

SITE INFORMATION

Report Type: Work Plan 1RP-4688

General Site Information:

Site:	Music Master 27 Federal #3H					
Company:	COG Operating					
Section, Township and Range	Unit B	Sec. 27	T 25S	R 35E		
Lease Number:	API No. 30-025-43387					
County:	Lea County					
GPS:	32.1076877° N			103.3541299° W		
Surface Owner:	Federal					
Mineral Owner:						
Directions:	From intersection of NM18 & NM-128 in Jal, travel west on NM-128 for 10.90 miles, turn south onto lease road for 3.90 mi, turn east for 0.50 mi to location on north side of lease road.					

Release Data:

Date Released:	4/29/2017
Type Release:	Produced Water
Source of Contamination:	Filter Pot/Battery
Fluid Released:	104 bbls
Fluids Recovered:	102 bbls

Official Communication:

Name:	Dakota Neel		Ike Tavaréz
Company:	COG Operating		Tetra Tech
Address:	600 West Illinois Ave.		4000 N. Big Spring
			Ste 401
City:	Midland Texas, 79701		Midland, Texas
Phone number:	(432) 556-8074		(432) 687-8110
Fax:			
Email:	dneel2@concho.com		Ike.Tavaréz@tetrattech.com

Ranking Criteria

Depth to Groundwater:	Ranking Score	Site Data
<50 ft	20	
50-99 ft	10	
>100 ft.	0	175'-200'
WellHead Protection:	Ranking Score	Site Data
Water Source <1,000 ft., Private <200 ft.	20	
Water Source >1,000 ft., Private >200 ft.	0	0
Surface Body of Water:	Ranking Score	Site Data
<200 ft.	20	
200 ft - 1,000 ft.	10	
>1,000 ft.	0	0
Total Ranking Score:		0

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

March 6, 2018

NMOCD approves of the delineation completed for 1RP-4688. See email correspondence for conditions on proposed remedial activities.

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

**Re: Revised Work Plan for the COG Operating LLC, Music Master 27 Federal #003H, Unit B, Section 27, Township 25 South, Range 35 East, Lea County, New Mexico.
RP# 1RP-4688.**

Mr. Yu:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC., (COG) to evaluate and assess a spill that occurred at the Music Master 27 Federal #003H, Unit B, Section 27, Township 25 South, Range 35 East, and Lea County, New Mexico. The spill site coordinates are N 32.1076877 °, W 103.3541299 °. 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 April 29, 2017, and released approximately one-hundred and four (104) barrels of produced water, due to a 1/2 inch nipple blowing out from the top of the filter pot. Vacuum trucks were immediately dispatched to recover all the free-standing liquids within the lined facility. Approximately one-hundred and two (102) barrels of produced water were recovered. The release occurred within a lined facility and overspray impacted the adjacent pasture. The overspray area measured approximately 75' x 60' in the adjacent pasture. The initial C-141 form is included in Appendix A.

Groundwater

No water wells were listed within Section 27 on the New Mexico Office of the State Engineer's website. According to the Chevron Texaco Groundwater Trend map, the average depth to groundwater in this area is approximately 175'-200' below surface. The groundwater data is shown in Appendix B.

Regulatory

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

Soil Assessment and Analytical Results

Initial Sampling

On July 27, 2017, COG personnel were on site to evaluate and sample the release area. Two sample trenches (T-1 and T-2) were installed in the overspray area to total depths of 5.0' and 7.0' below surface, respectively. Additionally, three (3) trenches were installed around the perimeter of the spill (South, East and West) to a total depth of 1.0' below surface in order to evaluate the horizontal extents. A trench was not installed north of the release area due to the location of the lined facility. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The results of the sampling are summarized in Table 1. Shown in Figure 3 are the trench locations

Referring to Table 1, none of the collected samples exceeded the RRALs for TPH, benzene, or total BTEX. The area of T-1 showed a TPH of 55.3 mg/kg and the remaining samples were below the laboratory reporting limit. On addition, none of the samples showed BTEX concentrations above the laboratory reporting limit. The areas of trenches (T-1 and T-2) showed elevated chloride concentrations in the soils with concentrations of 2,620 mg/kg (5.0') and 1,180 mg/kg (2.0'), respectively.

Additional Sampling

Based on the laboratory results, Tetra Tech returned to the site on October 26, 2017, to vertically define the impact in the area of trench (T-1). Two (2) boreholes (BH-1 and BH-2) were installed in the overspray area to define extents using an air rotary rig. The samples were analyzed for 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 borehole drilling logs are included in Appendix D. The borehole locations are shown on Figure 3.

Referring to Table 1, the area of borehole (BH-1) showed elevated chloride concentrations in the shallow soils with a high of 3,230 mg/kg at 4-5' below surface. The chloride impact then significantly declined with depth at 6-7' with a concentration of 54.7 mg/kg. As confirmed, BH-1 did not show any chloride impact to the soil at 10.0' below surface.

Work Plan

Based on the laboratory results, COG proposes to remove the impacted material as highlighted (green) in Table 1 and shown on Figure 4. The area of trench (T-1) will be excavated to approximately 4.0', the area of trench (T-2) will be excavated to approximately 1.0-2.0' below surface, and the area of trench (East) will be surficially scraped in order to remove the elevated chloride concentrations detected in the shallow soils. All of the excavated material will be transported offsite for proper disposal.

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

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

Respectfully submitted,
TETRA TECH



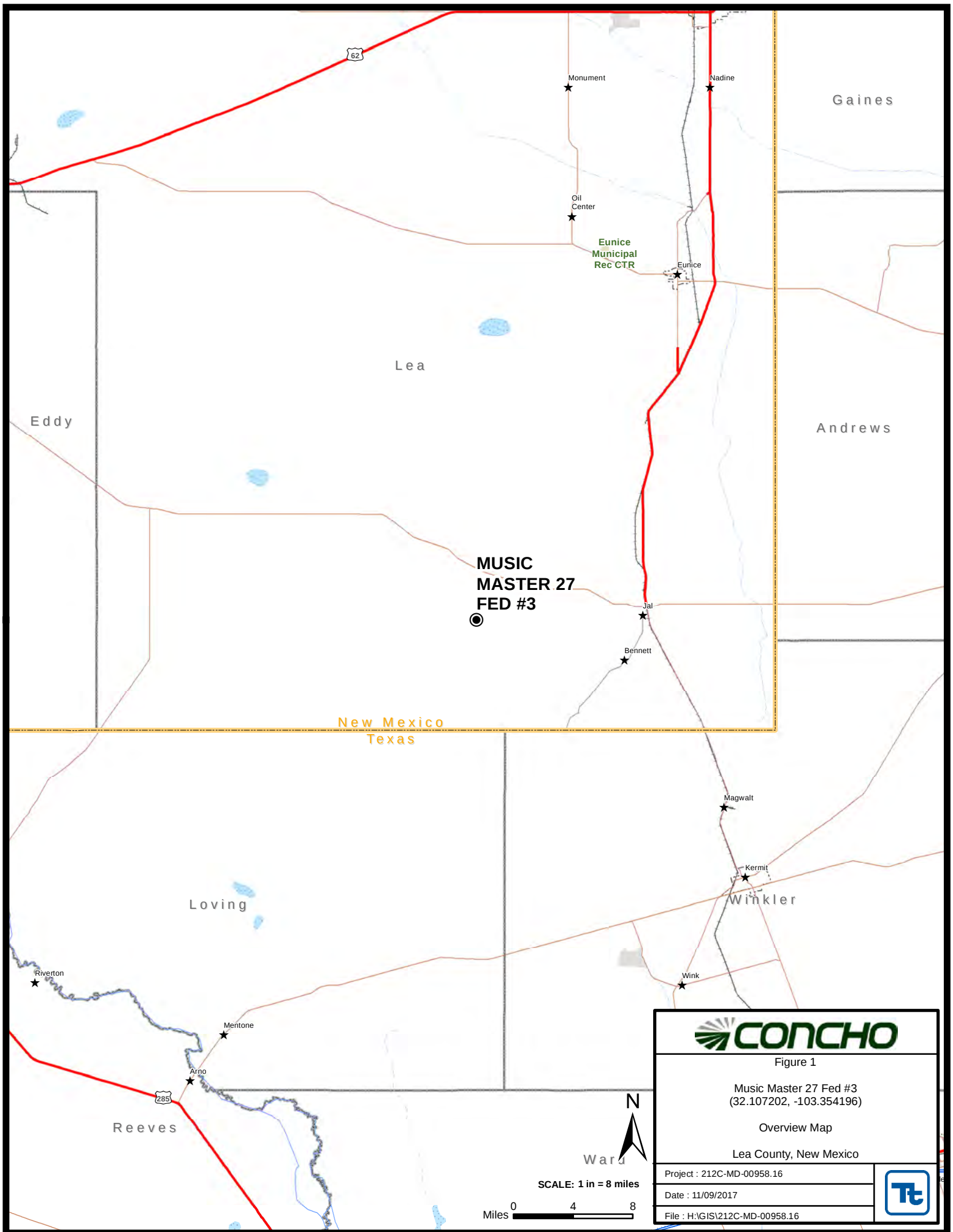
Ike Tavarez, PG
Senior Project Manager



Clair Gonzales,
Geologist I

cc: Robert McNeill – COG
Dakota Neel – COG
Shelly Tucker – BLM

Figures



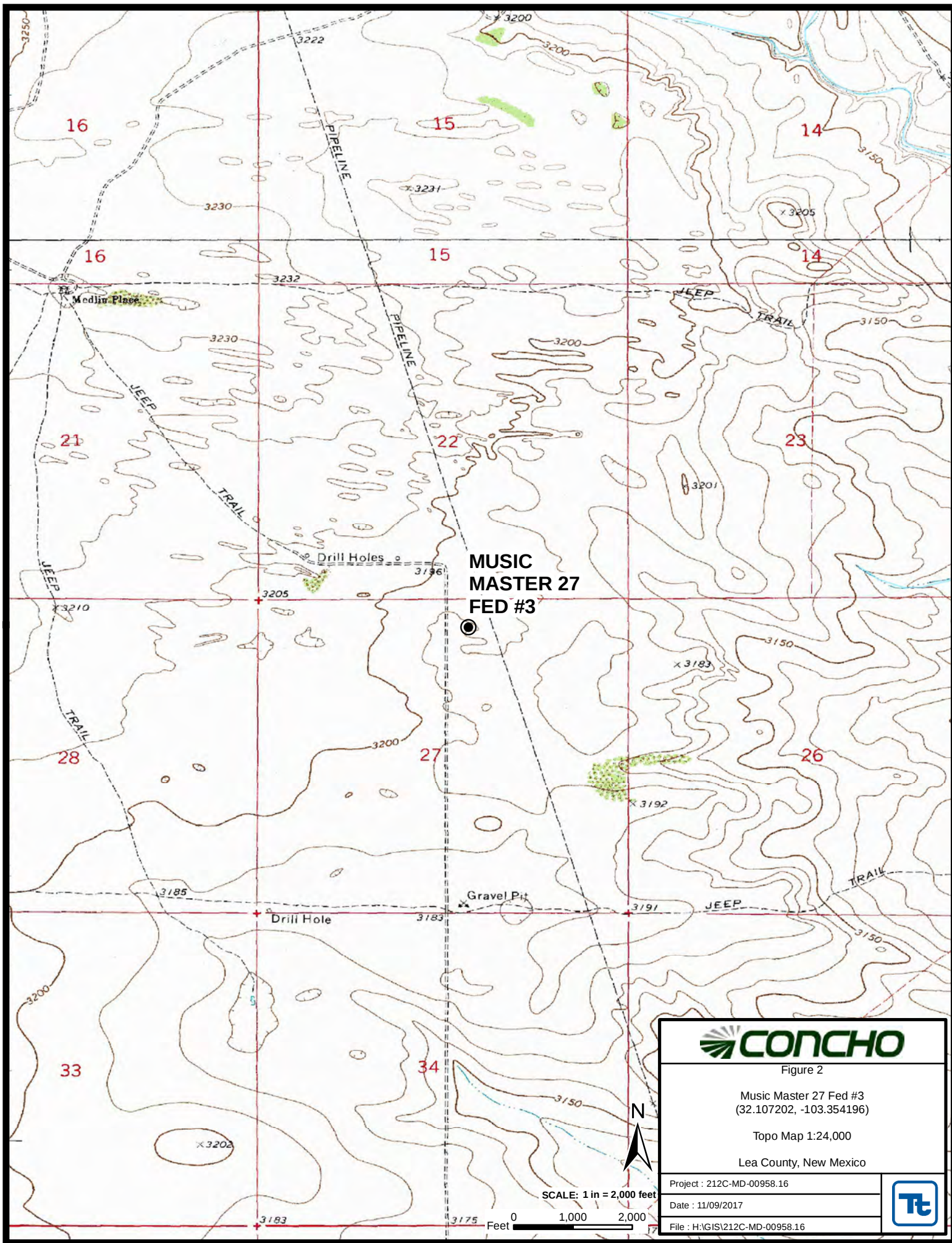


Figure 2

Music Master 27 Fed #3
(32.107202, -103.354196)

Topo Map 1:24,000

Lea County, New Mexico

Project : 212C-MD-00958.16

Date : 11/09/2017

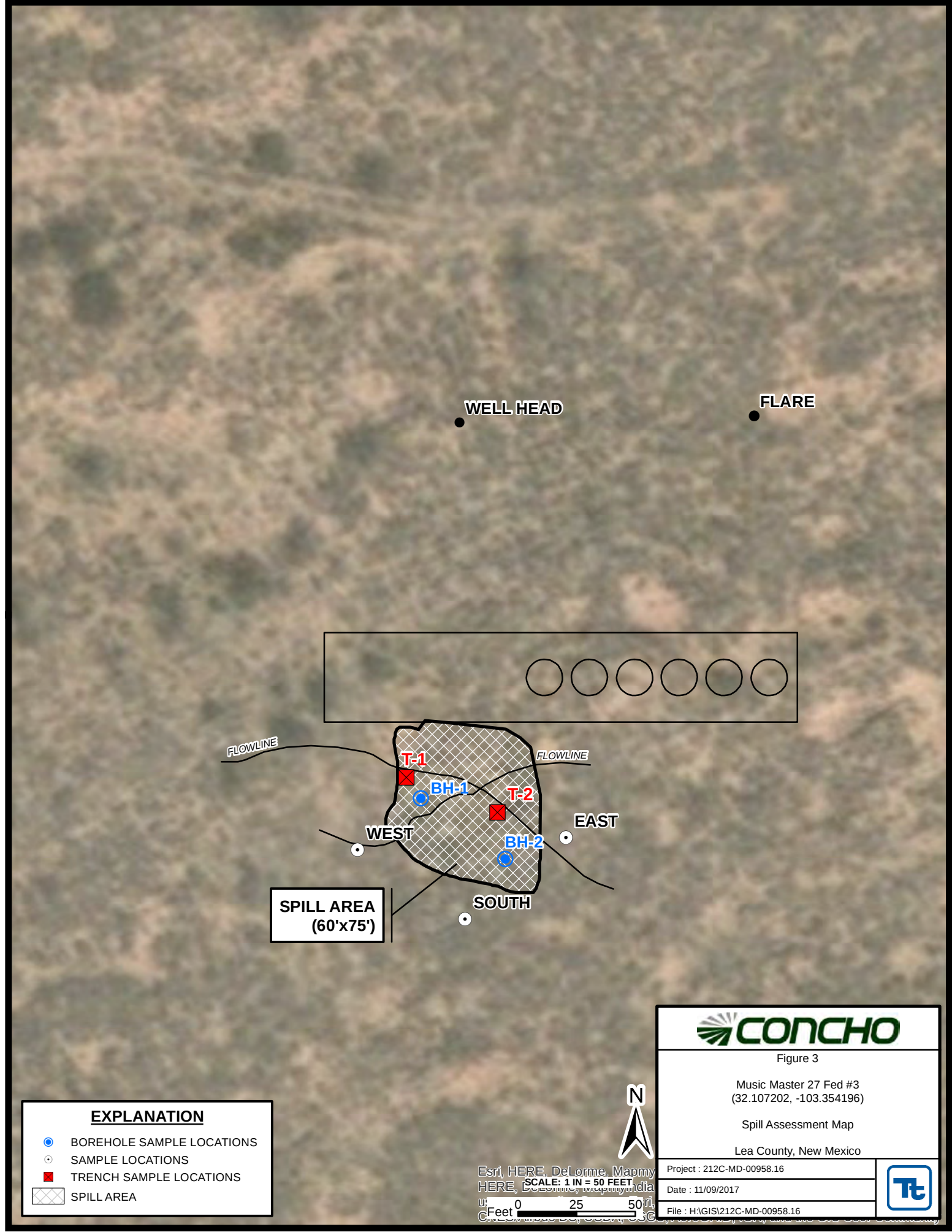
File : H:\GIS\212C-MD-00958.16



SCALE: 1 in = 2,000 feet

0 1,000 2,000 Feet





EXPLANATION

- BOREHOLE SAMPLE LOCATIONS
- SAMPLE LOCATIONS
- TRENCH SAMPLE LOCATIONS
- ▨ SPILL AREA



Figure 3

Music Master 27 Fed #3
(32.107202, -103.354196)

Spill Assessment Map

Lea County, New Mexico

Project : 212C-MD-00958.16

Date : 11/09/2017

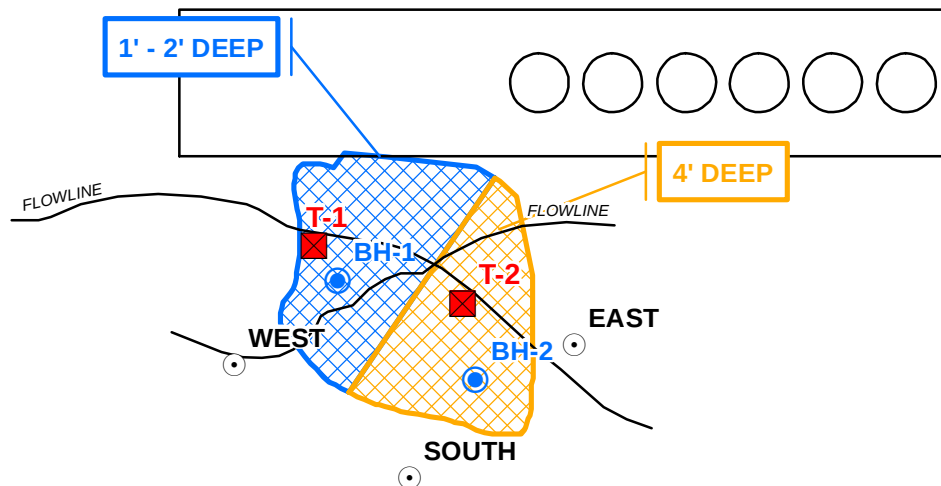
File : H:\GIS\212C-MD-00958.16



Esri, HERE, DeLorme, Mapmy
HERE, DeLorme, Mapmy
Scale: 1 IN = 50 FEET
0 25 50
Feet

WELL HEAD

FLARE



EXPLANATION

- BOREHOLE SAMPLE LOCATIONS
- SAMPLE LOCATIONS
- TRENCH SAMPLE LOCATIONS
- PROPOSED EXCAVATION AREAS



Figure 4

Music Master 27 Fed #3
(32.107202, -103.354196)

Proposed Excavation Areas & Depths Map

Lea County, New Mexico

Project : 212C-MD-00958.16

Date : 11/09/2017

File : H:\GIS\212C-MD-00958.16



Tables

Table 1
COG Operating LLC.
Music Master 27 Fed #3H
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	7/27/2017	Surface	X		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	561
	"	1	X		<15.0	<15.0	<15.0	<15.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	2,100
	"	2	X		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	2,540
	"	3	X		<15.0	<15.0	<15.0	<15.0	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	7,860
	"	4	X		-	-	-	-	-	-	-	-	-	3,990
	"	5	X		<14.9	55.3	<14.9	55.3	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	2,620
BH-1	10/26/2017	0-1	X		-	-	-	-	-	-	-	-	-	4.32
	"	2-3	X		-	-	-	-	-	-	-	-	-	73.5
	"	4-5	X		-	-	-	-	-	-	-	-	-	3,230
	"	6-7	X		-	-	-	-	-	-	-	-	-	54.7
	"	9-10	X		-	-	-	-	-	-	-	-	-	41.5
	"	14-15	X		-	-	-	-	-	-	-	-	-	200
T-2	7/27/2017	Surface	X		<15.0	<15.0	<15.0	<15.0	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	1,230
	"	1	X		<14.9	<14.9	<14.9	<14.9	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	203
	"	2	X		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	1,180
	"	3	X		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	7.64
	"	4	X		-	-	-	-	-	-	-	-	-	134
	"	5	X		-	-	-	-	-	-	-	-	-	28.3
T-2	"	7	X		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	391
BH-2	10/26/2017	10	X		-	-	-	-	-	-	-	-	-	14.2
South	7/27/2017	Surface	X		<14.9	<14.9	<14.9	<14.9	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	125
	"	1	X		<15.0	<15.0	<15.0	<15.0	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	64.8
East	7/27/2017	Surface	X		<15.0	<15.0	<15.0	<15.0	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	869
	"	1	X		<15.0	<15.0	<15.0	<15.0	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	25.1
West	7/27/2017	Surface	X		<15.0	<15.0	<15.0	<15.0	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	12.0
	"	1	X		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	61.6

 Proposed Excavation Depths
 (-) Not Analyzed

Photos

COG Operating LLC
Music Master 27 Federal #3H
Lea County, New Mexico



Lined Facility – View West



Lined Facility – View East



Lined Facility – View East



View Northeast – Area of BH-1

COG Operating LLC
Music Master 27 Federal #3H
Lea County, New Mexico



TETRA TECH



View North – Area of BH-2

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 OGRID # 229137	Contact: Robert McNeill	
Address: 600 West Illinois Avenue, Midland TX 79701	Telephone No. 432-683-7443	
Facility Name: Music Master 27 Federal #003H	Facility Type: Battery	
Surface Owner: Federal	Mineral Owner:	API No. 30-025-43387

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
B	27	25S	35E	330	North	2250	East	Lea

Latitude 32.1076877 Longitude -103.3541299

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release: 104 bbls PW	Volume Recovered: 102 bbls PW
Source of Release: Filter Pot/Battery	Date and Hour of Occurrence: April 29, 2017 2:00 am	Date and Hour of Discovery: April 29, 2017 2:30 am
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Olivia Yu/NMOCD, Shelly Tucker/BLM	
By Whom? Dakota Neel	Date and Hour: 4/29/2017 9:40 am	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

RECEIVED

By Olivia Yu at 12:57 pm, May 03, 2017

Describe Cause of Problem and Remedial Action Taken.*

This release occurred when a 1/2" nipple blew out of the top of filter pot located within the battery. The nipple and associated ball valve have been replaced.

Describe Area Affected and Cleanup Action Taken.*

This release occurred within a lined facility and a light mist impacted the adjacent pasture. Vacuum trucks were immediately dispatched to recover all free standing fluids within the lined containment. Concho will have the spill area in the pasture 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: 	OIL CONSERVATION DIVISION	
Printed Name: Dakota Neel	Approved by Environmental Specialist: 	
Title: HSE Coordinator	Approval Date: 5/3/2017	Expiration Date:
E-mail Address: dneel2@concho.com	Conditions of Approval:	Attached ☐
Date: April 29, 2017 Phone: 575-746-2010	Please inspect liner in question. Provide NMOCD with a concise report of the inspection with affirmation the liner has and will continue to contain liquids.	

* Attach Additional Sheets If Necessary

NMOCD requests confirmation
samples in the impacted
pasture as indicated above.

1RP-4688

nOY1712347134

pOY1712347368

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
Music Master 27 Federal #3H
Lea County, New Mexico

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

24 South			35 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	97	21	22	23
30	29	28	27	26	25
31	32	33	34	35	36

24 South			36 East		
6	5	4	3	2	1
7	8	165	10	11	12
18	17	16	15	14	13
19	20	21	312	23	24
30	29	28	27	160	25
31	32	33	54	34	35
		53			

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

25 South			35 East		
6	5	4	3	108	2
7	165	8	9	10	11
18	17	16	15	14	13
230	19	20	21	22	23
			218	24	
30	29	28	27	26	25
80	31	32	33	34	35
				Site	

25 South			36 East		
6	295	5	4	3	2
7	8	9	10	300	11
18	17	16	15	180	13
19	20	21	22	120	24
30	29	28	27	53.7	455
31	32	33	80	34	35

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

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

26 South			36 East		
6	5	4	3	2	1
7	8	9	175	10	11
18	17	16	177	15	13
220	19	20	21	22	24
198	30	29	28	27	151
31	32	33	34	35	36

88 New Mexico State Engineers Well Reports

105 USGS Well Reports

90 Geology and Groundwater Conditions in Southern Lea, County, NM (Report 6)
 Geology and Groundwater Resources of Eddy County, NM (Report 3)

34 NMOCD - Groundwater Data

123 Tetra Tech installed temporary wells and field water level

143 NMOCD Groundwater map well location

New Mexico Office of the State Engineer

Water Column/Average Depth to Water

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

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

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

(NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub-basin	County	Q Q Q						X	Y	DepthWell	DepthWater	Water Column		
				64	16	4	Sec	Tws	Rng							
C 02296		CUB	LE	1	3	2	18	25S	35E	650398	3556305*		300	230	70	
C 02297		CUB	LE	2	2	1	21	25S	35E	653436	3555140*		300	230	70	
C 02298		CUB	LE	2	2	1	21	25S	35E	653436	3555140*		250	205	45	
C 02388			LE				3	05	25S	35E	651467	3558832*		180	165	15
CP 00624		CP	LE	4	1	1	11	25S	35E	656206	3558197*		510			

Average Depth to Water: **207 feet**

Minimum Depth: **165 feet**

Maximum Depth: **230 feet**

Record Count: 5

PLSS Search:

Township: 25S Range: 35E

*UTM location was derived from PLSS - see Help

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

11/8/17 10:17 AM

WATER COLUMN/ AVERAGE DEPTH
TO WATER

Appendix C



Certificate of Analysis Summary 556917

COG Operating LLC, Artesia, NM

Project Name: Music Master 27 Fed #003H



Project Id:

Contact: Aaron Lieb

Project Location:

Date Received in Lab: Wed Jul-05-17 11:45 am

Report Date: 13-JUL-17

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	556917-001	556917-002	556917-003	556917-004	556917-005	556917-006
	<i>Field Id:</i>	South- Surf	South- 1'	East- Surf	East- 1'	West- Surf	West- 1'
	<i>Depth:</i>		1 ft		1 ft		1 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jun-27-17 12:00	Jun-27-17 12:00	Jun-27-17 12:00	Jun-27-17 12:00	Jun-27-17 12:00	Jun-27-17 12:00
BTEX by EPA 8021B	<i>Extracted:</i>	Jul-07-17 16:45	Jul-07-17 16:45	Jul-10-17 15:00	Jul-07-17 16:45	Jul-07-17 16:45	Jul-07-17 16:45
	<i>Analyzed:</i>	Jul-09-17 00:04	Jul-09-17 00:20	Jul-10-17 18:37	Jul-09-17 00:52	Jul-09-17 01:08	Jul-09-17 01:24
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00201 0.00201	<0.00202 0.00202	<0.00198 0.00198	<0.00201 0.00201	<0.00198 0.00198	<0.00200 0.00200
Toluene		<0.00201 0.00201	<0.00202 0.00202	<0.00198 0.00198	<0.00201 0.00201	<0.00198 0.00198	<0.00200 0.00200
Ethylbenzene		<0.00201 0.00201	<0.00202 0.00202	<0.00198 0.00198	<0.00201 0.00201	<0.00198 0.00198	<0.00200 0.00200
m_p-Xylenes		<0.00402 0.00402	<0.00404 0.00404	<0.00397 0.00397	<0.00402 0.00402	<0.00397 0.00397	<0.00399 0.00399
o-Xylene		<0.00201 0.00201	<0.00202 0.00202	<0.00198 0.00198	<0.00201 0.00201	<0.00198 0.00198	<0.00200 0.00200
Total Xylenes		<0.00201 0.00201	<0.00202 0.00202	<0.00198 0.00198	<0.00201 0.00201	<0.00198 0.00198	<0.00200 0.00200
Total BTEX		<0.00201 0.00201	<0.00202 0.00202	<0.00198 0.00198	<0.00201 0.00201	<0.00198 0.00198	<0.00200 0.00200
Chloride by EPA 300	<i>Extracted:</i>	Jul-11-17 18:00	Jul-11-17 18:00	Jul-11-17 18:00	Jul-11-17 18:00	Jul-12-17 09:20	Jul-12-17 09:20
	<i>Analyzed:</i>	Jul-12-17 04:30	Jul-12-17 04:37	Jul-12-17 04:45	Jul-12-17 04:53	Jul-12-17 10:21	Jul-12-17 10:44
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		125 4.96	64.8 4.98	869 4.87	25.1 4.97	12.0 4.92	61.6 4.97
TPH By SW8015 Mod	<i>Extracted:</i>	Jul-06-17 15:00	Jul-06-17 15:00	Jul-06-17 15:00	Jul-06-17 15:00	Jul-06-17 15:00	Jul-06-17 15:00
	<i>Analyzed:</i>	Jul-07-17 06:04	Jul-07-17 06:26	Jul-07-17 06:47	Jul-07-17 07:09	Jul-07-17 07:30	Jul-07-17 07:52
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Oil Range Hydrocarbons (ORO)		<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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

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

Version: 1.9%

Kelsey Brooks
Project Manager

Analytical Report 556917

for
COG Operating LLC

Project Manager: Aaron Lieb

Music Master 27 Fed #003H

13-JUL-17

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

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

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



13-JUL-17

Project Manager: **Aaron Lieb**

COG Operating LLC

2407 Pecos Avenue

Artesia, NM 88210

Reference: XENCO Report No(s): **556917**

Music Master 27 Fed #003H

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) 556917. 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. 556917 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Kelsey Brooks

Project Manager

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

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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



Sample Cross Reference 556917



COG Operating LLC, Artesia, NM

Music Master 27 Fed #003H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
South- Surf	S	06-27-17 12:00		556917-001
South- 1'	S	06-27-17 12:00	- 1 ft	556917-002
East- Surf	S	06-27-17 12:00		556917-003
East- 1'	S	06-27-17 12:00	- 1 ft	556917-004
West- Surf	S	06-27-17 12:00		556917-005
West- 1'	S	06-27-17 12:00	- 1 ft	556917-006



CASE NARRATIVE

Client Name: COG Operating LLC

Project Name: Music Master 27 Fed #003H

Project ID:
Work Order Number(s): 556917

Report Date: 13-JUL-17
Date Received: 07/05/2017

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3021840 BTEX by EPA 8021B

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

Batch: LBA-3021934 BTEX by EPA 8021B

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

Batch: LBA-3022122 Chloride by EPA 300

Lab Sample ID 556917-005 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 556917-005, -006.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.



Certificate of Analytical Results 556917



COG Operating LLC, Artesia, NM

Music Master 27 Fed #003H

Sample Id: **South- Surf**

Matrix: Soil

Date Received: 07.05.17 11.45

Lab Sample Id: 556917-001

Date Collected: 06.27.17 12.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 07.11.17 18.00

Basis: Wet Weight

Seq Number: 3022034

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	125	4.96	mg/kg	07.12.17 04.30		1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 07.06.17 15.00

Basis: Wet Weight

Seq Number: 3021793

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	07.07.17 06.04	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	07.07.17 06.04	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9	mg/kg	07.07.17 06.04	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	07.07.17 06.04	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	115	%	70-135	07.07.17 06.04		
o-Terphenyl	84-15-1	113	%	70-135	07.07.17 06.04		



Certificate of Analytical Results 556917



COG Operating LLC, Artesia, NM

Music Master 27 Fed #003H

Sample Id: **South- Surf**

Matrix: Soil

Date Received: 07.05.17 11.45

Lab Sample Id: 556917-001

Date Collected: 06.27.17 12.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 07.07.17 16.45

Basis: Wet Weight

Seq Number: 3021840

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	07.09.17 00.04	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	07.09.17 00.04	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	07.09.17 00.04	U	1
m_p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	07.09.17 00.04	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	07.09.17 00.04	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	07.09.17 00.04	U	1
Total BTEX		<0.00201	0.00201	mg/kg	07.09.17 00.04	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	105	%	80-120	07.09.17 00.04		
1,4-Difluorobenzene	540-36-3	91	%	80-120	07.09.17 00.04		



Certificate of Analytical Results 556917



COG Operating LLC, Artesia, NM

Music Master 27 Fed #003H

Sample Id: **South- 1'**
Lab Sample Id: 556917-002

Matrix: Soil
Date Collected: 06.27.17 12.00

Date Received: 07.05.17 11.45
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300
Tech: MGO
Analyst: MGO
Seq Number: 3022034

Date Prep: 07.11.17 18.00

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	64.8	4.98	mg/kg	07.12.17 04.37		1

Analytical Method: TPH By SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3021793

Date Prep: 07.06.17 15.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.07.17 06.26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.07.17 06.26	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	07.07.17 06.26	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.07.17 06.26	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	109	%	70-135	07.07.17 06.26		
o-Terphenyl	84-15-1	109	%	70-135	07.07.17 06.26		



Certificate of Analytical Results 556917



COG Operating LLC, Artesia, NM

Music Master 27 Fed #003H

Sample Id: **South- 1'**
Lab Sample Id: 556917-002

Matrix: Soil
Date Collected: 06.27.17 12.00

Date Received: 07.05.17 11.45
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 07.07.17 16.45

Basis: Wet Weight

Seq Number: 3021840

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	07.09.17 00.20	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	07.09.17 00.20	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	07.09.17 00.20	U	1
m_p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	07.09.17 00.20	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	07.09.17 00.20	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	07.09.17 00.20	U	1
Total BTEX		<0.00202	0.00202	mg/kg	07.09.17 00.20	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	113	%	80-120	07.09.17 00.20		
4-Bromofluorobenzene	460-00-4	91	%	80-120	07.09.17 00.20		



Certificate of Analytical Results 556917



COG Operating LLC, Artesia, NM

Music Master 27 Fed #003H

Sample Id: **East- Surf**

Matrix: Soil

Date Received: 07.05.17 11.45

Lab Sample Id: 556917-003

Date Collected: 06.27.17 12.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 07.11.17 18.00

Basis: Wet Weight

Seq Number: 3022034

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	869	4.87	mg/kg	07.12.17 04.45		1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 07.06.17 15.00

Basis: Wet Weight

Seq Number: 3021793

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.07.17 06.47	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.07.17 06.47	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	07.07.17 06.47	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.07.17 06.47	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	107	%	70-135	07.07.17 06.47		
o-Terphenyl	84-15-1	106	%	70-135	07.07.17 06.47		



Certificate of Analytical Results 556917



COG Operating LLC, Artesia, NM

Music Master 27 Fed #003H

Sample Id: **East- Surf**

Matrix: Soil

Date Received: 07.05.17 11.45

Lab Sample Id: 556917-003

Date Collected: 06.27.17 12.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 07.10.17 15.00

Basis: Wet Weight

Seq Number: 3021934

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	07.10.17 18.37	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	07.10.17 18.37	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	07.10.17 18.37	U	1
m_p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	07.10.17 18.37	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	07.10.17 18.37	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	07.10.17 18.37	U	1
Total BTEX		<0.00198	0.00198	mg/kg	07.10.17 18.37	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	113	%	80-120	07.10.17 18.37		
1,4-Difluorobenzene	540-36-3	104	%	80-120	07.10.17 18.37		



Certificate of Analytical Results 556917



COG Operating LLC, Artesia, NM

Music Master 27 Fed #003H

Sample Id: **East- 1'**
Lab Sample Id: 556917-004

Matrix: Soil
Date Collected: 06.27.17 12.00

Date Received: 07.05.17 11.45
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300
Tech: MGO
Analyst: MGO
Seq Number: 3022034

Date Prep: 07.11.17 18.00

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	25.1	4.97	mg/kg	07.12.17 04.53		1

Analytical Method: TPH By SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3021793

Date Prep: 07.06.17 15.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.07.17 07.09	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.07.17 07.09	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	07.07.17 07.09	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.07.17 07.09	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	113	%	70-135	07.07.17 07.09		
o-Terphenyl	84-15-1	114	%	70-135	07.07.17 07.09		



Certificate of Analytical Results 556917



COG Operating LLC, Artesia, NM

Music Master 27 Fed #003H

Sample Id: **East- 1'**
Lab Sample Id: 556917-004

Matrix: Soil
Date Collected: 06.27.17 12.00

Date Received: 07.05.17 11.45
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3021840

Date Prep: 07.07.17 16.45

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	07.09.17 00.52	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	07.09.17 00.52	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	07.09.17 00.52	U	1
m_p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	07.09.17 00.52	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	07.09.17 00.52	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	07.09.17 00.52	U	1
Total BTEX		<0.00201	0.00201	mg/kg	07.09.17 00.52	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	91	%	80-120	07.09.17 00.52		
1,4-Difluorobenzene	540-36-3	115	%	80-120	07.09.17 00.52		



Certificate of Analytical Results 556917



COG Operating LLC, Artesia, NM

Music Master 27 Fed #003H

Sample Id: **West- Surf**

Matrix: Soil

Date Received: 07.05.17 11.45

Lab Sample Id: 556917-005

Date Collected: 06.27.17 12.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 07.12.17 09.20

Basis: Wet Weight

Seq Number: 3022122

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12.0	4.92	mg/kg	07.12.17 10.21		1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 07.06.17 15.00

Basis: Wet Weight

Seq Number: 3021793

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.07.17 07.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.07.17 07.30	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	07.07.17 07.30	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.07.17 07.30	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	114	%	70-135	07.07.17 07.30		
o-Terphenyl	84-15-1	119	%	70-135	07.07.17 07.30		



Certificate of Analytical Results 556917



COG Operating LLC, Artesia, NM

Music Master 27 Fed #003H

Sample Id: **West- Surf**

Matrix: Soil

Date Received: 07.05.17 11.45

Lab Sample Id: 556917-005

Date Collected: 06.27.17 12.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 07.07.17 16.45

Basis: Wet Weight

Seq Number: 3021840

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	07.09.17 01.08	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	07.09.17 01.08	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	07.09.17 01.08	U	1
m_p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	07.09.17 01.08	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	07.09.17 01.08	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	07.09.17 01.08	U	1
Total BTEX		<0.00198	0.00198	mg/kg	07.09.17 01.08	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	91	%	80-120	07.09.17 01.08		
4-Bromofluorobenzene	460-00-4	91	%	80-120	07.09.17 01.08		



Certificate of Analytical Results 556917



COG Operating LLC, Artesia, NM

Music Master 27 Fed #003H

Sample Id: **West- 1'**
Lab Sample Id: 556917-006

Matrix: Soil
Date Collected: 06.27.17 12.00

Date Received: 07.05.17 11.45
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: MGO

Analyst: MGO

Seq Number: 3022122

Date Prep: 07.12.17 09.20

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	61.6	4.97	mg/kg	07.12.17 10.44		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3021793

Date Prep: 07.06.17 15.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.07.17 07.52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.07.17 07.52	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	07.07.17 07.52	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.07.17 07.52	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	116	%	70-135	07.07.17 07.52		
o-Terphenyl	84-15-1	116	%	70-135	07.07.17 07.52		



Certificate of Analytical Results 556917



COG Operating LLC, Artesia, NM

Music Master 27 Fed #003H

Sample Id: **West- 1'**
Lab Sample Id: 556917-006

Matrix: Soil
Date Collected: 06.27.17 12.00

Date Received: 07.05.17 11.45
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 07.07.17 16.45

Basis: Wet Weight

Seq Number: 3021840

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.09.17 01.24	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.09.17 01.24	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.09.17 01.24	U	1
m_p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	07.09.17 01.24	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.09.17 01.24	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.09.17 01.24	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.09.17 01.24	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	80-120	07.09.17 01.24		
4-Bromofluorobenzene	460-00-4	110	%	80-120	07.09.17 01.24		

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

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

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(432) 563-1800	(432) 563-1713
(602) 437-0330	

COG Operating LLC
Music Master 27 Fed #003H**Analytical Method: Chloride by EPA 300**

Seq Number: 3022034

MB Sample Id: 727504-1-BLK

Matrix: Solid

LCS Sample Id: 727504-1-BKS

Prep Method: E300P

Date Prep: 07.11.17

LCSD Sample Id: 727504-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	269	108	268	107	90-110	0	20	mg/kg	07.12.17 01:10	

Analytical Method: Chloride by EPA 300

Seq Number: 3022122

MB Sample Id: 727558-1-BLK

Matrix: Solid

LCS Sample Id: 727558-1-BKS

Prep Method: E300P

Date Prep: 07.12.17

LCSD Sample Id: 727558-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	260	104	259	104	90-110	0	20	mg/kg	07.12.17 10:06	

Analytical Method: Chloride by EPA 300

Seq Number: 3022034

Parent Sample Id: 556914-001

Matrix: Soil

MS Sample Id: 556914-001 S

Prep Method: E300P

Date Prep: 07.11.17

MSD Sample Id: 556914-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	124	246	389	108	383	105	90-110	2	20	mg/kg	07.12.17 01:33	

Analytical Method: Chloride by EPA 300

Seq Number: 3022034

Parent Sample Id: 556915-003

Matrix: Soil

MS Sample Id: 556915-003 S

Prep Method: E300P

Date Prep: 07.11.17

MSD Sample Id: 556915-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	51.3	249	321	108	317	107	90-110	1	20	mg/kg	07.12.17 03:21	

Analytical Method: Chloride by EPA 300

Seq Number: 3022122

Parent Sample Id: 556916-014

Matrix: Soil

MS Sample Id: 556916-014 S

Prep Method: E300P

Date Prep: 07.12.17

MSD Sample Id: 556916-014 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	859	249	1100	97	1100	97	90-110	0	20	mg/kg	07.12.17 12:16	

Analytical Method: Chloride by EPA 300

Seq Number: 3022122

Parent Sample Id: 556917-005

Matrix: Soil

MS Sample Id: 556917-005 S

Prep Method: E300P

Date Prep: 07.12.17

MSD Sample Id: 556917-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	12.0	246	350	137	345	135	90-110	1	20	mg/kg	07.12.17 10:29	X



QC Summary 556917

COG Operating LLC Music Master 27 Fed #003H

Analytical Method: TPH By SW8015 Mod

Seq Number: 3021793

MB Sample Id: 727360-1-BLK

Matrix: Solid

LCS Sample Id: 727360-1-BKS

Prep Method: TX1005P

Date Prep: 07.06.17

LCSD Sample Id: 727360-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	991	99	1000	100	70-135	1	35	mg/kg	07.06.17 23:42	
Diesel Range Organics (DRO)	<15.0	1000	1000	100	991	99	70-135	1	35	mg/kg	07.06.17 23:42	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane	129		117		113		70-135	%	07.06.17 23:42			
o-Terphenyl	130		117		111		70-135	%	07.06.17 23:42			

Analytical Method: TPH By SW8015 Mod

Seq Number: 3021793

Parent Sample Id: 556913-002

Matrix: Soil

MS Sample Id: 556913-002 S

Prep Method: TX1005P

Date Prep: 07.06.17

MSD Sample Id: 556913-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	998	990	99	999	100	70-135	1	35	mg/kg	07.07.17 01:05	
Diesel Range Organics (DRO)	<15.0	998	968	97	974	97	70-135	1	35	mg/kg	07.07.17 01:05	
Surrogate			MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane			113		103		70-135	%	07.07.17 01:05			
o-Terphenyl			112		101		70-135	%	07.07.17 01:05			

Analytical Method: BTEX by EPA 8021B

Seq Number: 3021840

MB Sample Id: 727364-1-BLK

Matrix: Solid

LCS Sample Id: 727364-1-BKS

Prep Method: SW5030B

Date Prep: 07.07.17

LCSD Sample Id: 727364-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.120	120	0.120	119	70-130	0	35	mg/kg	07.08.17 21:54	
Toluene	<0.00201	0.100	0.107	107	0.106	105	70-130	1	35	mg/kg	07.08.17 21:54	
Ethylbenzene	<0.00201	0.100	0.112	112	0.109	108	71-129	3	35	mg/kg	07.08.17 21:54	
m_p-Xylenes	<0.00402	0.201	0.200	100	0.196	97	70-135	2	35	mg/kg	07.08.17 21:54	
o-Xylene	<0.00201	0.100	0.105	105	0.109	108	71-133	4	35	mg/kg	07.08.17 21:54	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
1,4-Difluorobenzene	99		93		85		80-120	%	07.08.17 21:54			
4-Bromofluorobenzene	106		107		83		80-120	%	07.08.17 21:54			

COG Operating LLC
Music Master 27 Fed #003H

Analytical Method: BTEX by EPA 8021B

Seq Number: 3021934

MB Sample Id: 727453-1-BLK

Matrix: Solid

LCS Sample Id: 727453-1-BKS

Prep Method: SW5030B

Date Prep: 07.10.17

LCSD Sample Id: 727453-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.121	121	0.113	113	70-130	7	35	mg/kg	07.10.17 16:43	
Toluene	<0.00200	0.0998	0.117	117	0.105	105	70-130	11	35	mg/kg	07.10.17 16:43	
Ethylbenzene	<0.00200	0.0998	0.120	120	0.109	109	71-129	10	35	mg/kg	07.10.17 16:43	
m_p-Xylenes	<0.00399	0.200	0.210	105	0.191	95	70-135	9	35	mg/kg	07.10.17 16:43	
o-Xylene	<0.00200	0.0998	0.117	117	0.102	102	71-133	14	35	mg/kg	07.10.17 16:43	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	88		94		87		80-120	%	07.10.17 16:43
4-Bromofluorobenzene	85		89		90		80-120	%	07.10.17 16:43

Analytical Method: BTEX by EPA 8021B

Seq Number: 3021840

Parent Sample Id: 556913-005

Matrix: Soil

MS Sample Id: 556913-005 S

Prep Method: SW5030B

Date Prep: 07.07.17

MSD Sample Id: 556913-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.105	105	0.101	101	70-130	4	35	mg/kg	07.08.17 22:27	
Toluene	<0.00199	0.0996	0.0955	96	0.0918	92	70-130	4	35	mg/kg	07.08.17 22:27	
Ethylbenzene	<0.00199	0.0996	0.0982	99	0.0937	94	71-129	5	35	mg/kg	07.08.17 22:27	
m_p-Xylenes	<0.00398	0.199	0.175	88	0.172	86	70-135	2	35	mg/kg	07.08.17 22:27	
o-Xylene	<0.00199	0.0996	0.103	103	0.0954	95	71-133	8	35	mg/kg	07.08.17 22:27	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	92		85		80-120	%	07.08.17 22:27
4-Bromofluorobenzene	104		86		80-120	%	07.08.17 22:27

Analytical Method: BTEX by EPA 8021B

Seq Number: 3021934

Parent Sample Id: 556932-002

Matrix: Soil

MS Sample Id: 556932-002 S

Prep Method: SW5030B

Date Prep: 07.10.17

MSD Sample Id: 556932-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.0935	94	0.102	102	70-130	9	35	mg/kg	07.10.17 17:16	
Toluene	<0.00199	0.0996	0.0778	78	0.0893	89	70-130	14	35	mg/kg	07.10.17 17:16	
Ethylbenzene	<0.00199	0.0996	0.0848	85	0.0940	94	71-129	10	35	mg/kg	07.10.17 17:16	
m_p-Xylenes	<0.00398	0.199	0.142	71	0.162	81	70-135	13	35	mg/kg	07.10.17 17:16	
o-Xylene	<0.00199	0.0996	0.0823	83	0.0874	88	71-133	6	35	mg/kg	07.10.17 17:16	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	109		103		80-120	%	07.10.17 17:16
4-Bromofluorobenzene	119		111		80-120	%	07.10.17 17:16

CHAIN OF CUSTODY

Page 7 of 1

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5526917

Matrix Codes

Client / Reporting Information						Project Information							Analytical Information			Matrix Codes							
Company Name / Branch: COG Operating LLC Company Address: 2407 PECOS Avenue Artesia NM 88210						Project Name/Number: Music Master 27 Fed #003H Project Location: Music Master 27 Fe Invoice To: COG Operating LLC Attn: Robert McNeill 600 W. Illinois Midland TX 79701																	
Email: aletch@concho.com Phone No: 575-748-1553 dneelr@concho.com raskell@concho.com						PO Number:																	
Project Contact: Aaron Lieb																							
Sampler's Name: Aaron Lieb																							
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MeOH	NONE	TPH/ EXTENDED	BTEX	Chloride	Field Comments					
1	South - Surf	-	6/21/17	12:00pm	S	1									X	X	X						
2	South - Surf	1'				1									X	X	X						
3	East - Surf	-				1									X	X	X						
4	East - 1'	1				1									X	X	X						
5	West - Surf	-				1									X	X	X						
6	West - 1'	1				1									X	X	X						
7																							
8																							
9																							
10																							
Turnaround Time (Business days)						Data Deliverable Information												Nc					
☐ Same Day TAT						☐ Level II Std QC						☐ Level IV (Full Data Pkg raw data)											
☐ Next Day EMERGENCY						☐ 7 Day TAT						☐ Level III Std QC+ Forms						☐ TRRP Level IV					
☐ 2 Day EMERGENCY						☐ Contract TAT						☐ Level 3 (CLP Forms)						☐ UST / RG -411					
☐ 3 Day EMERGENCY						☐ TRRP Checklist																	
TAT Starts Day received by Lab, if received by 5:00 pm																		FED-EX / UPS: Tracking #					
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY																							
Relinquished by Sampler:						Date Time: 12:00 PM Received By: [Signature]						Date Time: 11:45 AM Relinquished By: [Signature]											
Refurnished by:						Date Time: 7/5/17 Received By: [Signature]						Date Time: 7-5-17 Relinquished By: [Signature]											
3						Date Time:						Received By: 3						Custody Seal # 4					
Relinquished by:						Date Time:						Received By:						Preserved where applicable					
5						Date Time:						Received By: 5						On Ice [X] Cooler Temp. 4.9°C Thermo. Corr. Factor					



XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In



Client: COG Operating LLC

Date/ Time Received: 07/05/2017 11:45:00 AM

Work Order #: 556917

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	4.9
#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)?	No
#21 VOC samples have zero headspace?	N/A

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

Analyst: ss

PH Device/Lot#:

Checklist completed by:

Shawnee Smith

Date: 07/06/2017

Checklist reviewed by:

Kelsey Brooks

Date: 07/06/2017



Certificate of Analysis Summary 556918

COG Operating LLC, Artesia, NM

Project Name: Music Master 27 Fed #003H



Project Id:

Contact: Aaron Lieb

Project Location:

Date Received in Lab: Wed Jul-05-17 11:45 am

Report Date: 13-JUL-17

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	556918-001	556918-002	556918-003	556918-004	556918-005	556918-006
	Field Id:	T1- Surf	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:	Jun-27-17 10:15	Jun-27-17 10:15	Jun-27-17 10:15	Jun-27-17 10:15	Jun-27-17 10:15	Jun-27-17 10:15
BTEX by EPA 8021B	Extracted:	Jul-07-17 16:45	Jul-07-17 16:30	Jul-10-17 15:00	Jul-07-17 16:30		Jul-07-17 16:30
	Analyzed:	Jul-08-17 23:47	Jul-08-17 17:37	Jul-10-17 19:26	Jul-08-17 21:06		Jul-08-17 20:50
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		mg/kg RL
Benzene		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201		<0.00199 0.00199
Toluene		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201		<0.00199 0.00199
Ethylbenzene		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201		<0.00199 0.00199
m_p-Xylenes		<0.00401 0.00401	<0.00398 0.00398	<0.00400 0.00400	<0.00402 0.00402		<0.00398 0.00398
o-Xylene		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201		<0.00199 0.00199
Total Xylenes		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201		<0.00199 0.00199
Total BTEX		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201		<0.00199 0.00199
Chloride by EPA 300	Extracted:	Jul-12-17 12:00	Jul-12-17 12:00	Jul-12-17 12:00	Jul-12-17 12:00	Jul-12-17 12:00	Jul-12-17 12:00
	Analyzed:	Jul-12-17 23:39	Jul-12-17 23:47	Jul-13-17 00:17	Jul-13-17 00:25	Jul-13-17 00:48	Jul-13-17 00:56
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		561 4.94	2100 24.9	2540 24.9	7860 49.6	3990 25.0	2620 24.9
TPH By SW8015 Mod	Extracted:	Jul-07-17 16:00	Jul-07-17 16:00	Jul-07-17 16:00	Jul-07-17 16:00		Jul-07-17 16:00
	Analyzed:	Jul-07-17 20:22	Jul-07-17 21:25	Jul-07-17 21:46	Jul-07-17 22:07		Jul-07-17 22:28
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		<14.9 14.9
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		55.3 14.9
Oil Range Hydrocarbons (ORO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		<14.9 14.9
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		55.3 14.9

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

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Version: 1.9%

Kelsey Brooks
Project Manager



Certificate of Analysis Summary 556918

COG Operating LLC, Artesia, NM

Project Name: Music Master 27 Fed #003H



Project Id:

Contact: Aaron Lieb

Project Location:

Date Received in Lab: Wed Jul-05-17 11:45 am

Report Date: 13-JUL-17

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	556918-007	556918-008	556918-009	556918-010	556918-011	556918-012
	Field Id:	T2- Surf	T2- 1'	T2- 2'	T2- 3'	T2- 4'	T2- 5'
	Depth:		1- ft	2- ft	3- ft	4- ft	5- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Jun-27-17 11:00	Jun-27-17 11:00	Jun-27-17 11:00	Jun-27-17 11:00	Jun-27-17 11:00	Jun-27-17 11:00
BTEX by EPA 8021B	Extracted:	Jul-07-17 16:30	Jul-07-17 16:30	Jul-07-17 16:30	Jul-07-17 16:30		
	Analyzed:	Jul-08-17 20:34	Jul-08-17 20:18	Jul-08-17 20:02	Jul-08-17 19:46		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200		
Toluene		<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200		
Ethylbenzene		<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200		
m_p-Xylenes		0.00457 0.00402	<0.00398 0.00398	<0.00399 0.00399	0.00975 0.00401		
o-Xylene		<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200		
Total Xylenes		0.00457 0.00201	<0.00199 0.00199	<0.00200 0.00200	0.00975 0.00200		
Total BTEX		0.00457 0.00201	<0.00199 0.00199	<0.00200 0.00200	0.00975 0.00200		
Chloride by EPA 300	Extracted:	Jul-12-17 12:00	Jul-12-17 12:00	Jul-12-17 12:00	Jul-12-17 12:00	Jul-12-17 12:00	Jul-12-17 12:00
	Analyzed:	Jul-13-17 01:03	Jul-12-17 23:54	Jul-13-17 01:11	Jul-13-17 01:19	Jul-13-17 01:26	Jul-13-17 01:34
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		1230 4.95	203 4.97	1180 4.95	7.64 4.98	134 4.97	28.3 4.99
TPH By SW8015 Mod	Extracted:	Jul-07-17 16:00	Jul-07-17 16:00	Jul-07-17 16:00	Jul-07-17 16:00		
	Analyzed:	Jul-07-17 22:49	Jul-07-17 23:10	Jul-07-17 23:31	Jul-07-17 23:52		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0		
Diesel Range Organics (DRO)		<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0		
Oil Range Hydrocarbons (ORO)		<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0		
Total TPH		<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0		

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

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Version: 1.9%

Kelsey Brooks
Project Manager



Certificate of Analysis Summary 556918

COG Operating LLC, Artesia, NM

Project Name: Music Master 27 Fed #003H



Project Id:

Contact: Aaron Lieb

Project Location:

Date Received in Lab: Wed Jul-05-17 11:45 am

Report Date: 13-JUL-17

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	556918-013					
	Field Id:	T2- 7'					
	Depth:	7- ft					
	Matrix:	SOIL					
	Sampled:	Jun-27-17 11:00					
BTEX by EPA 8021B	Extracted:	Jul-10-17 15:00					
	Analyzed:	Jul-10-17 19:09					
	Units/RL:	mg/kg RL					
Benzene		<0.00200 0.00200					
Toluene		<0.00200 0.00200					
Ethylbenzene		<0.00200 0.00200					
m_p-Xylenes		<0.00399 0.00399					
o-Xylene		<0.00200 0.00200					
Total Xylenes		<0.00200 0.00200					
Total BTEX		<0.00200 0.00200					
Chloride by EPA 300	Extracted:	Jul-12-17 18:10					
	Analyzed:	Jul-13-17 04:38					
	Units/RL:	mg/kg RL					
Chloride		34.0 4.95					
TPH By SW8015 Mod	Extracted:	Jul-07-17 16:00					
	Analyzed:	Jul-08-17 00:14					
	Units/RL:	mg/kg RL					
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0					
Diesel Range Organics (DRO)		<15.0 15.0					
Oil Range Hydrocarbons (ORO)		<15.0 15.0					
Total TPH		<15.0 15.0					

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

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Version: 1.0%

Kelsey Brooks
Project Manager

Analytical Report 556918

for
COG Operating LLC

Project Manager: Aaron Lieb

Music Master 27 Fed #003H

13-JUL-17

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

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

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



13-JUL-17

Project Manager: **Aaron Lieb**

COG Operating LLC

2407 Pecos Avenue

Artesia, NM 88210

Reference: XENCO Report No(s): **556918**

Music Master 27 Fed #003H

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) 556918. 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. 556918 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Kelsey Brooks

Project Manager

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

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Sample Cross Reference 556918



COG Operating LLC, Artesia, NM

Music Master 27 Fed #003H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
T1- Surf	S	06-27-17 10:15		556918-001
T1- 1'	S	06-27-17 10:15	1 ft	556918-002
T1- 2'	S	06-27-17 10:15	2 ft	556918-003
T1- 3'	S	06-27-17 10:15	3 ft	556918-004
T1- 4'	S	06-27-17 10:15	4 ft	556918-005
T1- 5'	S	06-27-17 10:15	5 ft	556918-006
T2- Surf	S	06-27-17 11:00		556918-007
T2- 1'	S	06-27-17 11:00	1 ft	556918-008
T2- 2'	S	06-27-17 11:00	2 ft	556918-009
T2- 3'	S	06-27-17 11:00	3 ft	556918-010
T2- 4'	S	06-27-17 11:00	4 ft	556918-011
T2- 5'	S	06-27-17 11:00	5 ft	556918-012
T2- 7'	S	06-27-17 11:00	7 ft	556918-013



CASE NARRATIVE

Client Name: COG Operating LLC

Project Name: Music Master 27 Fed #003H

Project ID:

Work Order Number(s): 556918

Report Date: 13-JUL-17

Date Received: 07/05/2017

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3021836 BTEX by EPA 8021B

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

Batch: LBA-3021840 BTEX by EPA 8021B

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

Batch: LBA-3021934 BTEX by EPA 8021B

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

Batch: LBA-3022150 Chloride by EPA 300

Lab Sample ID 556918-008 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 556918-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3022159 Inorganic Anions by EPA 300

Lab Sample ID 556918-013 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 556918-013.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.



Certificate of Analytical Results 556918



COG Operating LLC, Artesia, NM

Music Master 27 Fed #003H

Sample Id: **T1- Surf**
Lab Sample Id: 556918-001

Matrix: Soil
Date Collected: 06.27.17 10.15

Date Received: 07.05.17 11.45

Analytical Method: Chloride by EPA 300

Tech: MGO

Analyst: MGO

Seq Number: 3022150

Prep Method: E300P

% Moisture:

Date Prep: 07.12.17 12.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	561	4.94	mg/kg	07.12.17 23.39		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3021795

Prep Method: TX1005P

% Moisture:

Date Prep: 07.07.17 16.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.07.17 20.22	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.07.17 20.22	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	07.07.17 20.22	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.07.17 20.22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	07.07.17 20.22	
o-Terphenyl	84-15-1	111	%	70-135	07.07.17 20.22	



Certificate of Analytical Results 556918



COG Operating LLC, Artesia, NM

Music Master 27 Fed #003H

Sample Id: **T1- Surf**
Lab Sample Id: 556918-001

Matrix: Soil
Date Collected: 06.27.17 10.15

Date Received: 07.05.17 11.45

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 07.07.17 16.45

Basis: Wet Weight

Seq Number: 3021840

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.08.17 23.47	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.08.17 23.47	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.08.17 23.47	U	1
m_p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	07.08.17 23.47	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.08.17 23.47	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.08.17 23.47	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.08.17 23.47	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	83	%	80-120	07.08.17 23.47		
1,4-Difluorobenzene	540-36-3	114	%	80-120	07.08.17 23.47		



Certificate of Analytical Results 556918



COG Operating LLC, Artesia, NM

Music Master 27 Fed #003H

Sample Id: T1- 1'
Lab Sample Id: 556918-002

Matrix: Soil
Date Collected: 06.27.17 10.15

Date Received: 07.05.17 11.45
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300
Tech: MGO
Analyst: MGO
Seq Number: 3022150

Date Prep: 07.12.17 12.00

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2100	24.9	mg/kg	07.12.17 23.47		5

Analytical Method: TPH By SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3021795

Date Prep: 07.07.17 16.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.07.17 21.25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.07.17 21.25	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	07.07.17 21.25	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.07.17 21.25	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	107	%	70-135	07.07.17 21.25		
o-Terphenyl	84-15-1	108	%	70-135	07.07.17 21.25		



Certificate of Analytical Results 556918



COG Operating LLC, Artesia, NM

Music Master 27 Fed #003H

Sample Id: T1- 1'
Lab Sample Id: 556918-002

Matrix: Soil
Date Collected: 06.27.17 10.15

Date Received: 07.05.17 11.45
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 07.07.17 16.30

Basis: Wet Weight

Seq Number: 3021836

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.08.17 17.37	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.08.17 17.37	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.08.17 17.37	U	1
m_p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.08.17 17.37	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.08.17 17.37	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.08.17 17.37	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.08.17 17.37	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	99	%	80-120	07.08.17 17.37		
1,4-Difluorobenzene	540-36-3	106	%	80-120	07.08.17 17.37		



Certificate of Analytical Results 556918



COG Operating LLC, Artesia, NM

Music Master 27 Fed #003H

Sample Id: T1- 2'
Lab Sample Id: 556918-003

Matrix: Soil
Date Collected: 06.27.17 10.15

Date Received: 07.05.17 11.45
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MGO

Analyst: MGO

Seq Number: 3022150

Date Prep: 07.12.17 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2540	24.9	mg/kg	07.13.17 00.17		5

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3021795

Date Prep: 07.07.17 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.07.17 21.46	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.07.17 21.46	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	07.07.17 21.46	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.07.17 21.46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	07.07.17 21.46	
o-Terphenyl	84-15-1	110	%	70-135	07.07.17 21.46	



Certificate of Analytical Results 556918



COG Operating LLC, Artesia, NM

Music Master 27 Fed #003H

Sample Id: T1- 2'
Lab Sample Id: 556918-003

Matrix: Soil
Date Collected: 06.27.17 10.15

Date Received: 07.05.17 11.45
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 07.10.17 15.00

Basis: Wet Weight

Seq Number: 3021934

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.10.17 19.26	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.10.17 19.26	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.10.17 19.26	U	1
m_p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	07.10.17 19.26	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.10.17 19.26	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.10.17 19.26	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.10.17 19.26	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	87		%	80-120	07.10.17 19.26	
1,4-Difluorobenzene	540-36-3	119		%	80-120	07.10.17 19.26	



Certificate of Analytical Results 556918



COG Operating LLC, Artesia, NM

Music Master 27 Fed #003H

Sample Id: T1- 3'
Lab Sample Id: 556918-004

Matrix: Soil
Date Collected: 06.27.17 10.15

Date Received: 07.05.17 11.45
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: MGO

Analyst: MGO

Seq Number: 3022150

Date Prep: 07.12.17 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7860	49.6	mg/kg	07.13.17 00.25		10

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3021795

Date Prep: 07.07.17 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.07.17 22.07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.07.17 22.07	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	07.07.17 22.07	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.07.17 22.07	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	107	%	70-135	07.07.17 22.07		
o-Terphenyl	84-15-1	110	%	70-135	07.07.17 22.07		



Certificate of Analytical Results 556918



COG Operating LLC, Artesia, NM

Music Master 27 Fed #003H

Sample Id: T1- 3'
Lab Sample Id: 556918-004

Matrix: Soil
Date Collected: 06.27.17 10.15

Date Received: 07.05.17 11.45
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 07.07.17 16.30

Basis: Wet Weight

Seq Number: 3021836

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	07.08.17 21.06	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	07.08.17 21.06	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	07.08.17 21.06	U	1
m_p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	07.08.17 21.06	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	07.08.17 21.06	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	07.08.17 21.06	U	1
Total BTEX		<0.00201	0.00201	mg/kg	07.08.17 21.06	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	99	%	80-120	07.08.17 21.06		
1,4-Difluorobenzene	540-36-3	101	%	80-120	07.08.17 21.06		



Certificate of Analytical Results 556918



COG Operating LLC, Artesia, NM

Music Master 27 Fed #003H

Sample Id: T1- 4'
Lab Sample Id: 556918-005

Matrix: Soil
Date Collected: 06.27.17 10.15

Date Received: 07.05.17 11.45
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: MGO

Analyst: MGO

Seq Number: 3022150

Date Prep: 07.12.17 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3990	25.0	mg/kg	07.13.17 00.48		5



Certificate of Analytical Results 556918



COG Operating LLC, Artesia, NM

Music Master 27 Fed #003H

Sample Id: T1- 5'
Lab Sample Id: 556918-006

Matrix: Soil
Date Collected: 06.27.17 10.15

Date Received: 07.05.17 11.45
Sample Depth: 5 ft

Analytical Method: Chloride by EPA 300

Tech: MGO

Analyst: MGO

Seq Number: 3022150

Date Prep: 07.12.17 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2620	24.9	mg/kg	07.13.17 00.56		5

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3021795

Date Prep: 07.07.17 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	07.07.17 22.28	U	1
Diesel Range Organics (DRO)	C10C28DRO	55.3	14.9	mg/kg	07.07.17 22.28		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9	mg/kg	07.07.17 22.28	U	1
Total TPH	PHC635	55.3	14.9	mg/kg	07.07.17 22.28		1

Surrogate

1-Chlorooctane

o-Terphenyl

Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
111-85-3	107	%	70-135	07.07.17 22.28	
84-15-1	108	%	70-135	07.07.17 22.28	



Certificate of Analytical Results 556918



COG Operating LLC, Artesia, NM

Music Master 27 Fed #003H

Sample Id: T1- 5'
Lab Sample Id: 556918-006

Matrix: Soil
Date Collected: 06.27.17 10.15

Date Received: 07.05.17 11.45
Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 07.07.17 16.30

Basis: Wet Weight

Seq Number: 3021836

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.08.17 20.50	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.08.17 20.50	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.08.17 20.50	U	1
m_p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.08.17 20.50	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.08.17 20.50	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.08.17 20.50	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.08.17 20.50	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	114	%	80-120	07.08.17 20.50		
1,4-Difluorobenzene	540-36-3	109	%	80-120	07.08.17 20.50		



Certificate of Analytical Results 556918



COG Operating LLC, Artesia, NM

Music Master 27 Fed #003H

Sample Id: T2- Surf
Lab Sample Id: 556918-007

Matrix: Soil
Date Collected: 06.27.17 11.00

Date Received: 07.05.17 11.45

Analytical Method: Chloride by EPA 300

Tech: MGO

Analyst: MGO

Seq Number: 3022150

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Date Prep: 07.12.17 12.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1230	4.95	mg/kg	07.13.17 01.03		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3021795

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Date Prep: 07.07.17 16.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.07.17 22.49	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.07.17 22.49	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	07.07.17 22.49	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.07.17 22.49	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	107	%	70-135	07.07.17 22.49		
o-Terphenyl	84-15-1	103	%	70-135	07.07.17 22.49		



Certificate of Analytical Results 556918



COG Operating LLC, Artesia, NM

Music Master 27 Fed #003H

Sample Id: T2- Surf
Lab Sample Id: 556918-007

Matrix: Soil
Date Collected: 06.27.17 11.00

Date Received: 07.05.17 11.45

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 07.07.17 16.30

Basis: Wet Weight

Seq Number: 3021836

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	07.08.17 20.34	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	07.08.17 20.34	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	07.08.17 20.34	U	1
m_p-Xylenes	179601-23-1	0.00457	0.00402	mg/kg	07.08.17 20.34		1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	07.08.17 20.34	U	1
Total Xylenes	1330-20-7	0.00457	0.00201	mg/kg	07.08.17 20.34		1
Total BTEX		0.00457	0.00201	mg/kg	07.08.17 20.34		1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	95		%	80-120	07.08.17 20.34	
1,4-Difluorobenzene	540-36-3	91		%	80-120	07.08.17 20.34	



Certificate of Analytical Results 556918



COG Operating LLC, Artesia, NM

Music Master 27 Fed #003H

Sample Id: T2- 1'
Lab Sample Id: 556918-008

Matrix: Soil
Date Collected: 06.27.17 11.00

Date Received: 07.05.17 11.45
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: MGO

Analyst: MGO

Seq Number: 3022150

Date Prep: 07.12.17 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	203	4.97	mg/kg	07.12.17 23.54		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3021795

Date Prep: 07.07.17 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	07.07.17 23.10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	07.07.17 23.10	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9	mg/kg	07.07.17 23.10	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	07.07.17 23.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	117	%	70-135	07.07.17 23.10	
o-Terphenyl	84-15-1	115	%	70-135	07.07.17 23.10	



Certificate of Analytical Results 556918



COG Operating LLC, Artesia, NM

Music Master 27 Fed #003H

Sample Id: T2- 1'
Lab Sample Id: 556918-008

Matrix: Soil
Date Collected: 06.27.17 11.00

Date Received: 07.05.17 11.45
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 07.07.17 16.30

Basis: Wet Weight

Seq Number: 3021836

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.08.17 20.18	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.08.17 20.18	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.08.17 20.18	U	1
m_p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.08.17 20.18	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.08.17 20.18	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.08.17 20.18	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.08.17 20.18	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	80	%	80-120	07.08.17 20.18		
4-Bromofluorobenzene	460-00-4	96	%	80-120	07.08.17 20.18		



Certificate of Analytical Results 556918



COG Operating LLC, Artesia, NM

Music Master 27 Fed #003H

Sample Id: T2- 2'
Lab Sample Id: 556918-009

Matrix: Soil
Date Collected: 06.27.17 11.00

Date Received: 07.05.17 11.45
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MGO

Analyst: MGO

Seq Number: 3022150

Date Prep: 07.12.17 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1180	4.95	mg/kg	07.13.17 01.11		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3021795

Date Prep: 07.07.17 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.07.17 23.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.07.17 23.31	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	07.07.17 23.31	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.07.17 23.31	U	1

Surrogate

1-Chlorooctane

o-Terphenyl

Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
111-85-3	99	%	70-135	07.07.17 23.31	
84-15-1	100	%	70-135	07.07.17 23.31	



Certificate of Analytical Results 556918



COG Operating LLC, Artesia, NM

Music Master 27 Fed #003H

Sample Id: T2- 2'
Lab Sample Id: 556918-009

Matrix: Soil
Date Collected: 06.27.17 11.00

Date Received: 07.05.17 11.45
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 07.07.17 16.30

Basis: Wet Weight

Seq Number: 3021836

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.08.17 20.02	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.08.17 20.02	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.08.17 20.02	U	1
m_p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	07.08.17 20.02	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.08.17 20.02	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.08.17 20.02	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.08.17 20.02	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	102	%	80-120	07.08.17 20.02		
1,4-Difluorobenzene	540-36-3	90	%	80-120	07.08.17 20.02		



Certificate of Analytical Results 556918



COG Operating LLC, Artesia, NM

Music Master 27 Fed #003H

Sample Id: T2- 3'
Lab Sample Id: 556918-010

Matrix: Soil
Date Collected: 06.27.17 11.00

Date Received: 07.05.17 11.45
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: MGO

Analyst: MGO

Seq Number: 3022150

Date Prep: 07.12.17 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7.64	4.98	mg/kg	07.13.17 01.19		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3021795

Date Prep: 07.07.17 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.07.17 23.52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.07.17 23.52	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	07.07.17 23.52	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.07.17 23.52	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	104	%	70-135	07.07.17 23.52		
o-Terphenyl	84-15-1	105	%	70-135	07.07.17 23.52		



Certificate of Analytical Results 556918



COG Operating LLC, Artesia, NM

Music Master 27 Fed #003H

Sample Id: T2- 3'
Lab Sample Id: 556918-010

Matrix: Soil
Date Collected: 06.27.17 11.00

Date Received: 07.05.17 11.45
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 07.07.17 16.30

Basis: Wet Weight

Seq Number: 3021836

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.08.17 19.46	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.08.17 19.46	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.08.17 19.46	U	1
m_p-Xylenes	179601-23-1	0.00975	0.00401	mg/kg	07.08.17 19.46		1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.08.17 19.46	U	1
Total Xylenes	1330-20-7	0.00975	0.00200	mg/kg	07.08.17 19.46		1
Total BTEX		0.00975	0.00200	mg/kg	07.08.17 19.46		1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	84		%	80-120	07.08.17 19.46	
4-Bromofluorobenzene	460-00-4	94		%	80-120	07.08.17 19.46	



Certificate of Analytical Results 556918



COG Operating LLC, Artesia, NM

Music Master 27 Fed #003H

Sample Id: T2- 4'
Lab Sample Id: 556918-011

Matrix: Soil
Date Collected: 06.27.17 11.00

Date Received: 07.05.17 11.45
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 07.12.17 12.00

Basis: Wet Weight

Seq Number: 3022150

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	134	4.97	mg/kg	07.13.17 01.26		1



Certificate of Analytical Results 556918



COG Operating LLC, Artesia, NM

Music Master 27 Fed #003H

Sample Id: T2- 5'
Lab Sample Id: 556918-012

Matrix: Soil
Date Collected: 06.27.17 11.00

Date Received: 07.05.17 11.45
Sample Depth: 5 ft

Analytical Method: Chloride by EPA 300

Tech: MGO

Analyst: MGO

Seq Number: 3022150

Date Prep: 07.12.17 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	28.3	4.99	mg/kg	07.13.17 01.34		1



Certificate of Analytical Results 556918



COG Operating LLC, Artesia, NM

Music Master 27 Fed #003H

Sample Id: T2- 7'
Lab Sample Id: 556918-013

Matrix: Soil
Date Collected: 06.27.17 11.00

Date Received: 07.05.17 11.45
Sample Depth: 7 ft

Analytical Method: Chloride by EPA 300

Tech: MGO

Analyst: MGO

Seq Number: 3022159

Date Prep: 07.12.17 18.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	34.0	4.95	mg/kg	07.13.17 04.38		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3021795

Date Prep: 07.07.17 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.08.17 00.14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.08.17 00.14	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	07.08.17 00.14	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.08.17 00.14	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	126	%	70-135	07.08.17 00.14		
o-Terphenyl	84-15-1	127	%	70-135	07.08.17 00.14		



Certificate of Analytical Results 556918



COG Operating LLC, Artesia, NM

Music Master 27 Fed #003H

Sample Id: T2- 7'
Lab Sample Id: 556918-013

Matrix: Soil
Date Collected: 06.27.17 11.00

Date Received: 07.05.17 11.45
Sample Depth: 7 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 07.10.17 15.00

Basis: Wet Weight

Seq Number: 3021934

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.10.17 19.09	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.10.17 19.09	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.10.17 19.09	U	1
m_p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	07.10.17 19.09	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.10.17 19.09	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.10.17 19.09	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.10.17 19.09	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	103	%	80-120	07.10.17 19.09		
1,4-Difluorobenzene	540-36-3	116	%	80-120	07.10.17 19.09		

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

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

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(602) 437-0330	

COG Operating LLC
Music Master 27 Fed #003H**Analytical Method: Chloride by EPA 300**

Seq Number: 3022150

MB Sample Id: 727573-1-BLK

Matrix: Solid

LCS Sample Id: 727573-1-BKS

Prep Method: E300P

Date Prep: 07.12.17

LCSD Sample Id: 727573-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	265	106	265	106	90-110	0	20	mg/kg	07.12.17 21:51	

Analytical Method: Chloride by EPA 300

Seq Number: 3022159

MB Sample Id: 727583-1-BLK

Matrix: Solid

LCS Sample Id: 727583-1-BKS

Prep Method: E300P

Date Prep: 07.12.17

LCSD Sample Id: 727583-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	274	110	270	108	90-110	1	20	mg/kg	07.13.17 04:23	

Analytical Method: Chloride by EPA 300

Seq Number: 3022150

Parent Sample Id: 556916-019

Matrix: Soil

MS Sample Id: 556916-019 S

Prep Method: E300P

Date Prep: 07.12.17

MSD Sample Id: 556916-019 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	391	250	641	100	658	107	90-110	3	20	mg/kg	07.12.17 22:14	

Analytical Method: Chloride by EPA 300

Seq Number: 3022150

Parent Sample Id: 556918-008

Matrix: Soil

MS Sample Id: 556918-008 S

Prep Method: E300P

Date Prep: 07.12.17

MSD Sample Id: 556918-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	203	249	493	116	484	113	90-110	2	20	mg/kg	07.13.17 00:02	X

Analytical Method: Chloride by EPA 300

Seq Number: 3022159

Parent Sample Id: 556918-013

Matrix: Soil

MS Sample Id: 556918-013 S

Prep Method: E300P

Date Prep: 07.12.17

MSD Sample Id: 556918-013 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	34.0	248	311	112	312	112	90-110	0	20	mg/kg	07.13.17 04:46	X



QC Summary 556918

COG Operating LLC Music Master 27 Fed #003H

Analytical Method: TPH By SW8015 Mod

Seq Number: 3021795

MB Sample Id: 727362-1-BLK

Matrix: Solid

LCS Sample Id: 727362-1-BKS

Prep Method: TX1005P

Date Prep: 07.07.17

LCSD Sample Id: 727362-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	947	95	991	99	70-135	5	35	mg/kg	07.07.17 19:43	
Diesel Range Organics (DRO)	<15.0	1000	973	97	979	98	70-135	1	35	mg/kg	07.07.17 19:43	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane	114		113		121		70-135	%	07.07.17 19:43			
o-Terphenyl	121		107		119		70-135	%	07.07.17 19:43			

Analytical Method: TPH By SW8015 Mod

Seq Number: 3021795

Parent Sample Id: 556918-001

Matrix: Soil

MS Sample Id: 556918-001 S

Prep Method: TX1005P

Date Prep: 07.07.17

MSD Sample Id: 556918-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	998	1050	105	1040	104	70-135	1	35	mg/kg	07.07.17 20:43	
Diesel Range Organics (DRO)	<15.0	998	1000	100	996	100	70-135	0	35	mg/kg	07.07.17 20:43	
Surrogate			MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane			110		111		70-135	%	07.07.17 20:43			
o-Terphenyl			113		110		70-135	%	07.07.17 20:43			

Analytical Method: BTEX by EPA 8021B

Seq Number: 3021836

MB Sample Id: 727363-1-BLK

Matrix: Solid

LCS Sample Id: 727363-1-BKS

Prep Method: SW5030B

Date Prep: 07.07.17

LCSD Sample Id: 727363-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.115	115	0.112	112	70-130	3	35	mg/kg	07.08.17 14:04	
Toluene	<0.00199	0.0996	0.112	112	0.0996	100	70-130	12	35	mg/kg	07.08.17 14:04	
Ethylbenzene	<0.00199	0.0996	0.109	109	0.103	103	71-129	6	35	mg/kg	07.08.17 14:04	
m_p-Xylenes	<0.00398	0.199	0.200	101	0.185	93	70-135	8	35	mg/kg	07.08.17 14:04	
o-Xylene	<0.00199	0.0996	0.106	106	0.109	109	71-133	3	35	mg/kg	07.08.17 14:04	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
1,4-Difluorobenzene	91		87		81		80-120	%	07.08.17 14:04			
4-Bromofluorobenzene	106		97		93		80-120	%	07.08.17 14:04			

COG Operating LLC
Music Master 27 Fed #003H

Analytical Method: BTEX by EPA 8021B

Seq Number: 3021840

MB Sample Id: 727364-1-BLK

Matrix: Solid

LCS Sample Id: 727364-1-BKS

Prep Method: SW5030B

Date Prep: 07.07.17

LCSD Sample Id: 727364-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.120	120	0.120	119	70-130	0	35	mg/kg	07.08.17 21:54	
Toluene	<0.00201	0.100	0.107	107	0.106	105	70-130	1	35	mg/kg	07.08.17 21:54	
Ethylbenzene	<0.00201	0.100	0.112	112	0.109	108	71-129	3	35	mg/kg	07.08.17 21:54	
m_p-Xylenes	<0.00402	0.201	0.200	100	0.196	97	70-135	2	35	mg/kg	07.08.17 21:54	
o-Xylene	<0.00201	0.100	0.105	105	0.109	108	71-133	4	35	mg/kg	07.08.17 21:54	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		93		85		80-120	%	07.08.17 21:54
4-Bromofluorobenzene	106		107		83		80-120	%	07.08.17 21:54

Analytical Method: BTEX by EPA 8021B

Seq Number: 3021934

MB Sample Id: 727453-1-BLK

Matrix: Solid

LCS Sample Id: 727453-1-BKS

Prep Method: SW5030B

Date Prep: 07.10.17

LCSD Sample Id: 727453-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.121	121	0.113	113	70-130	7	35	mg/kg	07.10.17 16:43	
Toluene	<0.00200	0.0998	0.117	117	0.105	105	70-130	11	35	mg/kg	07.10.17 16:43	
Ethylbenzene	<0.00200	0.0998	0.120	120	0.109	109	71-129	10	35	mg/kg	07.10.17 16:43	
m_p-Xylenes	<0.00399	0.200	0.210	105	0.191	95	70-135	9	35	mg/kg	07.10.17 16:43	
o-Xylene	<0.00200	0.0998	0.117	117	0.102	102	71-133	14	35	mg/kg	07.10.17 16:43	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	88		94		87		80-120	%	07.10.17 16:43
4-Bromofluorobenzene	85		89		90		80-120	%	07.10.17 16:43

Analytical Method: BTEX by EPA 8021B

Seq Number: 3021836

Parent Sample Id: 556913-016

Matrix: Soil

MS Sample Id: 556913-016 S

Prep Method: SW5030B

Date Prep: 07.07.17

MSD Sample Id: 556913-016 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0994	0.0969	97	0.0931	93	70-130	4	35	mg/kg	07.08.17 14:37	
Toluene	0.00203	0.0994	0.0798	78	0.0706	69	70-130	12	35	mg/kg	07.08.17 14:37	X
Ethylbenzene	<0.00199	0.0994	0.0649	65	0.0503	50	71-129	25	35	mg/kg	07.08.17 14:37	X
m_p-Xylenes	0.00709	0.199	0.114	54	0.0981	46	70-135	15	35	mg/kg	07.08.17 14:37	X
o-Xylene	<0.00199	0.0994	0.0617	62	0.0620	62	71-133	0	35	mg/kg	07.08.17 14:37	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	106		105		80-120	%	07.08.17 14:37
4-Bromofluorobenzene	100		115		80-120	%	07.08.17 14:37



QC Summary 556918

COG Operating LLC Music Master 27 Fed #003H

Analytical Method: BTEX by EPA 8021B

Seq Number: 3021840

Parent Sample Id: 556913-005

Matrix: Soil

MS Sample Id: 556913-005 S

Prep Method: SW5030B

Date Prep: 07.07.17

MSD Sample Id: 556913-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.105	105	0.101	101	70-130	4	35	mg/kg	07.08.17 22:27	
Toluene	<0.00199	0.0996	0.0955	96	0.0918	92	70-130	4	35	mg/kg	07.08.17 22:27	
Ethylbenzene	<0.00199	0.0996	0.0982	99	0.0937	94	71-129	5	35	mg/kg	07.08.17 22:27	
m_p-Xylenes	<0.00398	0.199	0.175	88	0.172	86	70-135	2	35	mg/kg	07.08.17 22:27	
o-Xylene	<0.00199	0.0996	0.103	103	0.0954	95	71-133	8	35	mg/kg	07.08.17 22:27	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	92		85		80-120	%	07.08.17 22:27
4-Bromofluorobenzene	104		86		80-120	%	07.08.17 22:27

Analytical Method: BTEX by EPA 8021B

Seq Number: 3021934

Parent Sample Id: 556932-002

Matrix: Soil

MS Sample Id: 556932-002 S

Prep Method: SW5030B

Date Prep: 07.10.17

MSD Sample Id: 556932-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.0935	94	0.102	102	70-130	9	35	mg/kg	07.10.17 17:16	
Toluene	<0.00199	0.0996	0.0778	78	0.0893	89	70-130	14	35	mg/kg	07.10.17 17:16	
Ethylbenzene	<0.00199	0.0996	0.0848	85	0.0940	94	71-129	10	35	mg/kg	07.10.17 17:16	
m_p-Xylenes	<0.00398	0.199	0.142	71	0.162	81	70-135	13	35	mg/kg	07.10.17 17:16	
o-Xylene	<0.00199	0.0996	0.0823	83	0.0874	88	71-133	6	35	mg/kg	07.10.17 17:16	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	109		103		80-120	%	07.10.17 17:16
4-Bromofluorobenzene	119		111		80-120	%	07.10.17 17:16



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

CHAIN OF CUSTODY

Page 1 of 2

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

www.xenoco.com

Phoenix, Arizona (480-355-0900)

Xenoco Quote #

Xenoco Job #

5610912

Analytical Information

Matrix Codes

Client / Reporting Information

Project Information

Company Name / Branch:

Project Name/Number:

COG Operating LLC

Music Master 27 Fed #003H

Company Address:

Project Location:

2407 PECOS Avenue Artesia NM 88210

Email:

Music Master 27 Fe

alib@xenoco.com dneal2@xenoco.com flaskel@xenoco.com

Invoice To: COG Operating LLC

Project Contact: Aaron Lieb

Attn: Robert McNeill

Sampler's Name: Aaron Lieb

600 W. Illinois
Midland TX 79701

Po Number:

Field ID / Point of Collection

TPH/ EXTENDED

BTEX

Chloride

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

Sample Depth

Date

Time

Matrix

of bottles

HCl

NaOH/Zn Acetate

HNO3

H2SO4

NaOH

NaHSO4

MeOH

NONE

Field Comments

1 T1 - SCULF

1

6/21/17

10:15am

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2 T1 - 1'

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3 T1 - 2'

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4 T1 - 3'

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5 T1 - 4'

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6 T1 - 5'

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1

Turnaround Time (Business days)

Data Deliverable Information

No

Temp: 3.8

IR ID: R-8

CF: (0-6: -0.2°C)

(6-23: +0.2°C)

Corrected Temp: 3.4

Same Day TAT

Level II Std QC

Level IV (Full Data Pkg /raw data)

Next Day EMERGENCY

Level III Std QC+ Forms

TRRP Level IV

2 Day EMERGENCY

Contract TAT

Level 3 (CLP Forms)

UST / RG -411

3 Day EMERGENCY

TRRP Checklist

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

Relinquished by Sampler:

Date Time:

Received By:

Date Time:

Relinquished By:

Date Time:

Received By:

Date Time:

Received By:

Date Time:

Received By:

Date Time:

Received By:

Date Time:

Received By:

Relinquished by:

Date Time:

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Date Time:

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Relinquished by:

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Relinquished By:

Date Time:

Received By:

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Received By:

Date Time:

Received By:

Date Time:

Received By:

Date Time:

Received By:

Relinquished by:



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

CHAIN OF CUSTODY

Page 2 of 2

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

www.xenco.com

Phoenix, Arizona (480-355-0900)

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes			
Company Name / Branch: COG Operating LLC				Project Name/Number: Music Master 27 Fed #003H											
Company Address: 2407 PECOS Avenue Artesia NM 88210				Project Location: Music Master 27 Fe											
Email: alleb@concho.com dneelz@concho.com rlaskell@concho.com				Invoice To: COG Operating LLC Attn: Robert McNeill 600 W. Illinois Midland TX 79701											
Project Contact: Aaron Lieb				PO Number:											
Sampler's Name: Aaron Lieb															
No.		Field ID / Point of Collection		Collection		Number of preserved bottles		TPH/ EXTENDED		BTEX		Chloride		Field Comments	
		Sample Depth		Date		Time		Matrix		# of bottles		HCl		NaOH/Zn Acetate	
1		T2 - SURF		6/27/17		11:00 AM		S		1					
2		T2 - 1'													
3		T2 - 2'													
4		T2 - 3'													
5		T2 - 4'													
6		T2 - 5'													
7		T2 - 7'													
8															
9															
10															
Turnaround Time (Business days)				Data Deliverable Information											
☐ Same Day TAT				☐ 5 Day TAT											
☐ Next Day EMERGENCY				☐ 7 Day TAT											
☐ 2 Day EMERGENCY				☐ Contract TAT											
☐ 3 Day EMERGENCY				☐ TRRP Checklist											
TAT Starts Day received by Lab, if received by 5:00 pm															
Relinquished by Sampler:				Relinquished By:											
Date Time: 7/5/17 10:30 AM				Received By: 1 dead bottle 10:30 AM											
Relinquished by:				Relinquished By:											
Date Time:				Received By:											
Relinquished by:				Relinquished By:											
Date Time:				Received By:											
Custody Seal #				Preserved where applicable											
On Ice				Cooler Temp.											
Thermo. Corr. Factor															

Temp: 3.9 IR ID: R-8

CF: (0-6; -0.2°C)

(6-23; +0.2°C)

Corrected Temp: 3.4

FED-EX / UPS: Tracking #

55009118

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



XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In



Client: COG Operating LLC

Date/ Time Received: 07/05/2017 11:45:00 AM

Work Order #: 556918

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	4.9
#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)?	No
#21 VOC samples have zero headspace?	N/A

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

Analyst: ss

PH Device/Lot#:

Checklist completed by:

Shawnee Smith

Date: 07/06/2017

Checklist reviewed by:

Kelsey Brooks

Date: 07/06/2017

Analytical Report 566953

**for
Tetra Tech- Midland**

Project Manager: Ike Tavaréz

COG- Music Masters 27 Federal #3 H

212c-MD-00958 Task #16

07-NOV-17

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):

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

Xenco-Dallas (EPA Lab code: TX01468):

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

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

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

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

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

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

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



07-NOV-17

Project Manager: **Ike Tavaréz**

Tetra Tech- Midland

4000 N. Big Spring Suite 401

Midland, TX 79705

Reference: XENCO Report No(s): **566953**

COG- Music Masters 27 Federal #3 H

Project Address: Lea County, New Mexico

Ike Tavaréz:

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) 566953. 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. 566953 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Mike Kimmel

Client Services Manager

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

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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



Sample Cross Reference 566953



Tetra Tech- Midland, Midland, TX

COG- Music Masters 27 Federal #3 H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH #1 (0-1')	S	10-26-17 00:00		566953-001
BH #1 (2-3')	S	10-26-17 00:00		566953-002
BH #1 (4-5')	S	10-26-17 00:00		566953-003
BH #1 (6-7')	S	10-26-17 00:00		566953-004
BH #1 (9-10')	S	10-26-17 00:00		566953-005
BH #1 (14-15')	S	10-26-17 00:00		566953-006
BH #1 (19-20')	S	10-26-17 00:00		566953-007
BH #2 (10')	S	10-26-17 00:00		566953-008



CASE NARRATIVE

Client Name: Tetra Tech- Midland

Project Name: COG- Music Masters 27 Federal #3 H

Project ID: 212c-MD-00958 Task #16
Work Order Number(s): 566953

Report Date: 07-NOV-17
Date Received: 10/30/2017

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3032549 Inorganic Anions by EPA 300/300.1

Lab Sample ID 566953-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 566953-001, -002, -003, -004, -005, -006, -007, -008.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.



Certificate of Analysis Summary 566953

Tetra Tech- Midland, Midland, TX

Project Name: COG- Music Masters 27 Federal #3 H



Project Id: 212c-MD-00958 Task #16

Contact: Ike Tavaréz

Project Location: Lea County, New Mexico

Date Received in Lab: Mon Oct-30-17 04:37 pm

Report Date: 07-NOV-17

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	566953-001	566953-002	566953-003	566953-004	566953-005	566953-006
	<i>Field Id:</i>	BH #1 (0-1')	BH #1 (2-3')	BH #1 (4-5')	BH #1 (6-7')	BH #1 (9-10')	BH #1 (14-15')
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Oct-26-17 00:00	Oct-26-17 00:00	Oct-26-17 00:00	Oct-26-17 00:00	Oct-26-17 00:00	Oct-26-17 00:00
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	Nov-06-17 17:00	Nov-06-17 17:00	Nov-06-17 17:00	Nov-06-17 17:00	Nov-06-17 17:00	Nov-06-17 17:00
	<i>Analyzed:</i>	Nov-06-17 20:19	Nov-06-17 20:38	Nov-06-17 20:45	Nov-06-17 20:51	Nov-06-17 20:57	Nov-06-17 21:16
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		4.32 2.50	73.5 4.94	3230 25.0	54.7 4.92	41.5 4.95	200 4.90

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

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Version: 1.9%

Mike Kimmel
Client Services Manager



Certificate of Analysis Summary 566953

Tetra Tech- Midland, Midland, TX

Project Name: COG- Music Masters 27 Federal #3 H



Project Id: 212c-MD-00958 Task #16

Contact: Ike Tavaréz

Project Location: Lea County, New Mexico

Date Received in Lab: Mon Oct-30-17 04:37 pm

Report Date: 07-NOV-17

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	566953-007	566953-008				
	Field Id:	BH #1 (19-20')	BH #2 (10')				
	Depth:						
	Matrix:	SOIL	SOIL				
	Sampled:	Oct-26-17 00:00	Oct-26-17 00:00				
Inorganic Anions by EPA 300/300.1	Extracted:	Nov-06-17 17:00	Nov-06-17 17:00				
	Analyzed:	Nov-06-17 21:23	Nov-06-17 21:29				
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		36.0 4.92	14.2 4.99				

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Version: 1.0%

Mike Kimmel
Client Services Manager

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

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

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



BS / BSD Recoveries



Project Name: COG- Music Masters 27 Federal #3 H

Work Order #: 566953

Project ID: 212c-MD-00958 Task #16

Analyst: MNV

Date Prepared: 11/06/2017

Date Analyzed: 11/06/2017

Lab Batch ID: 3032549

Sample: 7633899-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Chloride	<5.00	250	250	100	250	251	100	0	90-110	20	

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

Blank Spike Recovery [D] = $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] = $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



Form 3 - MS / MSD Recoveries



Project Name: COG- Music Masters 27 Federal #3 H

Work Order # : 566953

Project ID: 212c-MD-00958 Task #16

Lab Batch ID: 3032549

QC- Sample ID: 566953-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 11/06/2017

Date Prepared: 11/06/2017

Analyst: MNV

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<4.98	249	280	112	249	278	112	1	90-110	20	X

Lab Batch ID: 3032549

QC- Sample ID: 566954-003 S

Batch #: 1 Matrix: Soil

Date Analyzed: 11/06/2017

Date Prepared: 11/06/2017

Analyst: MNV

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	60.9	248	315	102	248	313	102	1	90-110	20	

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

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

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

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

Analysis Request of Custody Record



Tetra Tech, Inc.

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

Client Name:		COG		Site Manager:		Ike Tavaraz	
Project Name:		Music Masters 27 Federal #3H					
Project Location:		(county, state)		Project #:		212C-MD-00958 Task#16	
Invoice to:		COG-Becky Haskell		Sampler Signature:		Mike Carmona	
Receiving Laboratory:		Xenco Midland Tx		Comments:			

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING		MATRIX		PRESERVATIVE METHOD		# CONTAINERS	FILTERED (Y/N)	LAB USE ONLY	REMARKS:		
		DATE	TIME	WATER	SOIL	HCL	HNO ₃					ICE	None
	BH #1 (0-1')	10/26/2017		X				X					
	BH #1 (2-3')	10/26/2017		X				X					
	BH #1 (4-5')	10/26/2017		X				X					
	BH #1 (6-7')	10/26/2017		X				X					
	BH #1 (9-10')	10/26/2017		X				X					
	BH #1 (14-15')	10/26/2017		X				X					
	BH #1 (19-20')	10/26/2017		X				X					
	BH #2 (10')	10/26/2017		X				X					

LAB USE ONLY	REMARKS:
Temp: 10.5	IR ID: R-8
CF: (0-6: -0.2°C)	
Corrected Temp: 10.7	

ORIGINAL COPY

(Circle) HAND DELIVERED

(Circle or Specify Method No.)

ANALYSIS REQUEST

SLUGS



XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In



Client: Tetra Tech- Midland

Date/ Time Received: 10/30/2017 04:37:00 PM

Work Order #: 566953

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)?	10.7
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Shawnee Smith

Date: 10/31/2017

Checklist reviewed by:

Kelsey Brooks

Date: 10/31/2017

Appendix D

SAMPLE LOG

Client:	COG
Site Name	Music Master 27 Federal #3H
Boring:	BH-1
GPS	32.10708, -103.35424
Project #:	212C-MD-00958.16
Total Depth	20'
Date Installed:	10/26/2017

[illegible]

SAMPLE LOG

Client:	COG
Site Name	Music Master 27 Federal #3H
Boring:	BH-2
GPS	32.10708, -103.35413
Project #:	212C-MD-00958.16
Total Depth	10'
Date Installed:	10/26/2017

[illegible]