		<0.00149	0.00149	mg/kg	03.04.17 18.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	118	%	80-120	03.04.17 18.59	
4-Bromofluorobenzene	460-00-4	99	%	80-120	03.04.17 18.59	

Certificate of Analytical Results 547697

COG Operating LLC, Artesia, NM

Miller B Federal #3

Sample Id:	**West-2'**	Matrix:	Soil	Date Received:	03.02.17 10.20
Lab Sample Id:	547697-022	Date Collected:	02.22.17 11.30	Sample Depth:	2 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	03.07.17 10.30	Basis:	Wet Weight
Seq Number:	3011838				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1310**	24.8	mg/kg	03.07.17 11.35		5

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.06.17 07.00	Basis:	Wet Weight
Seq Number:	3011763				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	03.06.17 17.01	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	<15.0	15.0	mg/kg	03.06.17 17.01	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<15.0	15.0	mg/kg	03.06.17 17.01	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	03.06.17 17.01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	03.06.17 17.01	
o-Terphenyl	84-15-1	105	%	70-135	03.06.17 17.01	

Certificate of Analytical Results 547697

COG Operating LLC, Artesia, NM

Miller B Federal #3

Sample Id:	**West-2'**	Matrix:	Soil	Date Received:	03.02.17 10.20
Lab Sample Id:	547697-022	Date Collected:	02.22.17 11.30	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	03.03.17 16.25	Basis:	Wet Weight
Seq Number:	3011637				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**0.00168**	0.00149	mg/kg	03.04.17 19.15		1
Toluene	108-88-3	**0.00423**	0.00198	mg/kg	03.04.17 19.15		1
Ethylbenzene	100-41-4	**0.00258**	0.00198	mg/kg	03.04.17 19.15		1
m_p-Xylenes	179601-23-1	**0.00316**	0.00198	mg/kg	03.04.17 19.15		1
o-Xylene	95-47-6	<0.00297	0.00297	mg/kg	03.04.17 19.15	U	1
MTBE	1634-04-4	<0.00990	0.00990	mg/L	03.04.17 19.15	U	1
Total Xylenes	1330-20-7	**0.00316**	0.00198	mg/kg	03.04.17 19.15		1
Total BTEX		**0.0117**	0.00149	mg/kg	03.04.17 19.15		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	96	%	80-120	03.04.17 19.15	
1,4-Difluorobenzene	540-36-3	113	%	80-120	03.04.17 19.15	

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

Miller B Federal #3

Analytical Method: **Inorganic Anions by EPA 300/300.1** Prep Method: E300P
Seq Number: 3011830 Matrix: Solid Date Prep: 03.06.17
MB Sample Id: 721086-1-BLK LCS Sample Id: 721086-1-BKS LCSD Sample Id: 721086-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<4.97	249	240	96	244	98	90-110	2	20	mg/kg	03.06.17 13:28	

Analytical Method: **Inorganic Anions by EPA 300/300.1** Prep Method: E300P
Seq Number: 3011838 Matrix: Solid Date Prep: 03.07.17
MB Sample Id: 721114-1-BLK LCS Sample Id: 721114-1-BKS LCSD Sample Id: 721114-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<4.95	248	242	98	240	97	90-110	1	20	mg/kg	03.07.17 10:58	

Analytical Method: **Inorganic Anions by EPA 300/300.1** Prep Method: E300P
Seq Number: 3011830 Matrix: Soil Date Prep: 03.06.17
Parent Sample Id: 547697-001 MS Sample Id: 547697-001 S MSD Sample Id: 547697-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	505	244	719	88	711	84	90-110	1	20	mg/kg	03.06.17 13:50	X

Analytical Method: **Inorganic Anions by EPA 300/300.1** Prep Method: E300P
Seq Number: 3011830 Matrix: Soil Date Prep: 03.06.17
Parent Sample Id: 547697-011 MS Sample Id: 547697-011 S MSD Sample Id: 547697-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	6.34	246	244	97	247	98	90-110	1	20	mg/kg	03.06.17 15:33	

Analytical Method: **Inorganic Anions by EPA 300/300.1** Prep Method: E300P
Seq Number: 3011838 Matrix: Soil Date Prep: 03.07.17
Parent Sample Id: 547697-021 MS Sample Id: 547697-021 S MSD Sample Id: 547697-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	59.8	246	298	97	297	96	90-110	0	20	mg/kg	03.07.17 11:20	

Analytical Method: **Inorganic Anions by EPA 300/300.1** Prep Method: E300P
Seq Number: 3011838 Matrix: Soil Date Prep: 03.07.17
Parent Sample Id: 547782-017 MS Sample Id: 547782-017 S MSD Sample Id: 547782-017 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	568	250	781	85	781	85	90-110	0	20	mg/kg	03.07.17 13:03	X

QC Summary 547697

COG Operating LLC

Miller B Federal #3

Analytical Method: **TPH By SW8015 Mod** Prep Method: TX1005P
Seq Number: 3011763 Matrix: Solid Date Prep: 03.06.17
MB Sample Id: 721097-1-BLK LCS Sample Id: 721097-1-BKS LCSD Sample Id: 721097-1-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	1020	102	966	97	70-135	5	35	mg/kg	03.06.17 09:08	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	1000	100	950	95	70-135	5	35	mg/kg	03.06.17 09:08	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	115		108		104		70-135	%	03.06.17 09:08
o-Terphenyl	117		107		100		70-135	%	03.06.17 09:08

Analytical Method: **TPH By SW8015 Mod** Prep Method: TX1005P
Seq Number: 3011763 Matrix: Soil Date Prep: 03.06.17
Parent Sample Id: 547697-006 MS Sample Id: 547697-006 S MSD Sample Id: 547697-006 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	1050	105	939	94	70-135	11	35	mg/kg	03.06.17 11:51	
C10-C28 Diesel Range Hydrocarbons	<15.0	999	1040	104	954	95	70-135	9	35	mg/kg	03.06.17 11:51	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	108		101		70-135	%	03.06.17 11:51
o-Terphenyl	106		96		70-135	%	03.06.17 11:51

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3011637 Matrix: Solid Date Prep: 03.03.17
MB Sample Id: 721035-1-BLK LCS Sample Id: 721035-1-BKS LCSD Sample Id: 721035-1-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	0.0868	87	0.0842	83	70-130	3	35	mg/kg	03.04.17 01:48	
Toluene	<0.00201	0.100	0.0957	96	0.0904	90	70-130	6	35	mg/kg	03.04.17 01:48	
Ethylbenzene	<0.00201	0.100	0.0959	96	0.0918	91	71-129	4	35	mg/kg	03.04.17 01:48	
m_p-Xylenes	<0.00201	0.201	0.187	93	0.178	88	70-135	5	35	mg/kg	03.04.17 01:48	
o-Xylene	<0.00301	0.100	0.0962	96	0.0930	92	71-133	3	35	mg/kg	03.04.17 01:48	
MTBE	<0.0100	0.502	0.467	93	0.467	93	71-133	0	35	mg/L	03.04.17 01:48	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		107		99		80-120	%	03.04.17 01:48
4-Bromofluorobenzene	94		92		94		80-120	%	03.04.17 01:48

QC Summary 547697

COG Operating LLC

Miller B Federal #3

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3011716 | Matrix: Solid | Date Prep: 03.06.17
MB Sample Id: 721088-1-BLK | LCS Sample Id: 721088-1-BKS | LCSD Sample Id: 721088-1-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	0.101	0.0862	85	0.0872	86	70-130	1	35	mg/kg	03.06.17 07:56	
Toluene	<0.00201	0.101	0.0947	94	0.0962	95	70-130	2	35	mg/kg	03.06.17 07:56	
Ethylbenzene	<0.00201	0.101	0.0975	97	0.0967	96	71-129	1	35	mg/kg	03.06.17 07:56	
m_p-Xylenes	<0.00201	0.201	0.190	95	0.188	93	70-135	1	35	mg/kg	03.06.17 07:56	
o-Xylene	<0.00302	0.101	0.0998	99	0.100	99	71-133	0	35	mg/kg	03.06.17 07:56	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	111		106		104		80-120	%	03.06.17 07:56
4-Bromofluorobenzene	93		100		95		80-120	%	03.06.17 07:56

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3011716 | Matrix: Soil | Date Prep: 03.06.17
Parent Sample Id: 547700-012 | MS Sample Id: 547700-012 S | MSD Sample Id: 547700-012 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00150	0.100	0.0843	84	0.0834	84	70-130	1	35	mg/kg	03.06.17 08:29	
Toluene	<0.00200	0.100	0.0880	88	0.0896	90	70-130	2	35	mg/kg	03.06.17 08:29	
Ethylbenzene	<0.00200	0.100	0.0905	91	0.0882	88	71-129	3	35	mg/kg	03.06.17 08:29	
m_p-Xylenes	<0.00200	0.200	0.175	88	0.172	86	70-135	2	35	mg/kg	03.06.17 08:29	
o-Xylene	<0.00301	0.100	0.0887	89	0.0906	91	71-133	2	35	mg/kg	03.06.17 08:29	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	114		108		80-120	%	03.06.17 08:29
4-Bromofluorobenzene	104		107		80-120	%	03.06.17 08:29

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3011637 | Matrix: Soil | Date Prep: 03.03.17
Parent Sample Id: 547697-012 | MS Sample Id: 547697-012 S

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	Limits	Units	Analysis Date	Flag
Benzene	<0.00148	0.0988	0.0814	82	70-130	mg/kg	03.04.17 02:53	
Toluene	<0.00198	0.0988	0.0927	94	70-130	mg/kg	03.04.17 02:53	
Ethylbenzene	<0.00198	0.0988	0.109	110	71-129	mg/kg	03.04.17 02:53	
m_p-Xylenes	<0.00198	0.198	0.202	102	70-135	mg/kg	03.04.17 02:53	
o-Xylene	<0.00296	0.0988	0.118	119	71-133	mg/kg	03.04.17 02:53	
MTBE	<0.00988	0.494	<0.00988	0	71-133	mg/L	03.04.17 02:53	X

Surrogate	MS %Rec	MS Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		80-120	%	03.04.17 02:53
4-Bromofluorobenzene	105		80-120	%	03.04.17 02:53

CHAIN OF CUSTODY

Page 1 Of 3

XENCO LABORATORIES

Setting the Standard since 1990

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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 # 547697

Client / Reporting Information

Company Name / Branch: COG Operating LLC
Company Address: 2407 PECOS Avenue Artesia NM 88210
Email: alieb@concho.com dneel2@concho.com rhaskell@concho.com
Phone No:
Project Contact: Aaron Lieb
Samplers's Name- Aaron Lieb

Project Information

Project Name/Number: Miller B Federal #3
Project Location:
Invoice To: COG Operating LLC
Attn: Robert Mcneill
600 W. Illinois
Midland TX 79701
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	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	BTEX	TPH	Chloride	Field Comments
1	T1-Surface	SURF	2/22/17	10:00AM											X	X	X	
2	T1-1'	1	2/22/17	10:00AM											X	X	X	
3	T1-2'	2	2/22/17	10:00AM											X	X	X	
4	T1-3'	3	2/22/17	10:00AM											X	X	X	
5	T1-4'	4	2/22/17	10:00AM											X	X	X	
6	T1-5'	5	2/22/17	10:00AM											X	X	X	
7	T1-6'	6	2/22/17	10:00AM													X	
8	T1-8'	8	2/22/17	10:00AM													X	
9	T1-10'	10	2/22/17	10:00AM													X	
10	T1-12'	12	2/22/17	10:00AM													X	

Turnaround Time (Business days)

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

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:

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						
2	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
3		3/1/17 11:47	3 Did Butler	4	3/2/17 10:00	
5	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable	On Ice / Cooler Temp. / Thermo. Corr. Factor
			5			3.5 °C

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 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 b will be enforced unless previously negotiated under a fully executed client contract.

Temp: 1.7 IR ID:R-8
CF:+ 0.1
Corrected Temp: 1.8

ty for any e terms

Final 1.000

Page 53 of 57

CHAIN OF CUSTODY

Page 2 Of 3

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www.xenco.com
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Client / Reporting Information

Company Name / Branch: COG Operating LLC
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Phone No:
Project Contact: Aaron Lieb
Samplers's Name- Aaron Lieb

Project Information

Project Name/Number: Miller B Federal #3
Project Location:
Invoice To: COG Operating LLC, Attn: Robert Mcneill, 600 W. Illinois, Midland TX 79701
PO Number:

Analytical Information

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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	Date	Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	BTEX	TPH	Chloride	Field Comments
1	North- Surface	SURF	2/22/17	11:00Am											X	X	X	
2	North - 1'	1'	2/22/17	11:00Am											X	X	X	
3	North - 2'	2'	2/22/17	11:00 Am											X	X	X	
4	South - Surface	Surf	2/22/17	11:00 Am											X	X	X	
5	South - 1'	1'	2/22/17	11:00 Am											X	X	X	
6	South - 2'	2'	2/22/17	11:00 Am											X	X	X	
7	East - Surface	Surf	2/22/17	11:00Am											X	X	X	
8	East - 1'	1'	2/22/17	11:00 Am											X	X	X	
9	East - 2'	2'	2/22/17	11:00 Am											X	X	X	
10			~~2/22/17~~	~~11:00Am~~														

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- [ ] Same Day TAT
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Notes:

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	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1						
2	Relinquished by:	Date Time:	Received By: 11:47a 3-1-17	Relinquished By:	Date Time: 3/2/17 1020	Received By:
3		3/1/17 11:47				
4	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable	On Ice / Cooler Temp. / Thermo. Corr. Factor
5						3.5 C

Notice: Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the Client if such 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 but will be enforced unless previously negotiated under a fully executed client contract. terms

Temp: 1.7 R ID:R-8
CF:+ 0.1
Corrected Temp: 1.8

Final 1.000

Page 54 of 57

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Page 3 Of 3

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1	West - Surface	Surf	2/22/17	11:30 AM											X	X	X	
2	West - 1'	1'	2/22/17	11:30 AM											X	X	X	
3	West - 2'	2'	2/22/17	11:30 AM											X	X	X	
4																		
5																		
6																		
7																		
8																		
9																		
10																		

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Notes:

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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						
2						
3		3/1/17 11:47	Sid Butler 11:47a 3-1-17		3/2/17 1028	
4						
5						

Custody Seal # | Preserved where applicable | On Ice | Cooler Temp. 3.5°C | Thermo. Corr. Factor

Temp: 1.7 IR ID:R-8
CF:+ 0.1
Corrected Temp: 1.8


(432) 563-1800
INV:
PO:
REF:
DEPT:
FedEx
Express
J151315081301uv
TRK#
0201
6606 3913 7980
THU - 02 MAR 10:30A
PRIORITY OVERNIGHT
41 MAFA
79701
TX-US LBB
Part # 156148-434 RRD 04/16

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: COG Operating LLC

Date/ Time Received: 03/02/2017 10:20:00 AM

Work Order #: 547697

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

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1.8
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seal present on shipping container/ cooler?	**Yes**
#5 *Custody Seals intact on shipping container/ cooler?	**Yes**
#6 Custody Seals intact on sample bottles?	**Yes**
#7 *Custody Seals Signed and dated?	**Yes**
#8 *Chain of Custody present?	**Yes**
#9 Sample instructions complete on Chain of Custody?	**Yes**
#10 Any missing/extra samples?	**No**
#11 Chain of Custody signed when relinquished/ received?	**Yes**
#12 Chain of Custody agrees with sample label(s)?	**Yes**
#13 Container label(s) legible and intact?	**Yes**
#14 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#15 Samples in proper container/ bottle?	**Yes**
#16 Samples properly preserved?	**Yes**
#17 Sample container(s) intact?	**Yes**
#18 Sufficient sample amount for indicated test(s)?	**Yes**
#19 All samples received within hold time?	**Yes**
#20 Subcontract of sample(s)?	**N/A**
#21 VOC samples have zero headspace?	**N/A**
#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: 03/02/2017

Checklist reviewed by: Holly Taylor
Holly Taylor
Date: 03/02/2017