

July 29, 2020

Oil Conservation Division, District 1 1625 N. French Dr. Hobbs, NM 88240

Ryan Mann New Mexico State Land Office 1001 S. Atkinson Roswell, NM 88230

Closure Report:

Pygmy 27 State #001H API#: 30-025-40352 RP#: 1RP-5514

Incident#: NAB1915035343

DOR: April 24, 2019 GPS: 32.4450 -103.5723

Unit Letter P, Section 28, Township 21 South, Range 33 East

Lea County, New Mexico

To Whom It May Concern,

COG Operating, LLC (COG) is pleased to submit the following closure report in response to a release that occurred at the Pygmy 27 State #001H. The release was located in Unit Letter P, Section 28, Township 21 South and Range 33 East in Lea County, New Mexico. More specifically the latitude and longitude for the release are 32.4450 North and -103.5723 West.

BACKGROUND

The release was discovered on April 24, 2019. A C-141 report was submitted to the New Mexico Oil Conservation Division (NMOCD) and the New Mexico State Land Office (NMSLO). The C-141 is presented in Appendix A. The release was caused by ruptured flowline. The release consisted of approximately one-hundred and twenty-five (125) barrels (bbls) of produced water. Vacuum trucks were utilized to recover approximately one-hundred and twenty (120) bbls of fluid.

The release impacted the lease road and the adjacent pasture. Due to traffic and safety concerns initially only the pasture was remediated and a deferral report was submitted. NMOCD denied deferral and required that remediation of the impacted lease road proceed. The impacted area on the lease road has been successfully remediated.

GROUNDWATER AND REGULATORY FRAMEWORK

According to the United States Geological Survey (USGS) the nearest water well with measurement data (322702103344002) indicates that groundwater in the project vicinity is approximately one-hundred and seventy-eight (178) feet below ground surface (BGS). The water well information is shown in Appendix B.

A risk based evaluation and site determinations were performed in accordance to the New Mexico Oil Conservation Division (NMOCD) Rule (Title 19 Chapter 15 Part 29) for releases on oil and gas development and production in New Mexico (effective August 14, 2018). According to the site characterization evaluation, no other receptors (water wells, playas, karst, water course, lake beds or ordinance boundaries) were located within each specific boundaries or distance from the site. The groundwater data and the site characterization evaluation data are summarized in Appendix B. The delineation and closure criteria are listed below:

GENERAL SITE CHARACTERIZATION AND GROUNDWATER:

Site Characterization	Average Groundwater Depth (ft.)
None Located	178 feet

DELINEATION AND CLOSURE CRITERIA:

Table I Closure Criteria	
Chlorides	20,000 mg/kg
TPH (GRO and DRO and MRO)	2,500 mg/kg
TPH (GRO and DRO)	1,000 mg/kg
Benzene	10 mg/kg
Total BTEX	50 mg/kg

Remedial Actions

- The impacted area was excavated to depths ranging from two (2) feet BGS to five (5) feet BGS.
- All of the excavated material was hauled to an NMOCD approved solid waste disposal facility.
- Confirmation soil samples were taken from the bottom and sidewalls of the excavated areas per NMED 19.15.29.13.
- Upon receipt of acceptable analytical results from the confirmation soil sampling activities the excavation was backfilled with clean "like" material.

SITE RECLAMATION AND RESTORATION

Per NMED 19.15.29.13 reclamation of the pasture area has been performed by removing the impacted soil containing chloride concentrations greater than 600 mg/kg within the first four (4) feet BGS. Once excavated, soil samples were collected from the bottom and sidewalls of the excavation to confirm the removal of impacted soil greater than 600 mg/kg of chlorides. The backfill material was noncontaminated with concentrations below 600 mg/kg of chlorides. The surface was left in a rough condition to approximate natural surface deviations. The site will be mechanically seeded with the surface lease holders preferred seed mixture.

CLOSURE REQUEST

COG Operating, LLC respectfully requests that the New Mexico Oil Conservation Division and the New Mexico State Land Office grant closure approval for the Pygmy 27 State #001H incident that occurred on April 24, 2019.

Should you have any questions or concerns please do not hesitate to contact me.

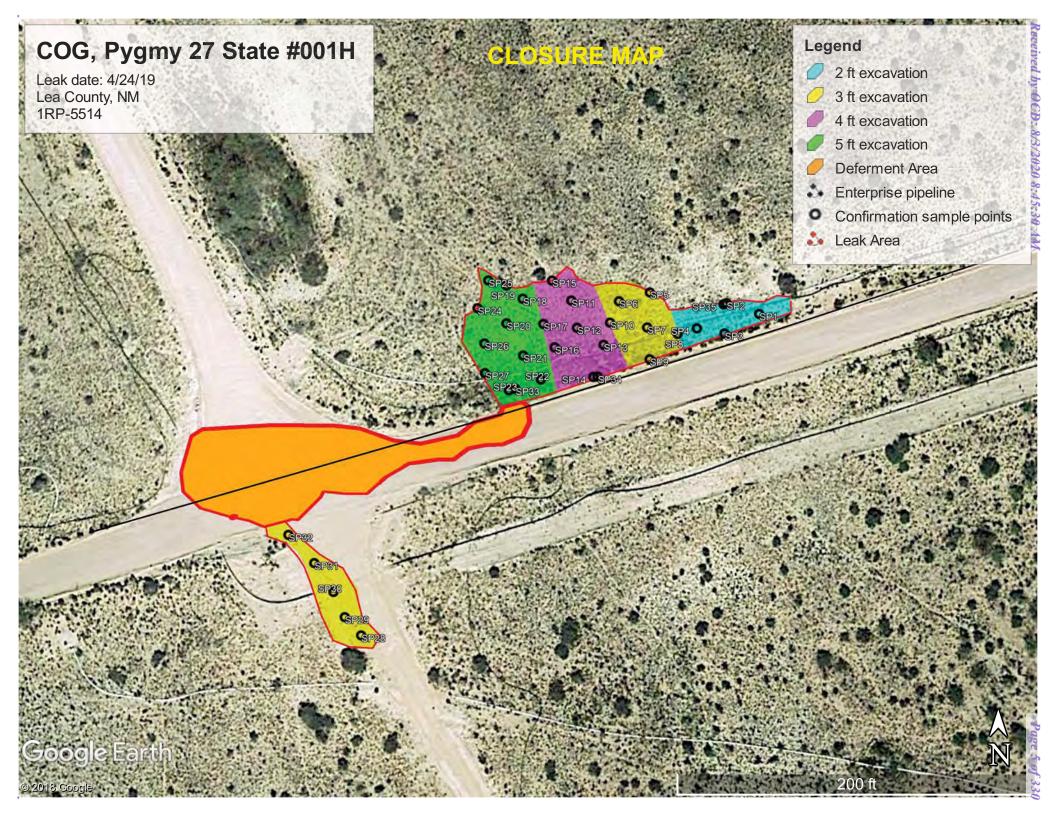
Sincerely,

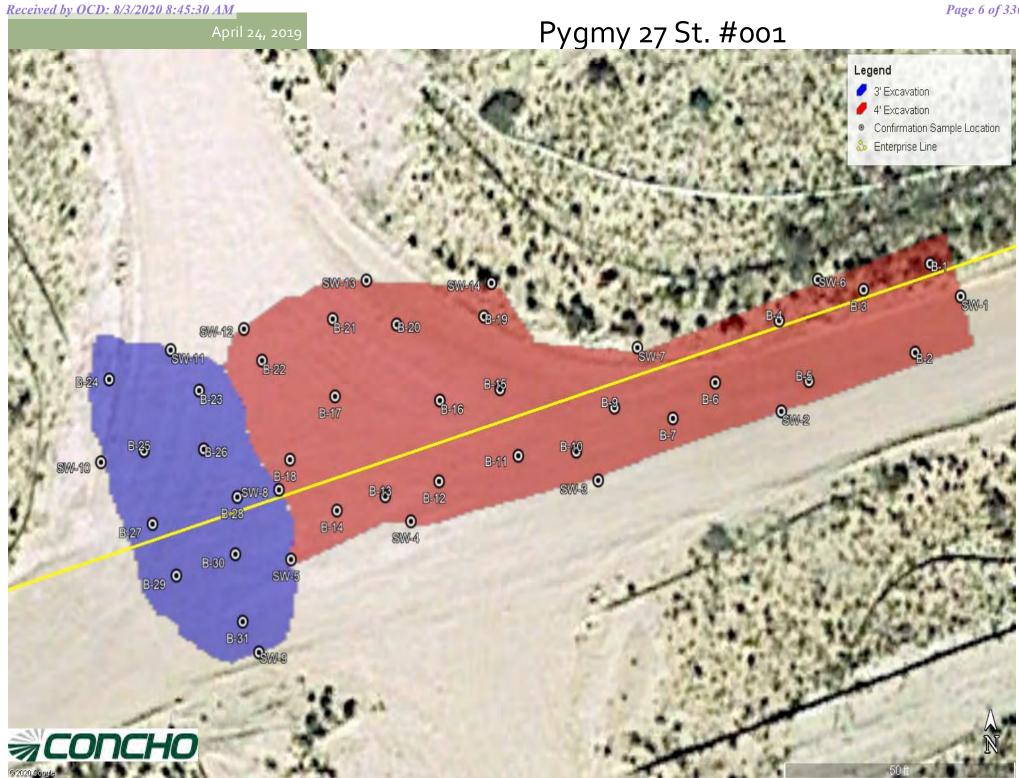
Sheldon L. Hitchcock HSE Coordinator

slhitchcock@concho.com

Sheldon quitam

FIGURES





TABLES

Table 1
COG Operating LLC.
Pygmy 27 State #001H
Lea County, New Mexico

0I- ID	Sample	OI- D-1-	Soil	Status			TP	H (mg/kg)				Benzene	Total BTEX	Chloride
Sample ID	Depth (ft)	Sample Date	In-Situ	Removed	GRO	DRO	MRO	Total	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)
IMOCD RRAL L	imits (mg/kg)				-	-	-	2,500	-	-	1,000	10	50	20,000
SP-1	2	7/21/2019	Х		<10.0	<10.0	<10.0	0.0	<10.0	<10.0	0.0	<0.50	<0.30	32
SP-2	SIDEWALL	7/23/2019		Х	<10.0	17.6	10.8	28.4	17.6	10.8	28.4	<0.50	<0.30	10,800
SP-3	SIDEWALL	7/21/2019	Х		<10.0	<10.0	<10.0	0.0	<10.0	<10.0	0.0	<0.50	<0.30	16
SP-4	2	7/21/2019	Х		<10.0	<10.0	<10.0	0.0	<10.0	<10.0	0.0	<0.50	<0.30	32
SP-5	SW	7/23/2019	X		<10.0	<10.0	<10.0	0.0	<10.0	<10.0	0.0	<0.50	<0.30	224
SP-6	3	7/23/2019	Х		<10.0	<10.0	<10.0	0.0	<10.0	<10.0	0.0	<0.50	<0.30	320
SP-7	3	7/23/2019	Χ		<10.0	<10.0	<10.0	0.0	<10.0	<10.0	0.0	<0.50	<0.30	512
SP-8	SIDEWALL	7/24/2019	Χ		<10.0	<10.0	<10.0	0.0	<10.0	<10.0	0.0	<0.50	<0.30	96
SP-9	SIDEWALL	7/23/2019		Х	<10.0	<10.0	<10.0	0.0	<10.0	<10.0	0.0	<0.50	<0.30	3,280
SP-9	SIDEWALL	6/3/2020	Х		#	#	#	#	#	#	#	#	#	413
SP-10	SIDEWALL	7/23/2019	Х		<10.0	<10.0	<10.0	0.0	<10.0	<10.0	0.0	<0.50	<0.30	64
SP-11	4	7/23/2019	X		<10.0	<10.0	<10.0	0.0	<10.0	<10.0	0.0	<0.50	<0.30	80
SP-12	3	7/23/2019		Х	<10.0	<10.0	<10.0	0.0	<10.0	<10.0	0.0	<0.50	<0.30	784
SP-12	4	7/25/2019	Х		<10.0	<10.0	<10.0	0.0	<10.0	<10.0	0.0	<0.50	<0.30	112
SP-13	3	7/23/2019	Х		<10.0	<10.0	<10.0	0.0	<10.0	<10.0	0.0	<0.50	<0.30	912
SP-13	4	7/25/2019	X		<10.0	<10.0	<10.0	0.0	<10.0	<10.0	0.0	<0.50	<0.30	160
SP-14	SIDEWALL	7/23/2019		Х	<10.0	<10.0	<10.0	0.0	<10.0	<10.0	0.0	<0.50	<0.30	5,680
SP-15	SIDEWALL	7/23/2019	X		<10.0	<10.0	<10.0	0.0	<10.0	<10.0	0.0	<0.50	<0.30	608
SP-15	SIDEWALL	7/25/2019	Х	.,	<10.0	<10.0	<10.0	0.0	<10.0	<10.0	0.0	<0.50	<0.30	80
SP-16	3	7/23/2019		Х	<10.0	<10.0	<10.0	0.0	<10.0	<10.0	0.0	<0.50	<0.30	640
SP-16	4	7/25/2019	X		<10.0	<10.0	<10.0	0.0	<10.0	<10.0	0.0	<0.50	<0.30	160
SP-17	SIDEWALL	7/23/2019	X		<10.0	<10.0	<10.0	0.0	<10.0	<10.0	0.0	<0.50	<0.30	80
SP-18	5	7/24/2019	X		<10.0	<10.0	<10.0	0.0	<10.0	<10.0	0.0	<0.50	<0.30	160
SP-19	SIDEWALL	7/24/2019	Х		<10.0	<10.0	<10.0	0.0	<10.0	<10.0	0.0	<0.50	<0.30	16
SP-20	5	7/24/2019			<10.0	<10.0	<10.0	0.0	<10.0	<10.0	0.0	<0.50	<0.30	288
SP-21	5	7/24/2019	.,		<10.0	<10.0	<10.0	0.0	<10.0	<10.0	0.0	<0.50	<0.30	272
SP-22	5	7/24/2019	Х		<10.0	<10.0	<10.0	0.0	<10.0	<10.0	0.0	<0.50	<0.30	304
SP-23	4	7/24/2019		Х	<10.0	<10.0	<10.0	0.0	<10.0	<10.0	0.0	<0.50	<0.30	13,600
SP-24 SP-25	SIDEWALL	7/24/2019	X		<10.0	<10.0	<10.0	0.0	<10.0	<10.0	0.0	<0.50	<0.30	32 400
	5	7/24/2019	X		<10.0	<10.0	<10.0	0.0	<10.0	<10.0	0.0	<0.50	<0.30	
SP-26 SP-27	SIDEWALL	7/24/2019 7/24/2019	X		<10.0 <10.0	<10.0 <10.0	<10.0 <10.0	0.0	<10.0 <10.0	<10.0 <10.0	0.0	<0.50 <0.50	<0.30 <0.30	400 368
SP-28	3	7/25/2019	X		<10.0	<10.0	<10.0	0.0	<10.0	<10.0	0.0	<0.50	<0.30	96
SP-28 SP-29	3	7/25/2019	X		<10.0	<10.0	<10.0	0.0	<10.0	<10.0	0.0	<0.50	<0.30	32
SP-29 SP-30	3	7/21/2019	X		<10.0	<10.0	<10.0	0.0	<10.0	<10.0	0.0	<0.50	<0.30	64
SP-30 SP-31	3	7/29/2019	X		<10.0	<10.0	<10.0	0.0	<10.0	<10.0	0.0	<0.50	<0.30	48
SP-32	3	7/29/2019	X		<10.0	<10.0	<10.0	0.0	<10.0	<10.0	0.0	<0.50	<0.30	64
SP-32	5	7/29/2019	X		<10.0	<10.0	<10.0	0.0	<10.0	<10.0	0.0	<0.50	<0.30	80
SP-34	SIDEWALL	7/29/2019	X		<10.0	<10.0	<10.0	0.0	<10.0	<10.0	0.0	<0.50	<0.30	80
SP-35	SIDEWALL	7/29/2019	X		<10.0	<10.0	<10.0	0.0	<10.0	<10.0	0.0	<0.50	<0.30	64
OI -33	SIDEWALL	112312013	^		×10.0	\10.0	×10.0	0.0	\10.0	×10.0	0.0	\U.JU	\U.30	04
								 						

Table 1
COG Operating LLC.
Pygmy 27 State #001H
Lea County, New Mexico

Commis ID	Sample	Sample Date	Soil	Status			TP	H (mg/kg)				Benzene	Total BTEX	Chloride
Sample ID	Depth (ft)	Sample Date	In-Situ	Removed	GRO	DRO	MRO	Total	GRO	DRO	Total	(mg/kg)	kg) (mg/kg)	(mg/kg)
B-1	4	6/3/2020	Х		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	371
B-2	4	6/3/2020	Х		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	380
B-3	4	6/3/2020	Х		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	381
B-4	4	6/3/2020	Х		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	204
B-5	4	6/3/2020	Х		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	186
B-6	4	6/3/2020	Х		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	234
B-7	4	6/3/2020	Х		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	223
B-8	4	6/3/2020	Х		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	200
B-9	4	6/3/2020	Х		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	231
B-10	4	6/3/2020	X		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	246
B-11	4	6/4/2020	Х		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	197
B-12	4	6/4/2020	Х		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	183
B-13	4	6/4/2020	Х		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	178
B-14	4	6/4/2020	Х		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	191
B-15	4	6/4/2020	Х		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	106
B-16	4	6/4/2020	Х		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	108
B-17	4	6/4/2020	Х		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	111
B-18	4	6/4/2020	Х		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	105
B-19	4	6/4/2020	Х		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	105
B-20	4	6/8/2020	Х		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	205
B-21	4	6/8/2020	Х		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	206
B-22	4	6/8/2020	Х		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	208
B-23	3	6/8/2020	Х		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	208
B-24	3	6/8/2020	Х		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	573
B-25	3	6/8/2020	Х		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	417
B-26	3	6/8/2020	Х		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	215
B-27	3	6/8/2020	Х		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	238
B-28	3	6/11/2020	Х		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	296
B-29	3	6/11/2020	Х		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	208
B-30	3	6/11/2020	Х		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	272
B-31	3	6/11/2020	X		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	221
SW-1	SIDEWALL	6/3/2020	X		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	<10.0
SW-2	SIDEWALL	6/3/2020	Х		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	153
SW-3	SIDEWALL	6/3/2020	Х		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	448
SW-4	SIDEWALL	6/4/2020	Х		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	134
SW-5	SIDEWALL	6/4/2020	Х		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	110
SW-6	SIDEWALL	6/4/2020	Х		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	106
SW-7	SIDEWALL	6/8/2020	Х		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	88
SW-8	SIDEWALL	6/8/2020	Х		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	107
SW-9	SIDEWALL	6/8/2020	Х		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	67
SW-10	SIDEWALL	6/8/2020	Х		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	88
SW-11	SIDEWALL	6/11/2020		Х	<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	776
SW-11	SIDEWALL	6/15/2020	Х		#	#	#	#	#	#	#	#	#	163

Table 1 COG Operating LLC. Pygmy 27 State #001H Lea County, New Mexico

	Sample	Sample	Soil Status		TPH (mg/kg)							Benzene	Total BTEX	Chloride
Sample ID	Depth (ft) Sample Date	In-Situ	Removed	GRO	DRO	MRO	Total	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	
SW-12	SIDEWALL	6/11/2020	Х		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	190
SW-13	SIDEWALL	6/11/2020	Х		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	54
SW-14	SIDEWALL	6/11/2020	Х		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	354

(#) Not Analyzed

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 Department

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible	Party			OGRID	OGRID				
Contact Nam	ne			Contact T	Contact Telephone				
Contact ema	il			Incident #	Incident # (assigned by OCD)				
Contact mail	ing address			,					
			Location	of Release S	ource				
Latitude				Longitude					
			(NAD 83 in de	cimal degrees to 5 deci	mal places)				
Site Name				Site Type					
Date Release	Discovered			API# (if ap	plicable)				
			T						
Unit Letter	Section	Township	Range	Cou	nty	-			
	Materia		Nature and	Name:	Release	e volumes provided below)			
Crude Oi	1	Volume Release	ed (bbls)		Volume Recovered (bbls)				
Produced	Water	Volume Release	ed (bbls)		Volume Recovered (bbls)				
		Is the concentrate produced water	tion of dissolved c >10,000 mg/l?	chloride in the	he Yes No				
Condensa	ite	Volume Release	ed (bbls)		Volume Reco	overed (bbls)			
☐ Natural G	ias	Volume Release	ed (Mcf)		Volume Reco	overed (Mcf)			
Other (de	scribe)	Volume/Weight	Released (provid	e units)	Volume/Weight Recovered (provide units)				
Cause of Release									

Received by OCD: 8/3/2020 8:45:30 AM Form C-141 State of New Mexico Page 2 Oil Conservation Division

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Incident ID	
District RP	
Facility ID	
Application ID	

Was this a major	If YES, for what reason(s) does the respon	nsible party consider this a major release?
release as defined by 19.15.29.7(A) NMAC?		
19.13.29.7(A) NMAC:		
☐ Yes ☐ No		
If YES, was immediate no	otice given to the OCD? By whom? To wh	nom? When and by what means (phone, email, etc)?
	7 15	
	Initial R	esponse
The responsible p	party must undertake the following actions immediated	y unless they could create a safety hazard that would result in injury
□ TI	1 1	
	ease has been stopped.	
	s been secured to protect human health and	
		likes, absorbent pads, or other containment devices.
All free liquids and re	ecoverable materials have been removed an	d managed appropriately.
If all the actions described	d above have <u>not</u> been undertaken, explain	why:
Per 19.15.29.8 B. (4) NM	AC the responsible party may commence r	emediation immediately after discovery of a release. If remediation
has begun, please attach	a narrative of actions to date. If remedial	efforts have been successfully completed or if the release occurred
within a lined containmen	nt area (see 19.15.29.11(A)(5)(a) NMAC), p	please attach all information needed for closure evaluation.
		best of my knowledge and understand that pursuant to OCD rules and
		fications and perform corrective actions for releases which may endanger OCD does not relieve the operator of liability should their operations have
failed to adequately investig	ate and remediate contamination that pose a three	at to groundwater, surface water, human health or the environment. In
addition, OCD acceptance of and/or regulations.	f a C-141 report does not relieve the operator of	responsibility for compliance with any other federal, state, or local laws
Printed Name:		Title:
Signature:	n Hitam	Date:
		Telephone:
OCD Only		
Received by:		Date:

Received by OCD: 8/3/2020 8:45:30 AM State of New Mexico
Page 3 Oil Conservation Division

	Page 14 of 330
Incident ID	
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	(ft bgs)					
Did this release impact groundwater or surface water?						
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☐ No					
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?						
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☐ No					
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☐ No					
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☐ No					
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☐ No					
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☐ No					
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☐ No					
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☐ No					
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☐ No					
Did the release impact areas not on an exploration, development, production, or storage site?	☐ Yes ☐ No					
Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and ver contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.	tical extents of soil					
Characterization Report Checklist: Each of the following items must be included in the report.						
Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells. Field data Data table of soil contaminant concentration data Depth to water determination Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release Boring or excavation logs Photographs including date and GIS information Topographic/Aerial maps Laboratory data including chain of custody						

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

Received by OCD: 8/3/2020 8:45:30 AM State of New Mexico
Page 4 Oil Conservation Division

	Page 15 of 33
Incident ID	
District RP	
Facility ID	
Application ID	

I hereby certify that the information given above is true and complete to the regulations all operators are required to report and/or file certain release not public health or the environment. The acceptance of a C-141 report by the Gailed to adequately investigate and remediate contamination that pose a threaddition, OCD acceptance of a C-141 report does not relieve the operator of and/or regulations.	ifications and perform corrective actions for releases which may endanger OCD does not relieve the operator of liability should their operations have eat to groundwater, surface water, human health or the environment. In
Printed Name:	Title:
Signature: Sheldon guitan	Date:
email:	Telephone:
OCD Only	
Received by:	Date:

Received by OCD: 8/3/2020 8:45:30 AM State of New Mexico
Page 5 Oil Conservation Division

	rage 10 of 3
Incident ID	
District RP	
Facility ID	
Application ID	

Remediation Plan

Remediation Plan Checklist: Each of the following items must be	e included in the plan.									
□ Detailed description of proposed remediation technique □ Scaled sitemap with GPS coordinates showing delineation points □ Estimated volume of material to be remediated □ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC □ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)										
<u>Deferral Requests Only</u> : Each of the following items must be con	firmed as part of any request for deferral of remediation.									
Contamination must be in areas immediately under or around predeconstruction.	oduction equipment where remediation could cause a major facility									
Extents of contamination must be fully delineated.										
Contamination does not cause an imminent risk to human health	, the environment, or groundwater.									
	e and remediate contamination that pose a threat to groundwater, acceptance of a C-141 report does not relieve the operator of									
Printed Name:	Title:									
Signature: Sheldon Jutan	Date:									
email:	Telephone:									
OCD Only										
Received by:	Date:									
☐ Approved ☐ Approved with Attached Conditions of	Approval									
Signature:	Date:									

Received by OCD: 8/3/2020 8:45:30 AM State of New Mexico
Page 6 Oil Conservation Division

Page 17 of 330

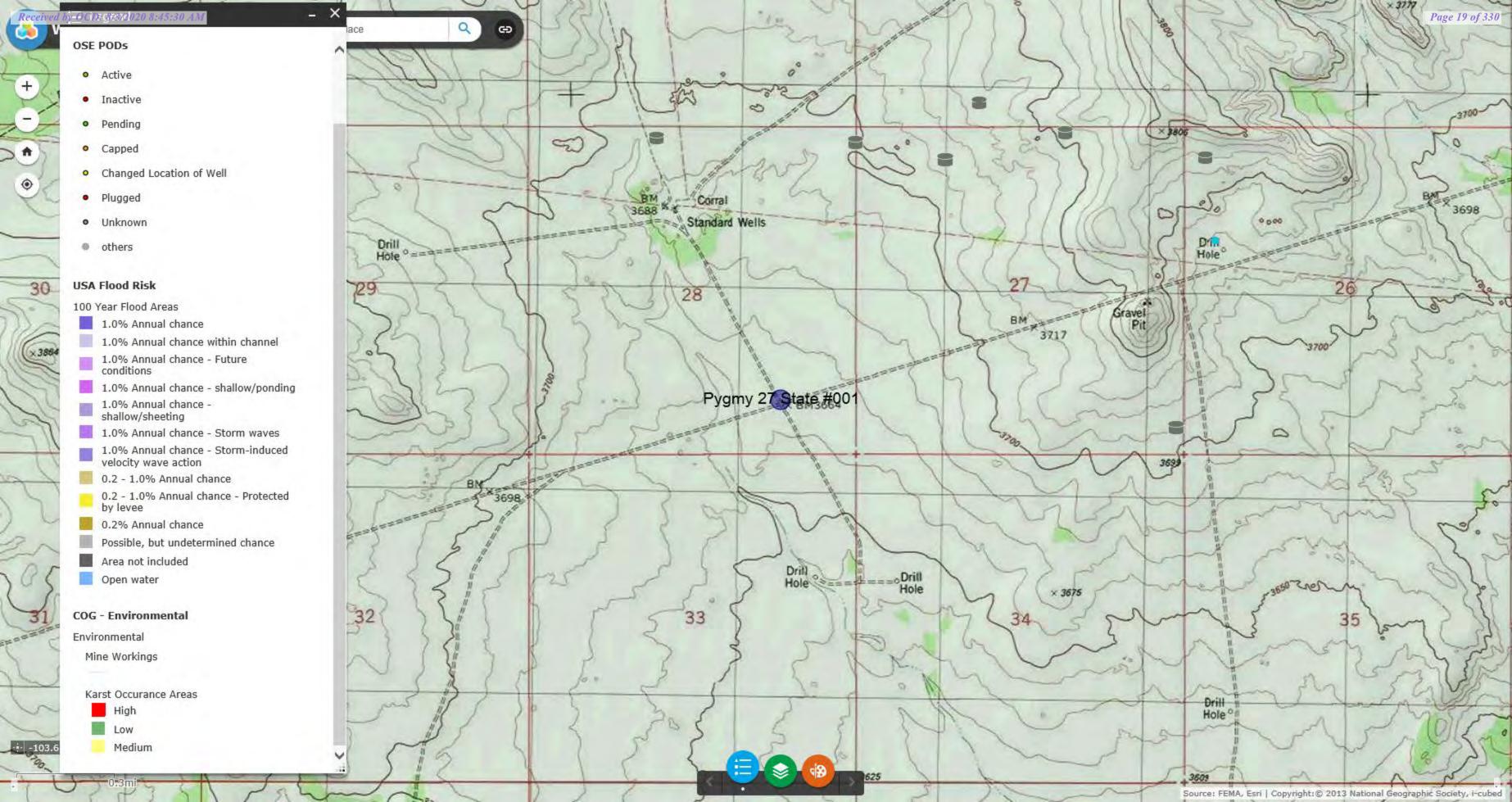
Incident ID	
District RP	
Facility ID	
Application ID	

Closure

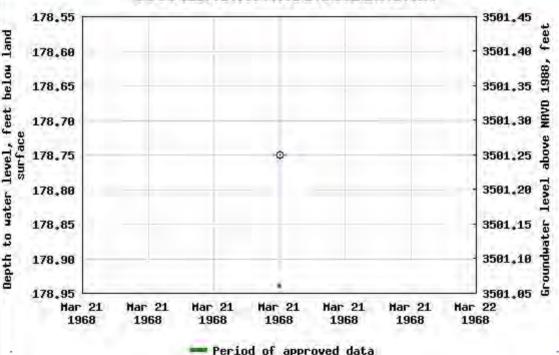
The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: Each of the following is	items must be included in the closure report.
☐ A scaled site and sampling diagram as described in 19.15.29.	11 NMAC
Photographs of the remediated site prior to backfill or photos must be notified 2 days prior to liner inspection)	s of the liner integrity if applicable (Note: appropriate OCD District office
Laboratory analyses of final sampling (Note: appropriate OD	C District office must be notified 2 days prior to final sampling)
☐ Description of remediation activities	
and regulations all operators are required to report and/or file certain may endanger public health or the environment. The acceptance of should their operations have failed to adequately investigate and rehuman health or the environment. In addition, OCD acceptance of compliance with any other federal, state, or local laws and/or regular restore, reclaim, and re-vegetate the impacted surface area to the coaccordance with 19.15.29.13 NMAC including notification to the Corntel Name:	ations. The responsible party acknowledges they must substantially onditions that existed prior to the release or their final land use in
Signature: Sheldon quitam	Date:
email:	Telephone:
OCD Only	
Received by:	Date:
	of liability should their operations have failed to adequately investigate and water, human health, or the environment nor does not relieve the responsible or regulations.
Closure Approved by:	Date:
Printed Name:	Title:

APPENDIX B



USGS 322702103344002 21S.33E.28.12443A



APPENDIX C



May 31, 2019

Cliff Brunson

BBC International, Inc.

P.O. Box 805

Hobbs, NM 88241

RE: PYGMY 27 STATE COM #1H

Enclosed are the results of analyses for samples received by the laboratory on 05/24/19 14:15.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/ga/lab accred certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2

Haloacetic Acids (HAA-5)

Method EPA 524.2

Total Trihalomethanes (TTHM)

Method EPA 524.4

Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

Celeg D. Keens

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

BTEX 8021B

05/24/2019

Sampling Date:

05/16/2019

Reported:

05/31/2019

Sampling Type:

Soil

Project Name:

PYGMY 27 STATE COM #1H

Sampling Condition: Sample Received By: Cool & Intact Tamara Oldaker

Project Number:

(4/24/19)

Project Location:

COG- LEA CO NM

mg/kg

Sample ID: SP 1 @ SURFACE (H901867-01)

DIEX GOLLD	9/	wa .	Andryzo	a 2 y 1 1113					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/30/2019	ND	1.98	98.8	2.00	4.49	
Toluene*	<0.050	0.050	05/30/2019	ND	2.14	107	2.00	4.44	
Ethylbenzene*	<0.050	0.050	05/30/2019	ND	2.00	100	2.00	3.13	
Total Xylenes*	<0.150	0.150	05/30/2019	ND	6.10	102	6.00	3.57	
Total BTEX	<0.300	0.300	05/30/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	105	% 73.3-12	9						
Chloride, SM4500CI-B	mg,	'kg	Analyze	Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	31600	16.0	05/31/2019	ND	400	100	400	3.92	
TPH 8015M	mg,	/kg	Analyzed By: MS						S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<50.0	50.0	05/25/2019	ND	172	86.1	200	9.91	
DRO >C10-C28*	10500	50.0	05/25/2019	ND	202	101	200	7.41	
EXT DRO >C28-C36	2820	50.0	05/25/2019	ND					
Surrogate: 1-Chlorooctane	100 5	% 41-142	!						
Surrogate: 1-Chlorooctadecane	577	% 37.6-14	7						

Analyzed By: ms

Cardinal Laboratories

*=Accredited Analyte

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Celeg D. Freene

Celey D. Keene, Lab Director/Quality Manager



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

05/24/2019

Sampling Date:

05/16/2019

Reported:

05/31/2019

Sampling Type:

Soil

Project Name:

PYGMY 27 STATE COM #1H

Sampling Condition: Sample Received By: Cool & Intact Tamara Oldaker

Project Number:

(4/24/19)

Project Location: COG- LEA CO NM

Sample ID: SP 1 @ 1' (H901867-02)

BTEX 8021B	mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/29/2019	ND	1.98	98.8	2.00	4.49	
Toluene*	<0.050	0.050	05/29/2019	ND	2.14	107	2.00	4.44	
Ethylbenzene*	<0.050	0.050	05/29/2019	ND	2.00	100	2.00	3.13	
Total Xylenes*	<0.150	0.150	05/29/2019	ND	6.10	102	6.00	3.57	
Total BTEX	<0.300	0.300	05/29/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	92.9 9	73.3-12	9						
Chloride, SM4500Cl-B	mg/	kg	Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	14400	16.0	05/31/2019	ND	400	100	400	3.92	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/25/2019	ND	172	86.1	200	9.91	
DRO >C10-C28*	17.2	10.0	05/25/2019	ND	202	101	200	7.41	
EXT DRO >C28-C36	<10.0	10.0	05/25/2019	ND					
Surrogate: 1-Chlorooctane	97.69	6 41-142	?						
Surrogate: 1-Chlorooctadecane	99.2 9	% 37.6-14	7						

Cardinal Laboratories

*=Accredited Analyte

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Celegy Keine



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

BTEX 8021B

05/24/2019

Sampling Date:

05/16/2019

Reported:

05/31/2019

Sampling Type:

Soil

Project Name:

PYGMY 27 STATE COM #1H

Sampling Condition: Sample Received By: Cool & Intact Tamara Oldaker

Project Number:

(4/24/19)

Project Location:

COG- LEA CO NM

mg/kg

95.3 %

100 %

41-142

37.6-147

Sample ID: SP 1 @ 2' (H901867-03)

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	< 0.050	0.050	05/29/2019	ND	1.98	98.8	2.00	4.49	
Toluene*	<0.050	0.050	05/29/2019	ND	2.14	107	2.00	4.44	
Ethylbenzene*	< 0.050	0.050	05/29/2019	ND	2.00	100	2.00	3.13	
Total Xylenes*	<0.150	0.150	05/29/2019	ND	6.10	102	6.00	3.57	
Total BTEX	<0.300	0.300	05/29/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	95.7 9	% 73.3-12	9						
		_							
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: JH					
Chloride, SM4500CI-B Analyte	mg/ Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
			<u> </u>	-	BS 400	% Recovery	True Value QC	RPD 3.92	Qualifier
Analyte	Result	Reporting Limit	Analyzed 05/31/2019	Method Blank		,	·		Qualifier
Analyte Chloride	Result 7200	Reporting Limit	Analyzed 05/31/2019	Method Blank		,	·		Qualifier Qualifier
Analyte Chloride TPH 8015M	Result 7200 mg/	Reporting Limit 16.0	Analyzed 05/31/2019 Analyze	Method Blank ND d By: MS	400	100	400	3.92	
Analyte Chloride TPH 8015M Analyte	Result 7200 mg/	Reporting Limit 16.0 kg Reporting Limit	Analyzed 05/31/2019 Analyzed Analyzed	Method Blank ND d By: MS Method Blank	400 BS	100 % Recovery	400 True Value QC	3.92 RPD	

Analyzed By: ms

Cardinal Laboratories

Surrogate: 1-Chlorooctane

Surrogate: 1-Chlorooctadecane

*=Accredited Analyte

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Celeg & treene

Celey D. Keene, Lab Director/Quality Manager



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

05/24/2019

Sampling Date:

05/16/2019

Reported:

05/31/2019

Sampling Type:

Soil

Project Name:

PYGMY 27 STATE COM #1H

Sampling Condition: Sample Received By: Cool & Intact Tamara Oldaker

Project Number:

(4/24/19)

Project Location:

COG- LEA CO NM

Sample ID: SP 1 @ 3' (H901867-04)

Chloride, SM4500Cl-B	mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3160	16.0	05/31/2019	ND	400	100	400	0.00	QM-07

Sample ID: SP 1 @ 4' (H901867-05)

Chloride, SM4500CI-B	mg/	kg	Analyzed By: JH							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	4080	16.0	05/31/2019	ND	400	100	400	0.00		

Sample ID: SP 1 @ 5' (H901867-06)

Chloride, SM4500Cl-B	/kg	Analyze	d By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2440	16.0	05/31/2019	ND	400	100	400	0.00	

Sample ID: SP 1 @ 6' (H901867-07)

Chloride, SM4500CI-B	mg	/kg	Analyze	d By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	576	16.0	05/31/2019	ND	400	100	400	0.00	

Sample ID: SP 1 @ 7' (H901867-08)

Chloride, SM4500CI-B mg/kg		Analyzed By: JH							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	640	16.0	05/31/2019	ND	400	100	400	0.00	

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Celey D. Freene



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

05/24/2019

Sampling Date:

05/17/2019

Reported:

05/31/2019

Sampling Type:

Soil

Project Name:

PYGMY 27 STATE COM #1H

Sampling Condition: Sample Received By: Cool & Intact Tamara Oldaker

Project Number:

(4/24/19)

Project Location:

COG- LEA CO NM

Sample ID: SP 2 @ SURFACE (H901867-09)

BTEX 8021B	mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/30/2019	ND	1.98	98.8	2.00	4.49	
Toluene*	<0.050	0.050	05/30/2019	ND	2.14	107	2.00	4.44	
Ethylbenzene*	<0.050	0.050	05/30/2019	ND	2.00	100	2.00	3.13	
Total Xylenes*	<0.150	0.150	05/30/2019	ND	6.10	102	6.00	3.57	
Total BTEX	<0.300	0.300	05/30/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	106	% 73.3-12	9						
Chloride, SM4500Cl-B	mg,	/kg	Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	50800	16.0	05/31/2019	ND	400	100	400	0.00	
TPH 8015M	mg,	/kg	Analyze	d By: MS					S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<50.0	50.0	05/25/2019	ND	172	86.1	200	9.91	
DRO >C10-C28*	5940	50.0	05/25/2019	ND	202	101	200	7.41	
EXT DRO >C28-C36	2330	50.0	05/25/2019	ND					
Surrogate: 1-Chlorooctane	93.4	% 41-142	?						
Surrogate: 1-Chlorooctadecane	468	% 37.6-14	7						

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*=Accredited Analyte

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Celeg D. Freene



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

RTFY 8021R

05/24/2019

Sampling Date:

05/17/2019

Reported:

05/31/2019

Sampling Type:

Soil

Project Name:

PYGMY 27 STATE COM #1H

Sampling Condition: Sample Received By: Cool & Intact Tamara Oldaker

Project Number:

(4/24/19)

Project Location:

COG- LEA CO NM

ma/ka

Sample ID: SP 2 @ 1' (H901867-10)

BIEX 8021B	тд/кд		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/29/2019	ND	1.98	98.8	2.00	4.49	
Toluene*	<0.050	0.050	05/29/2019	ND	2.14	107	2.00	4.44	
Ethylbenzene*	<0.050	0.050	05/29/2019	ND	2.00	100	2.00	3.13	
Total Xylenes*	<0.150	0.150	05/29/2019	ND	6.10	102	6.00	3.57	
Total BTEX	<0.300	0.300	05/29/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	93.6 %	6 73.3-12	9						
Chloride, SM4500CI-B	mg/l	kg	Analyze	d By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	10400	16.0	05/31/2019	ND	400	100	400	0.00	
TPH 8015M	mg/l	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/25/2019	ND	172	86.1	200	9.91	
DRO >C10-C28*	<10.0	10.0	05/25/2019	ND	202	101	200	7.41	
EXT DRO >C28-C36	<10.0	10.0	05/25/2019	ND					
Surrogate: 1-Chlorooctane	101 %	6 41-142							
Surrogate: 1-Chlorooctadecane	99.4 %	6 37.6-14	7						

Analyzed By: me

Cardinal Laboratories

*=Accredited Analyte

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Celeg & treene



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

BTEX 8021B

05/24/2019

Sampling Date:

05/17/2019

Reported:

05/31/2019

Sampling Type:

Soil

Project Name:

PYGMY 27 STATE COM #1H

Sampling Condition: Sample Received By: Cool & Intact Tamara Oldaker

Project Number:

(4/24/19)

Project Location:

COG- LEA CO NM

mg/kg

92.5 %

91.6%

41-142

37.6-147

Sample ID: SP 2 @ 2' (H901867-11)

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/29/2019	ND	1.98	98.8	2.00	4.49	
Toluene*	<0.050	0.050	05/29/2019	ND	2.14	107	2.00	4.44	
Ethylbenzene*	<0.050	0.050	05/29/2019	ND	2.00	100	2.00	3.13	
Total Xylenes*	<0.150	0.150	05/29/2019	ND	6.10	102	6.00	3.57	
Total BTEX	<0.300	0.300	05/29/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	95.6	% 73.3-12	9						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: JH					
Chloride, SM4500CI-B Analyte	mg/ Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
	_		<u> </u>		BS 400	% Recovery	True Value QC	RPD 0.00	Qualifier
Analyte	Result	Reporting Limit	Analyzed 05/31/2019	Method Blank		•	•		Qualifier
Analyte Chloride	Result	Reporting Limit	Analyzed 05/31/2019	Method Blank		•	•		Qualifier Qualifier
Analyte Chloride TPH 8015M	Result 10000 mg/	Reporting Limit 16.0	Analyzed 05/31/2019 Analyze	Method Blank ND d By: MS	400	100	400	0.00	
Analyte Chloride TPH 8015M Analyte	Result 10000 mg/	Reporting Limit 16.0 kg Reporting Limit	Analyzed 05/31/2019 Analyzed Analyzed	Method Blank ND d By: MS Method Blank	400 BS	100 % Recovery	400 True Value QC	0.00	

Analyzed By: ms

Cardinal Laboratories

Surrogate: 1-Chlorooctane

Surrogate: 1-Chlorooctadecane

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Celeg Theene



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

05/24/2019

Sampling Date:

05/17/2019

Reported:

05/31/2019

Sampling Type:

Soil

Project Name:

PYGMY 27 STATE COM #1H

Reporting Limit

16.0

16.0

Sampling Condition: Sample Received By: Cool & Intact Tamara Oldaker

Project Number:

(4/24/19)

Project Location:

Analyte

COG- LEA CO NM

Sample ID: SP 2 @ 3' (H901867-12)

Chloride,	SM4500CI-B
-----------	------------

ma	1	k

Analyzed By: JH

Analyzed

Method Blank

BS % Recovery True Value QC

400

Qualifier

Chloride

Chloride

Result 4000

Result

3200

05/31/2019 16.0

ND

400

RPD

0.00

Sample ID: SP 2 @ 4' (H901867-13)

Chloride, SM4500Cl-B

mg/kg

Analyzed By: JH

Analyte

Reporting Limit Analyzed Method Blank ND

BS 400 % Recovery 100

100

True Value QC 400

RPD Qualifier

Sample ID: SP 2 @ 5' (H901867-14)

Chloride, SM4500Cl-B

mg/kg

Analyzed By: JH

Analyte Result Reporting Limit

Analyzed 05/31/2019

05/31/2019

Method Blank

BS

% Recovery True Value QC RPD

Qualifier

Chloride

496

ND

400

400

0.00

0.00

Sample ID: SP 2 @ 6' (H901867-15)

Chloride, SM4500Cl-B

mg/kg

Analyzed By: JH

	Analyte	Result
Chloride		240

Result

Reporting Limit 16.0

Analyzed 05/31/2019

Method Blank ND

BS 400 % Recovery 100

100

RPD True Value QC 400 0.00 Qualifier

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Celey D. Freene

Celey D. Keene, Lab Director/Quality Manager

Page 9 of 51



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

RTFY 8021R

05/24/2019

Sampling Date:

05/17/2019

Reported:

05/31/2019

Sampling Type:

Soil

Project Name:

PYGMY 27 STATE COM #1H

Sampling Condition: Sample Received By: Cool & Intact Tamara Oldaker

Project Number:

(4/24/19)

Project Location:

COG- LEA CO NM

Sample ID: SP 3 @ SURFACE (H901867-16)

BIEX 8021B	тд/кд		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/29/2019	ND	1.98	98.8	2.00	4.49	
Toluene*	<0.050	0.050	05/29/2019	ND	2.14	107	2.00	4.44	
Ethylbenzene*	<0.050	0.050	05/29/2019	ND	2.00	100	2.00	3.13	
Total Xylenes*	<0.150	0.150	05/29/2019	ND	6.10	102	6.00	3.57	
Total BTEX	<0.300	0.300	05/29/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	91.7	% 73.3-12	9						
Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	41600	16.0	05/31/2019	ND	400	100	400	0.00	
TPH 8015M	mg,	/kg	Analyze	d By: MS				S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<50.0	50.0	05/25/2019	ND	172	86.1	200	9.91	
DRO >C10-C28*	11800	50.0	05/25/2019	ND	202	101	200	7.41	
EXT DRO >C28-C36	3480	50.0	05/25/2019	ND					
Surrogate: 1-Chlorooctane	95.1	% 41-142	,						
Surrogate: 1-Chlorooctadecane	636	% 37.6-14	7						

Analyzed By: me

Cardinal Laboratories

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Celeg D. Kreene

Celey D. Keene, Lab Director/Quality Manager



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

BTEX 8021B

05/24/2019

Sampling Date:

05/17/2019

Reported:

05/31/2019

Sampling Type:

Soil

Project Name:

PYGMY 27 STATE COM #1H

Sampling Condition:

Cool & Intact

Project Number:

(4/24/19)

Sample Received By:

Tamara Oldaker

Project Location:

COG- LEA CO NM

mg/kg

Sample ID: SP 3 @ 1' (H901867-17)

DIEX GOZID	mg/ kg		Analyzed by: 1115						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/29/2019	ND	1.98	98.8	2.00	4.49	
Toluene*	<0.050	0.050	05/29/2019	ND	2.14	107	2.00	4.44	
Ethylbenzene*	<0.050	0.050	05/29/2019	ND	2.00	100	2.00	3.13	
Total Xylenes*	<0.150	0.150	05/29/2019	ND	6.10	102	6.00	3.57	
Total BTEX	<0.300	0.300	05/29/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	91.6	% 73.3-129	9						
Chloride, SM4500Cl-B	mg/	/kg	Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	12000	16.0	05/31/2019	ND	400	100	400	0.00	
TPH 8015M	mg/	'kg	Analyze	ed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/25/2019	ND	172	86.1	200	9.91	
DRO >C10-C28*	<10.0	10.0	05/25/2019	ND	202	101	200	7.41	
EXT DRO >C28-C36	<10.0	10.0	05/25/2019	ND					
Surrogate: 1-Chlorooctane	92.1	% 41-142							
Surrogate: 1-Chlorooctadecane	92.8	% 37.6-14	7						

Analyzed By: ms

Cardinal Laboratories

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Celeg D. Freene



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

BTEX 8021B

05/24/2019

Sampling Date:

05/17/2019

Reported:

05/31/2019

Sampling Type:

Soil

Project Name:

PYGMY 27 STATE COM #1H

Sampling Condition: Sample Received By: Cool & Intact Tamara Oldaker

Project Number:

(4/24/19)

Project Location:

COG- LEA CO NM

mg/kg

96.1 %

37.6-147

Sample ID: SP 3 @ 2' (H901867-18)

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/29/2019	ND	1.98	98.8	2.00	4.49	
Toluene*	<0.050	0.050	05/29/2019	ND	2.14	107	2.00	4.44	
Ethylbenzene*	<0.050	0.050	05/29/2019	ND	2.00	100	2.00	3.13	
Total Xylenes*	<0.150	0.150	05/29/2019	ND	6.10	102	6.00	3.57	
Total BTEX	<0.300	0.300	05/29/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	91.9	% 73.3-12	9						
Chloride, SM4500Cl-B	mg/	kg	Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	11400	16.0	05/31/2019	ND	400	100	400	0.00	
TPH 8015M	mg/	kg	Analyze	Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/25/2019	ND	172	86.1	200	9.91	
DRO >C10-C28*	<10.0	10.0	05/25/2019	ND	202	101	200	7.41	
EXT DRO >C28-C36	<10.0	10.0	05/25/2019	ND					
Surrogate: 1-Chlorooctane	96.09	% 41-142							

Analyzed By: ms

Cardinal Laboratories

Surrogate: 1-Chlorooctadecane

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Celeg Theene



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

05/24/2019

Sampling Date:

05/17/2019

Reported:

05/31/2019

Sampling Type:

Soil

Project Name:

PYGMY 27 STATE COM #1H

Sampling Condition:

Cool & Intact

Project Number:

(4/24/19)

Project Location: COG- LEA CO NM

Sample Received By:

Tamara Oldaker

Sample ID: SP 3 @ 3' (H901867-19)

Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3840	16.0	05/31/2019	ND	400	100	400	0.00	

Sample ID: SP 3 @ 4' (H901867-20)

Chloride, SM4500CI-B	mg/kg		Analyze	d By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1980	16.0	05/31/2019	ND	400	100	400	0.00	

Sample ID: SP 3 @ 5' (H901867-21)

Chloride, SM4500Cl-B	mg,	/kg	Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	224	16.0	05/31/2019	ND	400	100	400	0.00	

Sample ID: SP 3 @ 6' (H901867-22)

Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	05/31/2019	ND	400	100	400	0.00	

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Celeg Theene



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

BTEX 8021B

DRO >C10-C28*

EXT DRO > C28 - C36

05/24/2019

Sampling Date:

05/17/2019

Reported:

05/31/2019

Sampling Type:

Soil

Project Name:

PYGMY 27 STATE COM #1H

Sampling Condition: Sample Received By: Cool & Intact Tamara Oldaker

Project Number:

(4/24/19)

Project Location:

COG- LEA CO NM

mg/kg

Sample ID: SP 4 @ SURFACE (H901867-23)

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/29/2019	ND	1.98	98.8	2.00	4.49	
Toluene*	< 0.050	0.050	05/29/2019	ND	2.14	107	2.00	4.44	
Ethylbenzene*	< 0.050	0.050	05/29/2019	ND	2.00	100	2.00	3.13	
Total Xylenes*	<0.150	0.150	05/29/2019	ND	6.10	102	6.00	3.57	
Total BTEX	<0.300	0.300	05/29/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	92.9	% 73.3-12	19						
Chloride, SM4500Cl-B	mg,	/kg	Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	46000	16.0	05/31/2019	ND	400	100	400	0.00	
TPH 8015M	mg/kg		Analyzed By: MS						S-06
Analyte						0.4			
rudyce	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier

ND

ND

202

101

200

7.41

05/25/2019

05/25/2019

Analyzed By: ms

Surrogate: 1-Chlorooctane 102 % 41-142 Surrogate: 1-Chlorooctadecane 469 % 37.6-147

7300

2350

50.0

50.0

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Celeg D. Kreene

Celey D. Keene, Lab Director/Quality Manager



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

BTEX 8021B

EXT DRO >C28-C36

05/24/2019

Sampling Date:

05/17/2019

Reported:

05/31/2019

Sampling Type:

Soil

Project Name:

PYGMY 27 STATE COM #1H

Sampling Condition: Sample Received By: Cool & Intact Tamara Oldaker

Project Number:

(4/24/19)

Project Location:

COG- LEA CO NM

mg/kg

Sample ID: SP 4 @ 1' (H901867-24)

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/29/2019	ND	1.98	98.8	2.00	4.49	
Toluene*	<0.050	0.050	05/29/2019	ND	2.14	107	2.00	4.44	
Ethylbenzene*	<0.050	0.050	05/29/2019	ND	2.00	100	2.00	3.13	
Total Xylenes*	<0.150	0.150	05/29/2019	ND	6.10	102	6.00	3.57	
Total BTEX	<0.300	0.300	05/29/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	95.1	% 73.3-12	9						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: JH					
Chloride, SM4500Cl-B Analyte	mg/ Result	Reporting Limit	Analyze Analyzed	d By: JH Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
·			<u> </u>		BS 400	% Recovery	True Value QC	RPD 0.00	Qualifier QM-07
Analyte	Result	Reporting Limit	Analyzed 05/31/2019	Method Blank		,	·		-
Analyte Chloride	Result	Reporting Limit	Analyzed 05/31/2019	Method Blank		,	·		-
Analyte Chloride TPH 8015M	Result 9200 mg/	Reporting Limit 16.0	Analyzed 05/31/2019 Analyze	Method Blank ND d By: MS	400	100	400	0.00	QM-07

ND

05/25/2019

Analyzed By: ms

Surrogate: 1-Chlorooctane 99.1 % 41-142
Surrogate: 1-Chlorooctadecane 99.1 % 37.6-147

<10.0

10.0

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Celeg D. Freene

Celey D. Keene, Lab Director/Quality Manager



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

BTEX 8021B

DRO >C10-C28*

EXT DRO >C28-C36

05/24/2019

Sampling Date:

05/17/2019

Reported:

05/31/2019

Sampling Type:

Soil

Project Name:

PYGMY 27 STATE COM #1H

Sampling Condition: Sample Received By: Cool & Intact Tamara Oldaker

Project Number:

(4/24/19)

Project Location:

COG- LEA CO NM

mg/kg

Sample ID: SP 4 @ 2' (H901867-25)

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/29/2019	ND	1.98	98.8	2.00	4.49	
Toluene*	<0.050	0.050	05/29/2019	ND	2.14	107	2.00	4.44	
Ethylbenzene*	<0.050	0.050	05/29/2019	ND	2.00	100	2.00	3.13	
Total Xylenes*	<0.150	0.150	05/29/2019	ND	6.10	102	6.00	3.57	
Total BTEX	<0.300	0.300	05/29/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	93.8	% 73.3-12	9						
Chloride, SM4500CI-B	mg/	/kg	Analyze	d By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	10000	16.0	05/31/2019	ND	400	100	400	0.00	
TPH 8015M	mg/	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*									

ND

ND

202

101

200

7.41

05/25/2019

05/25/2019

Analyzed By: ms

Surrogate: 1-Chlorooctane 95.6 % 41-142 Surrogate: 1-Chlorooctadecane 95.8 % 37.6-147

<10.0

<10.0

10.0

10.0

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Celeg D. Freene



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

05/24/2019

Sampling Date:

05/17/2019

Reported:

05/31/2019

Sampling Type:

Soil

Project Name:

PYGMY 27 STATE COM #1H

Reporting Limit

Reporting Limit

Reporting Limit

16.0

Sampling Condition: Sample Received By: Cool & Intact Tamara Oldaker

Project Number:

Analyte

Analyte

Analyte

(4/24/19)

Project Location:

COG- LEA CO NM

Sample ID: SP 4 @ 3' (H901867-26)

Chloride, SM4500Cl-B

mg/kg

Analyzed By: JH

Method Blank

% Recovery

True Value QC 400

Qualifier

Chloride

Result 3240

16.0 05/31/2019

Analyzed

Analyzed

ND

400

BS

RPD 0.00

Quamici

Sample ID: SP 4 @ 4' (H901867-27)

Chloride, SM4500Cl-B

mg/kg

Analyzed By: JH

% Recovery

100

True Value QC R

Qualifier

Chloride

Chloride

256

Result

Result

208

16.0 05/31/2019

Method Blank ND BS 400

100

% Recovery

100

400

RPD Qual

Sample ID: SP 4 @ 5' (H901867-28)

Chloride, SM4500Cl-B

mg/kg

Analyzed By: JH

Analyzed 05/31/2019

Method Blank
ND

BS 400 True Value QC 400

RPD 0.00 Qualifier

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Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager

Page 17 of 51



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

05/24/2019

Sampling Date:

05/17/2019

Reported:

05/31/2019

Sampling Type:

Soil

Project Name:

PYGMY 27 STATE COM #1H

Sampling Condition: Sample Received By: Cool & Intact Tamara Oldaker

Project Number:

(4/24/19)

Project Location:

COG- LEA CO NM

Sample ID: SP 5 @ SURFACE (H901867-29)

BTEX 8021B	mg/	kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/29/2019	ND	1.98	98.8	2.00	4.49	
Toluene*	<0.050	0.050	05/29/2019	ND	2.14	107	2.00	4.44	
Ethylbenzene*	<0.050	0.050	05/29/2019	ND	2.00	100	2.00	3.13	
Total Xylenes*	<0.150	0.150	05/29/2019	ND	6.10	102	6.00	3.57	
Total BTEX	<0.300	0.300	05/29/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	91.8	% 73.3-12	9						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier

Chloride, Si-14300ci B	11197	- Kg	Andryzo	u by. 511					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	60000	16.0	05/31/2019	ND	400	100	400	0.00	
TPH 8015M	mg,	'kg	Analyze	d By: MS					S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<50.0	50.0	05/25/2019	ND	172	86.1	200	9.91	
DRO >C10-C28*	9260	50.0	05/25/2019	ND	202	101	200	7.41	
EXT DRO >C28-C36	3550	50.0	05/25/2019	ND					

Surrogate: 1-Chlorooctane Surrogate: 1-Chlorooctadecane

626 %

97.8 %

41-142 37.6-147

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Celeg Ditreme



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

05/24/2019

Sampling Date:

05/17/2019

Reported:

05/31/2019

Sampling Type:

Soil

Project Name:

PYGMY 27 STATE COM #1H

Sampling Condition: Sample Received By: Cool & Intact Tamara Oldaker

Project Number: Project Location: (4/24/19)

COG- LEA CO NM

Sample ID: SP 5 @ 1' (H901867-30)

BTEX 8021B	mg/	kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/29/2019	ND	1.98	98.8	2.00	4.49	
Toluene*	<0.050	0.050	05/29/2019	ND	2.14	107	2.00	4.44	
Ethylbenzene*	<0.050	0.050	05/29/2019	ND	2.00	100	2.00	3.13	
Total Xylenes*	<0.150	0.150	05/29/2019	ND	6.10	102	6.00	3.57	
Total BTEX	<0.300	0.300	05/29/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	91.5 9	% 73.3-12	9						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	11300	16.0	05/31/2019	ND	400	100	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/25/2019	ND	172	86.1	200	9.91	
DRO >C10-C28*	77.8	10.0	05/25/2019	ND	202	101	200	7.41	
EXT DRO >C28-C36	<10.0	10.0	05/25/2019	ND					
Surrogate: 1-Chlorooctane	101 %	% 41-142	?						
Cumpo acta, 1 Chlores ata da ana	111.0	/ 27.6.14	17						

Surrogate: 1-Chlorooctadecane

111 %

37.6-147

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Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

BTEX 8021B

05/24/2019

Sampling Date:

05/20/2019

Reported:

05/31/2019

Sampling Type:

Soil

Project Name:

PYGMY 27 STATE COM #1H

Sampling Condition: Sample Received By: Cool & Intact Tamara Oldaker

Project Number:

(4/24/19)

Project Location:

COG- LEA CO NM

mg/kg

Sample ID: SP 5 @ 2' (H901867-31)

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/30/2019	ND	1.84	92.1	2.00	0.0184	QR-03
Toluene*	<0.050	0.050	05/30/2019	ND	1.99	99.4	2.00	0.178	
Ethylbenzene*	<0.050	0.050	05/30/2019	ND	1.89	94.5	2.00	0.213	
Total Xylenes*	<0.150	0.150	05/30/2019	ND	5.72	95.3	6.00	0.0278	
Total BTEX	<0.300	0.300	05/30/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	93.9	% 73.3-12	9						
Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: JH					
Chloride, SM4500Cl-B Analyte	mg ,	/kg Reporting Limit	Analyze Analyzed	d By: JH Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
,			-		BS 400	% Recovery	True Value QC 400	RPD 0.00	Qualifier
Analyte	Result	Reporting Limit	Analyzed 05/31/2019	Method Blank		•	•		Qualifier
Analyte Chloride	Result	Reporting Limit	Analyzed 05/31/2019	Method Blank		•	•		Qualifier Qualifier
Analyte Chloride TPH 8015M	Result 400	Reporting Limit 16.0	Analyzed 05/31/2019 Analyze	Method Blank ND d By: MS	400	100	400	0.00	

ND

Analyzed By: ms

Surrogate: 1-Chlorooctadecane

Surrogate: 1-Chlorooctane

EXT DRO >C28-C36

92.5 % 91.5 %

<10.0

41-142 37.6-147 05/25/2019

10.0

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Celley D. Freene



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

05/24/2019

Sampling Date:

05/20/2019

Reported:

05/31/2019

Sampling Type:

Soil

Project Name:

PYGMY 27 STATE COM #1H

Sampling Condition:

Cool & Intact

Project Number: Project Location:

(4/24/19)

COG- LEA CO NM

Sample Received By: Tamara Oldaker

Sample ID: SP 5 @ 3' (H901867-32)

Chloride, SM4500Cl-B	mg/	/kg	Analyze	d By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	05/31/2019	ND	400	100	400	0.00	

Sample ID: SP 5 @ 4' (H901867-33)

Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	05/31/2019	ND	400	100	400	0.00	

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Celegy Theene



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

05/24/2019

Sampling Date:

05/20/2019

Reported:

05/31/2019

Sampling Type:

Soil

Project Name:

PYGMY 27 STATE COM #1H

Sampling Condition: Sample Received By: Cool & Intact Tamara Oldaker

Project Number:

(4/24/19)

Project Location:

COG- LEA CO NM

Sample ID: SP 6 @ SURFACE (H901867-34)

BTEX 8021B	mg/	kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/30/2019	ND	1.84	92.1	2.00	0.0184	
Toluene*	< 0.050	0.050	05/30/2019	ND	1.99	99.4	2.00	0.178	
Ethylbenzene*	< 0.050	0.050	05/30/2019	ND	1.89	94.5	2.00	0.213	
Total Xylenes*	<0.150	0.150	05/30/2019	ND	5.72	95.3	6.00	0.0278	
Total BTEX	<0.300	0.300	05/30/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	91.3 9	6 73.3-12	9						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	55200	16.0	05/31/2019	ND	400	100	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/28/2019	ND	172	86.1	200	9.91	
DRO >C10-C28*	2830	10.0	05/28/2019	ND	202	101	200	7.41	
EXT DRO >C28-C36	1220	10.0	05/28/2019	ND					
Surrogate: 1-Chlorooctane	94.5 %	6 41-142	?						
Surrogate: 1-Chlorooctadecane	260 %	6 37.6-14	7						

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Celeg D. Keine



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

05/24/2019

Sampling Date:

05/20/2019

Reported:

05/31/2019

Sampling Type:

Soil

Project Name:

PYGMY 27 STATE COM #1H

Sampling Condition: Sample Received By: Cool & Intact Tamara Oldaker

Project Number:

(4/24/19)

Project Location:

COG- LEA CO NM

Sample ID: SP 6 @ 1' (H901867-35)

BTEX 8021B	mg/l	kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/30/2019	ND	1.84	92.1	2.00	0.0184	
Toluene*	<0.050	0.050	05/30/2019	ND	1.99	99.4	2.00	0.178	
Ethylbenzene*	<0.050	0.050	05/30/2019	ND	1.89	94.5	2.00	0.213	
Total Xylenes*	<0.150	0.150	05/30/2019	ND	5.72	95.3	6.00	0.0278	
Total BTEX	<0.300	0.300	05/30/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	93.1 %	6 73.3-12	9						
Chloride, SM4500Cl-B	mg/l	kg	Analyze	d By: JH					

mg,	/kg	Analyze	d By: JH					
Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
40800	16.0	05/31/2019	ND	400	100	400	0.00	
mg,	/kg	Analyze	d By: MS					
Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<10.0	10.0	05/26/2019	ND	181	90.5	200	7.25	
824	10.0	05/26/2019	ND	190	95.0	200	1.96	
337	10.0	05/26/2019	ND					
	Result 40800 mg/ Result <10.0 824	### Application	Result Reporting Limit Analyzed 40800 16.0 05/31/2019 mg/kg Analyze Result Reporting Limit Analyzed <10.0	Result Reporting Limit Analyzed Method Blank 40800 16.0 05/31/2019 ND mg/kg Analyzed By: MS Result Reporting Limit Analyzed Method Blank <10.0	Result Reporting Limit Analyzed Method Blank BS 40800 16.0 05/31/2019 ND 400 mg/kg Analyzed By: MS Result Reporting Limit Analyzed Method Blank BS <10.0	Result Reporting Limit Analyzed Method Blank BS % Recovery 40800 16.0 05/31/2019 ND 400 100 mg/kg Analyzed By: MS Result Reporting Limit Analyzed Method Blank BS % Recovery <10.0	Result Reporting Limit Analyzed Method Blank BS % Recovery True Value QC 40800 16.0 05/31/2019 ND 400 100 400 mg/kg Analyzed By: MS Result Reporting Limit Analyzed Method Blank BS % Recovery True Value QC <10.0	Result Reporting Limit Analyzed Method Blank BS % Recovery True Value QC RPD 40800 16.0 05/31/2019 ND 400 100 400 0.00 mg/kg Analyzed By: MS Result Reporting Limit Analyzed Method Blank BS % Recovery True Value QC RPD <10.0

Surrogate: 1-Chlorooctane 95.9 % 41-142

Surrogate: 1-Chlorooctadecane 145 % 37.6-147

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Celego Kreene



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

BTEX 8021B

05/24/2019

Sampling Date:

05/20/2019

Reported:

05/31/2019

Sampling Type:

Soil

Project Name:

PYGMY 27 STATE COM #1H

Sampling Condition: Sample Received By: Cool & Intact Tamara Oldaker

Project Number:

(4/24/19)

mg/kg

Project Location: COG- LEA CO NM

Sample ID: SP 6 @ 2' (H901867-36)

	9,	· 9							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/30/2019	ND	1.84	92.1	2.00	0.0184	
Toluene*	<0.050	0.050	05/30/2019	ND	1.99	99.4	2.00	0.178	
Ethylbenzene*	<0.050	0.050	05/30/2019	ND	1.89	94.5	2.00	0.213	
Total Xylenes*	<0.150	0.150	05/30/2019	ND	5.72	95.3	6.00	0.0278	
Total BTEX	<0.300	0.300	05/30/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	91.7	% 73.3-12	9						
Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	432	16.0	05/31/2019	ND	400	100	400	0.00	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/25/2019	ND	181	90.5	200	7.25	
DRO >C10-C28*	<10.0	10.0	05/25/2019	ND	190	95.0	200	1.96	
EXT DRO >C28-C36	<10.0	10.0	05/25/2019	ND					
Surrogate: 1-Chlorooctane	101	% 41-142	?						
	100	0/ 25/1	-						

Analyzed By: ms

Surrogate: 1-Chlorooctadecane

103 %

37.6-147

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Celeg Ditreme



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

05/24/2019

Sampling Date:

05/20/2019

Reported:

05/31/2019

Sampling Type:

Soil

Project Name:

PYGMY 27 STATE COM #1H

Reporting Limit

Sampling Condition: Sample Received By: Cool & Intact Tamara Oldaker

Project Number:

(4/24/19)

Project Location:

Analyte

COG- LEA CO NM

Sample ID: SP 6 @ 3' (H901867-37)

Chloride, SM4500Cl-B

mg/kg

Analyzed By: JH

Result

Analyzed

Method Blank

% Recovery

100

True Value QC

Qualifier

Qualifier

Chloride

128

16.0 05/31/2019 ND

Method Blank

ND

400

BS

400

Sample ID: SP 6 @ 4' (H901867-38)

Chloride, SM4500Cl-B

mg/kg

Analyzed By: JH

Reporting Limit Analyzed Analyte Result Chloride 128 16.0 05/31/2019

400

BS

100

% Recovery

True Value QC 400

RPD 0.00

RPD

0.00

Cardinal Laboratories

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Celey D. Freene

Celey D. Keene, Lab Director/Quality Manager

Page 25 of 51

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Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

BTEX 8021B

05/24/2019

Sampling Date:

05/20/2019

Reported:

05/31/2019

Sampling Type:

Soil

Project Name:

PYGMY 27 STATE COM #1H

Sampling Condition: Sample Received By: Cool & Intact Tamara Oldaker

Project Number:

(4/24/19)

Project Location:

COG- LEA CO NM

mg/kg

A CO NM

Sample ID: SP 7 @ SURFACE (H901867-39)

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/30/2019	ND	1.84	92.1	2.00	0.0184	
Toluene*	<0.050	0.050	05/30/2019	ND	1.99	99.4	2.00	0.178	
Ethylbenzene*	<0.050	0.050	05/30/2019	ND	1.89	94.5	2.00	0.213	
Total Xylenes*	<0.150	0.150	05/30/2019	ND	5.72	95.3	6.00	0.0278	
Total BTEX	<0.300	0.300	05/30/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	93.7 9	73.3-12	9						
		_	_	_					
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: JH					
Chloride, SM4500CI-B Analyte	mg/ Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
			<u> </u>		BS 400	% Recovery	True Value QC	RPD 0.00	Qualifier
Analyte	Result	Reporting Limit	Analyzed 05/31/2019	Method Blank			•		Qualifier
Analyte Chloride	Result	Reporting Limit	Analyzed 05/31/2019	Method Blank			•		Qualifier Qualifier
Analyte Chloride TPH 8015M	Result 9730 mg/	Reporting Limit 16.0	Analyzed 05/31/2019 Analyze	Method Blank ND d By: MS	400	100	400	0.00	
Analyte Chloride TPH 8015M Analyte	Result 9730 mg/ Result	Reporting Limit 16.0 kg Reporting Limit	Analyzed 05/31/2019 Analyzed Analyzed	Method Blank ND d By: MS Method Blank	400 BS	100 % Recovery	400 True Value QC	0.00	

Analyzed By: ms

Surrogate: 1-Chlorooctane

88.0 %

41-142

Surrogate: 1-Chlorooctadecane

88.1 %

37.6-147

Cardinal Laboratories *=Accredited Analyte

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Celley D. Freene



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

BTEX 8021B

05/24/2019

Sampling Date:

05/20/2019

Reported:

05/31/2019

Sampling Type:

Soil

Project Name:

PYGMY 27 STATE COM #1H

Sampling Condition: Sample Received By: Cool & Intact Tamara Oldaker

Project Number:

(4/24/19)

Project Location:

COG- LEA CO NM

mg/kg

Sample ID: SP 7 @ 1' (H901867-40)

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/30/2019	ND	1.84	92.1	2.00	0.0184	
Toluene*	<0.050	0.050	05/30/2019	ND	1.99	99.4	2.00	0.178	
Ethylbenzene*	<0.050	0.050	05/30/2019	ND	1.89	94.5	2.00	0.213	
Total Xylenes*	<0.150	0.150	05/30/2019	ND	5.72	95.3	6.00	0.0278	
Total BTEX	<0.300	0.300	05/30/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	93.1 9	% 73.3-12	9						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2400	16.0	05/31/2019	ND	400	100	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/25/2019	ND	181	90.5	200	7.25	
	<10.0	10.0	,,						
DRO >C10-C28*	<10.0	10.0	05/25/2019	ND	190	95.0	200	1.96	

Analyzed By: ms

Surrogate: 1-Chlorooctane

91.1 %

41-142

Surrogate: 1-Chlorooctadecane

92.2 %

37.6-147

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Celeg D. Kreene



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

05/24/2019

Sampling Date:

05/20/2019

Reported:

05/31/2019

Sampling Type:

Soil

Project Name:

PYGMY 27 STATE COM #1H

Sampling Condition: Sample Received By: Cool & Intact Tamara Oldaker

Project Number:

(4/24/19)

Project Location: COG- LEA CO NM

Sample ID: SP 7 @ 2' (H901867-41)

BTEX 8021B	mg/	kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/30/2019	ND	1.84	92.1	2.00	0.0184	
Toluene*	<0.050	0.050	05/30/2019	ND	1.99	99.4	2.00	0.178	
Ethylbenzene*	<0.050	0.050	05/30/2019	ND	1.89	94.5	2.00	0.213	
Total Xylenes*	<0.150	0.150	05/30/2019	ND	5.72	95.3	6.00	0.0278	
Total BTEX	<0.300	0.300	05/30/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	93.6 %	6 73.3-12	9						
Chloride, SM4500Cl-B	mg/l	kg	Analyze	d By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	560	16.0	05/31/2019	ND	400	100	400	0.00	
TPH 8015M	mg/l	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/25/2019	ND	181	90.5	200	7.25	
DRO >C10-C28*	<10.0	10.0	05/25/2019	ND	190	95.0	200	1.96	
EXT DRO >C28-C36	<10.0	10.0	05/25/2019	ND					
Surrogate: 1-Chlorooctane	91.8 %	6 41-142	!						
Surrogate: 1-Chlorooctadecane	93.7 %	6 37.6-14	7						

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Celegy Keine

Celey D. Keene, Lab Director/Quality Manager



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

05/24/2019

Sampling Date:

05/20/2019

Reported:

05/31/2019

Sampling Type:

Soil

Project Name:

PYGMY 27 STATE COM #1H

Reporting Limit

Sampling Condition: Sample Received By: Cool & Intact Tamara Oldaker

Project Number: Project Location:

Analyte

(4/24/19) COG- LEA CO NM

mg/kg

Sample ID: SP 7 @ 3' (H901867-42)

Chloride, SM4500Cl-B

Analyzed By: JH

% Recovery

True Value QC RPD

0.00

Qualifier

Chloride

Result 128

16.0 05/31/2019

Analyzed

Analyzed

Method Blank ND BS 400

BS

100

400

Quan

Sample ID: SP 7 @ 4' (H901867-43)

Chloride, SM4500Cl-B

Analyte

mg/kg

Analyzed By: JH

Method Blank

% Recovery

True Value QC

RPD Qualifier

Chloride

Result Reporting Limit

112

16.0 05/31/2019

ND 400

100

400

0.00

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Celegy Theene



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Fax To: (575) 397-0397

Received:

BTEX 8021B

05/24/2019

Sampling Date:

05/20/2019

Reported:

05/31/2019

Sampling Type:

Soil

Project Name:

PYGMY 27 STATE COM #1H

Sampling Condition: Sample Received By: Cool & Intact Tamara Oldaker

Project Number:

(4/24/19)

Project Location:

COG- LEA CO NM

mg/kg

Sample ID: SP 8 @ SURFACE (H901867-44)

	9/	9	7	7:					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/30/2019	ND	1.84	92.1	2.00	0.0184	
Toluene*	<0.050	0.050	05/30/2019	ND	1.99	99.4	2.00	0.178	
Ethylbenzene*	<0.050	0.050	05/30/2019	ND	1.89	94.5	2.00	0.213	
Total Xylenes*	<0.150	0.150	05/30/2019	ND	5.72	95.3	6.00	0.0278	
Total BTEX	<0.300	0.300	05/30/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	93.5	% 73.3-129	9						
Chloride, SM4500Cl-B	mg,	/kg	Analyze	ed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	8660	16.0	05/31/2019	ND	400	100	400	0.00	QM-07
TPH 8015M	mg,	/kg	Analyze	ed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/26/2019	ND	181	90.5	200	7.25	
DRO >C10-C28*	<10.0	10.0	05/26/2019	ND	190	95.0	200	1.96	
EXT DRO >C28-C36	<10.0	10.0	05/26/2019	ND					
Surrogate: 1-Chlorooctane	96.5	% 41-142							
Surrogate: 1-Chlorooctadecane	99.8	% 37.6-147	7						

Analyzed By: ms

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Celey D. Keine



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

BTEX 8021B

DRO >C10-C28*

EXT DRO >C28-C36

05/24/2019

Sampling Date:

05/20/2019

Reported:

05/31/2019

Sampling Type:

Soil

Project Name:

PYGMY 27 STATE COM #1H

Sampling Condition: Sample Received By: Cool & Intact Tamara Oldaker

Project Number:

(4/24/19)

Project Location:

COG- LEA CO NM

mg/kg

Sample ID: SP 8 @ 1' (H901867-45)

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/30/2019	ND	1.84	92.1	2.00	0.0184	
Toluene*	<0.050	0.050	05/30/2019	ND	1.99	99.4	2.00	0.178	
Ethylbenzene*	<0.050	0.050	05/30/2019	ND	1.89	94.5	2.00	0.213	
Total Xylenes*	<0.150	0.150	05/30/2019	ND	5.72	95.3	6.00	0.0278	
Total BTEX	<0.300	0.300	05/30/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	93.6	% 73.3-12	9						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: JH					
Analyte									
7 that y co	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	Result 2560	Reporting Limit 16.0	Analyzed 05/31/2019	Method Blank ND	BS 400	% Recovery	True Value QC 400	RPD 0.00	Qualifier
,		16.0	05/31/2019			•			Qualifier S-04
Chloride	2560	16.0	05/31/2019	ND		•			-

ND

ND

190

95.0

200

1.96

05/28/2019

05/28/2019

Analyzed By: ms

Surrogate: 1-Chlorooctane 37.4 %
Surrogate: 1-Chlorooctadecane 40.5 %

<10.0

<10.0

10.0

10.0

41-142

37.6-147

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Celeg D. Freene



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

05/24/2019

Sampling Date:

05/20/2019

Reported:

05/31/2019

Sampling Type:

Soil

Project Name:

PYGMY 27 STATE COM #1H

Sampling Condition:

Cool & Intact

Project Number: Project Location: (4/24/19)

COG- LEA CO NM

Sample Received By:

Tamara Oldaker

Sample ID: SP 8 @ 2' (H901867-46)

BTEX 8021B	mg/	kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/30/2019	ND	1.84	92.1	2.00	0.0184	
Toluene*	<0.050	0.050	05/30/2019	ND	1.99	99.4	2.00	0.178	
Ethylbenzene*	<0.050	0.050	05/30/2019	ND	1.89	94.5	2.00	0.213	
Total Xylenes*	<0.150	0.150	05/30/2019	ND	5.72	95.3	6.00	0.0278	
Total BTEX	<0.300	0.300	05/30/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	92.0	% 73.3-12	9						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	624	16.0	05/31/2019	ND	400	100	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/26/2019	ND	181	90.5	200	7.25	
DRO >C10-C28*	<10.0	10.0	05/26/2019	ND	190	95.0	200	1.96	
EXT DRO >C28-C36	<10.0	10.0	05/26/2019	ND					
Surrogate: 1-Chlorooctane	87.5 9	% 41-142							
Surrogate: 1-Chlorooctadecane	87.8 9	% 37.6-14	7						

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Celeg Ditreme



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

05/24/2019

Sampling Date:

05/20/2019

Reported:

05/31/2019

Sampling Type:

Soil

Project Name:

PYGMY 27 STATE COM #1H

Sampling Condition:

Cool & Intact

Project Number:

(4/24/19)

Sample Received By:

Tamara Oldaker

Project Location:

COG- LEA CO NM

Sample ID: SP 8 @ 3' (H901867-47)

Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	05/31/2019	ND	400	100	400	0.00	

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Celeg D. Frene



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

BTEX 8021B

05/24/2019

Sampling Date:

05/21/2019

Reported:

05/31/2019

Sampling Type:

Soil

Project Name:

PYGMY 27 STATE COM #1H

Sampling Condition: Sample Received By: Cool & Intact Tamara Oldaker

Project Number:

(4/24/19)

mg/kg

Project Location: COG- LEA CO NM

Sample ID: SP 9 @ SURFACE (H901867-48)

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/30/2019	ND	1.84	92.1	2.00	0.0184	
Toluene*	<0.050	0.050	05/30/2019	ND	1.99	99.4	2.00	0.178	
Ethylbenzene*	<0.050	0.050	05/30/2019	ND	1.89	94.5	2.00	0.213	
Total Xylenes*	<0.150	0.150	05/30/2019	ND	5.72	95.3	6.00	0.0278	
Total BTEX	<0.300	0.300	05/30/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	95.5	% 73.3-12	9						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: JH					
Chloride, SM4500CI-B Analyte	mg/ Result	Reporting Limit	Analyze Analyzed	d By: JH Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
,			<u> </u>		BS 400	% Recovery	True Value QC 400	RPD 0.00	Qualifier
Analyte	Result	Reporting Limit	Analyzed 05/31/2019	Method Blank		•	-		Qualifier
Analyte Chloride	Result	Reporting Limit	Analyzed 05/31/2019	Method Blank		•	-		Qualifier Qualifier
Analyte Chloride TPH 8015M	Result 9330 mg/	Reporting Limit 16.0	Analyzed 05/31/2019 Analyze	Method Blank ND d By: MS	400	100	400	0.00	

ND

Analyzed By: ms

Surrogate: 1-Chlorooctane

89.3 %

<10.0

41-142

05/26/2019

10.0

Surrogate: 1-Chlorooctadecane

EXT DRO >C28-C36

90.7 %

37.6-147

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Celeg D. Freene



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

BTEX 8021B

05/24/2019

Sampling Date:

05/21/2019

Reported:

05/31/2019

Sampling Type:

Soil

Project Name:

PYGMY 27 STATE COM #1H

Sampling Condition: Sample Received By: Cool & Intact Tamara Oldaker

Project Number:

(4/24/19)

Project Location:

COG- LEA CO NM

mg/kg

91.9 %

37.6-147

Sample ID: SP 9 @ 1' (H901867-49)

				-					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/30/2019	ND	1.84	92.1	2.00	0.0184	
Toluene*	< 0.050	0.050	05/30/2019	ND	1.99	99.4	2.00	0.178	
Ethylbenzene*	< 0.050	0.050	05/30/2019	ND	1.89	94.5	2.00	0.213	
Total Xylenes*	< 0.150	0.150	05/30/2019	ND	5.72	95.3	6.00	0.0278	
Total BTEX	<0.300	0.300	05/30/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	92.5 9	73.3-12	9						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	8660	16.0	05/31/2019	ND	400	100	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/26/2019	ND	181	90.5	200	7.25	
DRO >C10-C28*	<10.0	10.0	05/26/2019	ND	190	95.0	200	1.96	
EXT DRO >C28-C36	<10.0	10.0	05/26/2019	ND					
Surrogate: 1-Chlorooctane	91.0 9	% 41-142	1						

Analyzed By: ms

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Surrogate: 1-Chlorooctadecane

*=Accredited Analyte

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Celeg D. Freene



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

05/24/2019

Sampling Date:

05/21/2019

Reported:

05/31/2019

Sampling Type:

Soil

Project Name:

PYGMY 27 STATE COM #1H

Sampling Condition: Sample Received By: Cool & Intact Tamara Oldaker

Project Number:

(4/24/19)

Project Location:

COG- LEA CO NM

Sample ID: SP 9 @ 2' (H901867-50)

BTEX 8021B	mg/	kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/30/2019	ND	1.84	92.1	2.00	0.0184	
Toluene*	<0.050	0.050	05/30/2019	ND	1.99	99.4	2.00	0.178	
Ethylbenzene*	<0.050	0.050	05/30/2019	ND	1.89	94.5	2.00	0.213	
Total Xylenes*	<0.150	0.150	05/30/2019	ND	5.72	95.3	6.00	0.0278	
Total BTEX	<0.300	0.300	05/30/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	95.9 %	6 73.3-12	9						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	608	16.0	05/31/2019	ND	400	100	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/26/2019	ND	181	90.5	200	7.25	
DRO >C10-C28*	<10.0	10.0	05/26/2019	ND	190	95.0	200	1.96	
EXT DRO >C28-C36	<10.0	10.0	05/26/2019	ND					
Surrogate: 1-Chlorooctane	94.8 %	6 41-142							
Surrogate: 1-Chlorooctadecane	96.0 %	6 37.6-14	7						

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Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

05/24/2019

Sampling Date:

05/21/2019

Reported:

05/31/2019

Sampling Type:

Soil

Project Name:

PYGMY 27 STATE COM #1H

Sampling Condition:

Cool & Intact

Project Number:

(4/24/19)

Sample Received By:

Tamara Oldaker

Project Location:

COG- LEA CO NM

Sample ID: SP 9 @ 3' (H901867-51)

Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	05/31/2019	ND	400	100	400	0.00	

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Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

05/24/2019

Sampling Date:

05/21/2019

Reported:

05/31/2019

Sampling Type:

Soil

Project Name:

PYGMY 27 STATE COM #1H

Sampling Condition: Sample Received By: Cool & Intact Tamara Oldaker

Project Number:

(4/24/19)

Project Location:

COG- LEA CO NM

187 %

37.6-147

Sample ID: SP 10 @ SURFACE (H901867-52)

BTEX 8021B	mg/	kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/30/2019	ND	1.84	92.1	2.00	0.0184	
Toluene*	<0.050	0.050	05/30/2019	ND	1.99	99.4	2.00	0.178	
Ethylbenzene*	<0.050	0.050	05/30/2019	ND	1.89	94.5	2.00	0.213	
Total Xylenes*	<0.150	0.150	05/30/2019	ND	5.72	95.3	6.00	0.0278	
Total BTEX	<0.300	0.300	05/30/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	92.6	% 73.3-12	9						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	50400	16.0	05/31/2019	ND	400	100	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/26/2019	ND	181	90.5	200	7.25	
DRO >C10-C28*	1650	10.0	05/26/2019	ND	190	95.0	200	1.96	
EXT DRO >C28-C36	668	10.0	05/26/2019	ND					
Surrogate: 1-Chlorooctane	89.9	% 41-142	?						

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Surrogate: 1-Chlorooctadecane

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BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

BTEX 8021B

05/24/2019

Sampling Date:

05/21/2019

Reported:

05/31/2019

Sampling Type:

Soil

Project Name:

PYGMY 27 STATE COM #1H

Sampling Condition: Sample Received By: Cool & Intact Tamara Oldaker

Project Number:

(4/24/19)

Project Location:

COG- LEA CO NM

mg/kg

Sample ID: SP 10 @ 1' (H901867-53)

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/30/2019	ND	1.84	92.1	2.00	0.0184	
Toluene*	<0.050	0.050	05/30/2019	ND	1.99	99.4	2.00	0.178	
Ethylbenzene*	<0.050	0.050	05/30/2019	ND	1.89	94.5	2.00	0.213	
Total Xylenes*	<0.150	0.150	05/30/2019	ND	5.72	95.3	6.00	0.0278	
Total BTEX	<0.300	0.300	05/30/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	93.6	% 73.3-12	9						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1780	16.0	05/31/2019	ND	400	100	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/26/2019	ND	181	90.5	200	7.25	
DRO >C10-C28*	<10.0	10.0	05/26/2019	ND	190	95.0	200	1.96	
EXT DRO >C28-C36	<10.0	10.0	05/26/2019	ND					
Surrogate: 1-Chlorooctane	84.6	% 41-142							
Surrogate: 1-Chlorooctadecane	86.0	% 37.6-14	7						

Analyzed By: ms

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Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

05/24/2019

Sampling Date:

05/21/2019

Reported:

05/31/2019

Sampling Type:

Soil

Project Name:

PYGMY 27 STATE COM #1H

Reporting Limit

Sampling Condition:

Cool & Intact

Project Number:

Analyte

(4/24/19)

Project Location: COG- LEA CO NM

Sample Received By:

Tamara Oldaker

Sample ID: SP 10 @ 2' (H901867-54)

Chloride, S	M4500CI-B
-------------	-----------

mg/kg

Analyzed By: JH

% Recovery True Value QC

RPD (

Chloride

Result **656**

16.0 05/31/2019

Analyzed

Method Blank ND

Method Blank

BS 400

BS

100

% Recovery

100

400

Qualifier

Sample ID: SP 10 @ 3' (H901867-55)

Chloride, SM4500Cl-B

mg/kg

Analyzed By: JH

Analyte Result Reporting Limit

Chloride 80.0 16.0

Analyzed 05/31/2019

ND 400

400

True Value QC

RPD 0.00

0.00

PD Qualifier

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Celey D. Keene, Lab Director/Quality Manager

Page 40 of 51



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

05/24/2019

Sampling Date:

05/21/2019

Reported:

05/31/2019

Sampling Type:

Soil

Project Name:

PYGMY 27 STATE COM #1H

Sampling Condition: Sample Received By: Cool & Intact Tamara Oldaker

Project Number:

(4/24/19)

Project Location:

COG- LEA CO NM

Sample ID: NORTH @ SURFACE (H901867-56)

BTEX 8021B	mg/	kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/30/2019	ND	1.84	92.1	2.00	0.0184	
Toluene*	<0.050	0.050	05/30/2019	ND	1.99	99.4	2.00	0.178	
Ethylbenzene*	<0.050	0.050	05/30/2019	ND	1.89	94.5	2.00	0.213	
Total Xylenes*	<0.150	0.150	05/30/2019	ND	5.72	95.3	6.00	0.0278	
Total BTEX	<0.300	0.300	05/30/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	92.3	% 73.3-12	9						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	05/31/2019	ND	400	100	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/26/2019	ND	181	90.5	200	7.25	
DRO >C10-C28*	<10.0	10.0	05/26/2019	ND	190	95.0	200	1.96	
EXT DRO >C28-C36	<10.0	10.0	05/26/2019	ND					
Surrogate: 1-Chlorooctane	90.1	% 41-142							
Surrogate: 1-Chlorooctadecane	88.1	% 37.6-14	7						

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Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

05/24/2019

Sampling Date:

05/21/2019

Reported:

05/31/2019

Sampling Type:

Soil

Project Name:

PYGMY 27 STATE COM #1H

Sampling Condition:

Cool & Intact

Project Number:

(4/24/19)

Sample Received By:

Tamara Oldaker

Project Location:

COG- LEA CO NM

Sample ID: EAST @ SURFACE (H901867-57)

BTEX 8021B	mg/	kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/30/2019	ND	1.84	92.1	2.00	0.0184	
Toluene*	<0.050	0.050	05/30/2019	ND	1.99	99.4	2.00	0.178	
Ethylbenzene*	<0.050	0.050	05/30/2019	ND	1.89	94.5	2.00	0.213	
Total Xylenes*	<0.150	0.150	05/30/2019	ND	5.72	95.3	6.00	0.0278	
Total BTEX	<0.300	0.300	05/30/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	94.5 %	73.3-12	9						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	176	16.0	05/31/2019	ND	400	100	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/26/2019	ND	181	90.5	200	7.25	
DRO >C10-C28*	<10.0	10.0	05/26/2019	ND	190	95.0	200	1.96	
EXT DRO >C28-C36	<10.0	10.0	05/26/2019	ND					
Surrogate: 1-Chlorooctane	93.5 9	6 41-142	!						
Surrogate: 1-Chlorooctadecane	96.1 9	6 37.6-14	7						

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Celey D. Keine



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

05/24/2019

Sampling Date:

05/21/2019

Reported:

05/31/2019

Sampling Type:

Soil

Project Name:

PYGMY 27 STATE COM #1H

Sampling Condition: Sample Received By: Cool & Intact Tamara Oldaker

Project Number:

(4/24/19)

Project Location:

COG- LEA CO NM

Sample ID: WEST @ SURFACE (H901867-58)

BTEX 8021B	mg/	kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/31/2019	ND	1.87	93.4	2.00	1.31	
Toluene*	<0.050	0.050	05/31/2019	ND	1.99	99.3	2.00	0.659	
Ethylbenzene*	<0.050	0.050	05/31/2019	ND	1.90	94.9	2.00	0.274	
Total Xylenes*	<0.150	0.150	05/31/2019	ND	5.77	96.1	6.00	0.640	
Total BTEX	<0.300	0.300	05/31/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	106 9	% 73.3-12	9						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	16.0	05/31/2019	ND	400	100	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/26/2019	ND	181	90.5	200	7.25	
DRO >C10-C28*	<10.0	10.0	05/26/2019	ND	190	95.0	200	1.96	
EXT DRO >C28-C36	<10.0	10.0	05/26/2019	ND					
Surrogate: 1-Chlorooctane	70.6	% 41-142	ı						
Surrogate: 1-Chlorooctadecane	72.1	% 37.6-14	7						

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Celley D. Keine



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

05/24/2019

Sampling Date:

05/21/2019

Reported:

05/31/2019

Sampling Type:

Soil

Project Name:

PYGMY 27 STATE COM #1H

Sampling Condition:

Cool & Intact

Project Number:

(4/24/19)

Project Location: COG- LEA CO NM Sample Received By:

Tamara Oldaker

Sample ID: SOUTH @ SURFACE (H901867-59)

BTEX 8021B	mg	/kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/31/2019	ND	1.87	93.4	2.00	1.31	
Toluene*	<0.050	0.050	05/31/2019	ND	1.99	99.3	2.00	0.659	
Ethylbenzene*	<0.050	0.050	05/31/2019	ND	1.90	94.9	2.00	0.274	
Total Xylenes*	<0.150	0.150	05/31/2019	ND	5.77	96.1	6.00	0.640	
Total BTEX	<0.300	0.300	05/31/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	106	% 73.3-12	9						
Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	05/31/2019	ND	400	100	400	0.00	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/26/2019	ND	181	90.5	200	7.25	
DRO >C10-C28*	<10.0	10.0	05/26/2019	ND	190	95.0	200	1.96	
EXT DRO >C28-C36	<10.0	10.0	05/26/2019	ND					
Surrogate: 1-Chlorooctane	71.5	% 41-142)						
Surrogate: 1-Chlorooctadecane	73.6	% 37.6-14	7						

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*=Accredited Analyte

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Celley D. Keine

S-06



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Notes and Definitions

The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or

3-00	matrix interference's.
S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

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101 East Marland, Hobbs, NM 88240 (505) 393-2326 FAX (505) 393-2476

Company Name: BBC International, Inc.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

	BBC International, Inc.								BI	LL TO						ANA	LYSI	SR	EQUE	ST		
Project Manage	r: Cliff Brunson						P.	0. #:														
Address: P.O	. Box 805						C	ompar	ıy:	COG.		1		100								
city: Hobbs	State: NM	Zip	o:	8824	1		A	ttn:	+	faskell												
Phone #: 575-	397-6388 Fax #: 575	-39		397			A	ddress	s: ·						ľ	1						
Project #:	Project Owne	r:	(JO.	5		Ci	ity:				1			ii i				1			
Project Name:	PYGMY 27 STATE COM #1H (4/	24/1					St	tate:		Zip:		1		n i				1				
Project Location	n: LEA COUNTY, NM						PI	hone #	:					1		1						
Sampler Name:								ax #:											1			
FOR LAB USE ONLY			1		MAT	RIX		PRES	ERV	SAMPL	ING							1				
Lab I.D.	Sample I.D.	O(G)RAB OR (C)OMP	# CONTAINERS	GROUNDWATER	SOIL	OIL	OTHER:	ACID/BASE:	OTHER:	DATE	TIME	Cl	87EX	TPHEXT								
t	SP1 @ SURFACE	G	1	ZI.	/				1	5/16/19	2:50 PM	1	1	1	100							
2	SP1 @ 1'	1	1	1	1			1	F	5/16/19	3:01 PM	1	1	1								
34	SP1 @ 2'									5/16/19	3:10 PM	1	1	1					1			
4	SP1 @ 3'									5/16/19	3:20 PM	1										
5	SP1 @ 4'									5/16/19	3:30 PM	1								1 - 1		
6	SP1 @ 5'	11	11							5/16/19	3:33 PM	1										
7	SP1 @ 6'	11		Eir						5/17/19	9:59 AM	1			1							
8	SP1 @ 7'		11							5/17/19	10:15 AM	1										
9	SP2 @ SURFACE	11	11							5/17/19	10:33 AM	1	1	1	1							
10	SP2 @ 1'	V	V	P. J.	V				1	5/17/19	10:37 AM	1	1	1								
service In no event shall C affiliates or successors aris	nd Damages. Cardinal's liability and client's exclusive remedy for ing those for negligence and any other cause whatsoever shall be standard be liable for incidental or consequental damages, including out of or related to the performance of services hereunder by	deeme g witho	ut limi	ed unless ation, bus	s made in siness inte	writing a	and reci	eived by C of use, or I	ardinal (oss of p	within 30 days aft rofits incurred by	er completion of the	he applica ines,	ble									
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† Cardinal	cannot accept verbal changes. Pleas	e fax	wr		_			5-393-2	2476													

BILL TO

Page 47 of 51

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

ANALYSIS REQUEST

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RDINAL LABORATORIES 101 East Marland, Hobbs, NM 88240 (505) 393-2326 FAX (505) 393-2476

Company Name: BBC International, Inc.

DO							,	0. #:													
	. Box 805						Со	mpany:	: (2061		1									
city: Hobbs	State: NM	Zip	: 8	824	41		Att	tn:	4	askel							1.74				
Phone #: 575-3	397-6388 Fax # : 575	-397	7-03	397			Ad	dress:	11												1 1
Project #:	Project Owner	:	CC	6	1		Cit	ty:													
Project Name: F	PYGMY 27 STATE COM #1H (4/2	4/1	9)				Sta	ate:	Z	ip:											1 1
Project Location	n: LEA COUNTY, NM						Ph	one #:		•											1 1
Sampler Name:	JEFF ORNELAS						Fa	x #:													
FOR LAB USE ONLY		2.			MATR	IX	_	PRESER	RV.	SAMPL	ING										1 1
Lab I.D. H901 867	Sample I.D.	P(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER SOIL	SLUDGE	OTHER:	ACID/BASE: ICE / COOL	OTHER:	DATE	TIME	อ	87EX	TPHEKT							
	SP2 @ 2'	G	1		1			1		5/17/19	10:52 AM	1	1	1							
	SP2 @ 3'	1			1			1	5	5/17/19	11:09 AM	1									
	SP2 @ 4'		Ш						5	5/17/19	11:19 AM	1									
	SP2 @ 5'					- 41		11.1	5	5/17/19	11:33 AM	1									
15	SP2 @ 6'								5	5/17/19	11:51 AM	1									
16	SP3 @ SURFACE								5	5/17/19	11:55 AM	1	1	1							1
	SP3 @ 1'								5	5/17/19	12:01 PM	1	1	1							+
	SP3 @ 2'								5	5/17/19	12:12 PM	1	1	1							1
19	SP3 @ 3'		П		- 11/11				5	5/17/19	12:55 PM	1				7					1
	SP3 @ 4'	V	V		4			V	5	5/17/19	1:11 PM	1	T_j	1							
analyses. All claims including service. In no event shall Ca	ng those for negligence and any other cause whatsoever shall be a radinal be liable for incidental or consequental damages, including ng out of or related to the performance of services hereunder by Consequental states of the performance of services hereunder by Consequental States of the performance of services hereunder by Consequent States of the performance of servi	Re	waive	ed F	ss made in wri usiness interru if wether such \$4:	ptions, in claim is	s base	ived by Cardie f use plass edupon any of	inal with of profit of the a	in 30 days after the incurred by the bove stated re	a by the client for completion of it client, its subsidia asons or otherwis Phone Ret Fax Resul REMARKS	ne applica ries, se sult: t:	☐ Ye		No No	Add'l Add'l	Phone ‡ Fax #:	#:			

BILL TO

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Sampler - UPS - Bus - Other:

RDINAL LABORATORIES 101 East Marland, Hobbs, NM 88240 (505) 393-2326 FAX (505) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

City: Hobbs State: NM Zip: 88241 Attn: Phone #: 575-397-6388 Fax #: 575-397-0397 Address: Project #: Project Owner: City: Project Name: PYGMY 27 STATE COM #1H (4/24/19) State: Zip: Project Location: LEA COUNTY, NM Phone #: Sampler Name: JEFF ORNELAS For LAB USE ONLY Lab I.D. Sample I.D. State: NM Zip: 88241 Attn: Attn: City: Project Name: PYGMY 27 STATE COM #1H (4/24/19) State: Zip: Phone #: Sampler Name: JEFF ORNELAS Fax #: FOR LAB USE ONLY Lab I.D. Sample I.D.	ST
City: Hobbs	
City: Hobbs	
Phone #: 575-397-6388	
Project #: Project Owner: City: Project Name: PYGMY 27 STATE COM #1H (4/24/19) State: Zip: Project Location: LEA COUNTY, NM Phone #: Sampler Name: JEFF ORNELAS Fax #: FOR LAB USE ONLY MATRIX PRESERV. SAMPLING Lab I.D. Sample I.D. MATRIX PRESERV. SAMPLING 21 SP3 @ 5' James of the county of the count	
Project Name: PYGMY 27 STATE COM #1H (4/24/19) State: Zip: Project Location: LEA COUNTY, NM Phone #: Sampler Name: JEFF ORNELAS Fax #: FOR LAB USE ONLY MATRIX PRESERV. SAMPLING Lab I.D. Sample I.D. Washing and the properties of the propertie	
Project Location: LEA COUNTY, NM	
Sampler Name: JEFF ORNELAS Fax #: Fax #: For LAB USE ONLY MATRIX PRESERV. SAMPLING Fax #: Fax #: For LAB USE ONLY MATRIX PRESERV. SAMPLING Fax #: Fa	
Lab I.D. Sample I.D. MATRIX PRESERV. SAMPLING	
Lab I.D. Sample I.D. Wastewal Stude Stud	
21 SP3 @ 5'	
22 SP3 @ 6'	
72 004 0 04054.05	
ZY SP4 @ 1' 5/17/19 11:33 AM V V V	
25 SP4 @ 2' 5/17/19 11:51 AM 🗸 🗸	
26 SP4 @ 3' 5/17/19 11:55 AM J	
27 SP4 @ 4' 5/17/19 12:01 PM 🗸	
28 SP4 @ 5' 5/17/19 12:12 PM ✓	
29 SP5 @ SURFACE 5/17/19 12:55 PM 🗸 🗸	
36 SP5 @ 1' V V V 5/17/19 1:11 PM V V	
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Delivered By: (Circle One) Sampler URS Rue Others Date: Received By: Time: 15 m Multiple Date: Received By: Cool Intact (Initials)	

Cool Intact
Yes Yes
No No

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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RDINAL LABORATORIES 101 East Marland, Hobbs, NM 88240 (505) 393-2326 FAX (505) 393-2476

Project Manager: Cliff Brunson	1 1		< THWT	ALYSI					
City: Hobbs	1 /	+-	< THUXT					1	
City: Hobbs	1 /	+-	< THWT						
Project #: Project Owner: City: Project Name: PYGMY 27 STATE COM #1H (4/24/19) State: Zip: Project Location: LEA COUNTY, NM Phone #: Sampler Name: JEFF ORNELAS FOR LAB USE ONLY Lab I.D. Sample I.D. Way Way (2) 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 /	+-	< THURT					1	
Project Name: PYGMY 27 STATE COM #1H (4/24/19) State: Zip: Project Location: LEA COUNTY, NM Phone #: Sampler Name: JEFF ORNELAS Fax #: FOR LAB USE ONLY Sample I.D. MATRIX PRESERV. SAMPLING Lab I.D. Sample I.D. MATRIX PRESERV. SAMPLING Jay SP5 @ 2' G \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	1 /	+-	< TPHOXT						
Project Name: PYGMY 27 STATE COM #1H (4/24/19) State: Zip: Project Location: LEA COUNTY, NM Phone #: Sampler Name: JEFF ORNELAS Fax #: FOR LAB USE ONLY Sample I.D. MATRIX PRESERV. SAMPLING Lab I.D. Sample I.D. MATRIX PRESERV. SAMPLING Jay SP5 @ 2' G \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	1 /	+-	< THWT					ĭ	
Project Location: LEA COUNTY, NM Phone #: Fax #:	1 /	+-	< THUXT					1	
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Lab I.D. Sample I.D. Date I.D.	1 /	+-	< THWT						
3/ SP5 @ 2'	1 1	1	1						
32 SP5 @ 3'		-				+	1	+	
34 SP6 @ SURFACE 5/20/19 9:45 AN 35 SP6 @ 1' 5/20/19 9:55 AN 36 SP6 @ 2' 5/20/19 10:20 A 37 SP6 @ 3' 5/20/19 10:30 A 38 SP6 @ 4' 5/20/19 10:45 AN 5/20/19					1				-
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37 SP6 @ 3' 5/20/19 10:30 A SP6 @ 4' 5/20/19 10:45 A	1 /	1	1						
38 SP6 @ 4' 5/20/19 10:45 A	V V	1	1						
	M /	1							
	V V		i v						
39 SP7 @ SURFACE 5/20/19 10:56 A	N 🗸	1	1	ý T					
40 SP7 @ 1' V V J 5/20/19 11:11 A		1	1						
PLEASE NOTE: Liability and Damages. Qardinal's liability and client's exclusive remedy for any claim ansing whether based in contract or fort, shall be limited to the amount paid by the clien analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion service. In no event shall Cardinal be liable for incidental or consequental damages, including without limition, business interruptions, loss of profits incurred by client, its substantialists or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or othe Relinquished By: Phone I Fax Res Remark Phone I Fax Res Remark	of the applications of the	□ Ye		'I Phone 'I Fax #:					

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

RDINAL LABORATORIES 101 East Marland, Hobbs, NM 88240 (505) 393-2326 FAX (505) 393-2476

Company Name: BBC International, Inc.										BI	LL TO		ANALYSIS REQUEST									
	r: Cliff Brunson							P.O. #:							-	1	1		I	T		
Address: P.O	. Box 805							Company:							0 1							
City: Hobbs State: NM Zip: 88241								Attn: Haskell					1									
Phone #: 575-397-6388 Fax #: 575-397-0397								Address:														
Project #: Project Owner:								City:														
Project Name: PYGMY 27 STATE COM #1H (4/24/19)								State: Zip:														
Project Location: LEA COUNTY, NM							Phone #:												1			
Sampler Name: JEFF ORNELAS								Fax #:														
FOR LAB USE ONLY		T	T		MA	TRIX	_	_	PRESE	RV.	SAMPL	ING	1									
Lab I.D.	Sample I.D.	O(G)RAB OR (C)OMP	# CONTAINERS	GROUNDWATER	WASTEWATER	OIL	SLUDGE	OTHER:	ACID/BASE: ICE / COOL	OTHER:	DATE	TIME	()	BTEX	TPHEXT							
	SP7 @ 2'	G	1		1				1		5/20/19	11:30 AM	1	1	1							
	SP7 @ 3'	1	1		1				1		5/20/19	11:49 AM	1							7-		
	SP7 @ 4'										5/20/19	12:15 PM	1		1777							
44	SP8 @ SURFACE		П								5/20/19	12:19 PM	1	1	1							
45	SP8 @ 1'										5/20/19	12:33 PM	1	1	1							
	SP8 @ 2'										5/20/19	12:49 PM	1	1	1					_		
	SP8 @ 3'	П									5/20/19	1:11 PM	1				-			1		
48	SP9 @ SURFACE		11								5/21/19	8:49 AM	1	1	1					1		
49	SP9 @ 1'									H	5/21/19	9:11 AM	1	1	1					1		
50	SP9 @ 2'	V	V		1	1			V		5/21/19	9:29 AM	1	1	1					-		

analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service In no event shall Cardinal be liable for incidental or consequental damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise

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Relinquished By:	Date 24-19 Received By:					
Spart Lena	Time: 2:15 Pm Jamars 1 M	lat W				
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Sampler - UPS - Bus - Other:	5.10 Hg7 No No	(Initials)				
+ Cardinal cannot accent work-	Johannas Dissas familia					

Received by OCD: 8/3/2020 8:45:30 AM

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RDINAL LABORATORIES 101 East Marland, Hobbs, NM 88240

SWEST @ SURFACE

SOUTH @ SURFACE

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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Received by OCD: 8/3/2020 8:45:30 AM

Company Nam	e: BBC International, Inc.							BILL TO								ANALYSIS REQUEST				
Project Manage	er: Cliff Brunson							P.O. #:												
Address: P.O. Box 805								Company: .00												
city: Hobbs State: NM Zip: 88241							Attn: Hustoll					1								
Phone #: 575-397-6388 Fax #: 575-397-0397							Address:					1								
Project #: Project Owner: (06							City:					1								
Project Name: PYGMY 27 STATE COM #1H (4/24/19)							State: Zip:													
Project Location	n: LEA COUNTY, NM							Phone #:												
Sampler Name:	JEFF ORNELAS							Fax #:												
FOR LAB USE ONLY		1			M	ATRI	X	F	RESE	ERV.	SAMPL	ING	1	H						
Lab I.D. H901867 51 52	Sample I.D.	(G)RAB OR (C)OMP	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	SLUDGE	OTHER:	CE / COOL	OTHER:	DATE	TIME	G!	BT&	TPHENCY					
51	SP9 @ 3'	G	Ī	Ť			0,		1	1	5/21/19	9:55 AM	1				-			
52	SP10 @ SURFACE SP10 @ 1'	li	1		1				1		5/21/19	10:15 AM	1	1	1					
53	SP10 @ 1'	Π	П								5/21/19	10:29 AM	1	1	1		-			
	SP10 @ 2'		II								5/21/19	10:44 AM	1							
	SP10 @ 3'										5/21/19	10:59 AM	1	1.45						
56	NORTH @ SURFACE									E	5/21/19	11:11 AM	1	1	1					
57	EAST @ SURFACE		1/								5/21/19	11:20 AM	1	1	1					

5/21/19

5/21/19

11:30 AM

11:40 AM

analyses. All claims. including those for negligence and any other cause whatsoever shall be deemed valved unless made in writing and received by Cardinal within 30 days after completion of the applicable service in no event shall Cardinal be liable for incidental or consequental damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based up an any of the above stated reasons or otherwise

Relinquished By:	Date Receiv	ed By:	1	Phone Result:	☐ Yes	□ No	Add'l Phone #:	
1-000 A.O.	SICITI	111.00	2000	Fax Result:	☐ Yes	□ No	Add'l Fax #:	
18to Whiles	Tinge: 30~	grave 1-	mice	REMARKS:				
Relinquished By:	Date: Receiv	ed By:	Dan 1					
Shall end	Time:2/15 PM	Munre 1	Volados					
Delivered By: (Circle One)		Sample Condition	CHECKED BY:					
Sampler - UPS - Bus - Other:	5.1° #97	Cool Intact Yes Yes No No	(Initials)					
4 Cardinal samuel	Carried Albard Williams				_			

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July 30, 2019

Cliff Brunson

BBC International, Inc.

P.O. Box 805

Hobbs, NM 88241

RE: PYGMY 27 - 1H

Enclosed are the results of analyses for samples received by the laboratory on 07/29/19 11:25.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/ga/lab accred certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2

Haloacetic Acids (HAA-5)

Method EPA 524.2

Total Trihalomethanes (TTHM)

Method EPA 524.4

Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

Celey D. Keene

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

07/29/2019

Reported: Project Name:

BTEX 8021B

07/30/2019 PYGMY 27 - 1H

Project Number:

4-24-19

mg/kg

97.1 %

107 %

41-142

37.6-147

Project Location:

COG - 176

Sampling Date:

07/21/2019

Sampling Type:

Soil

Sampling Condition: Sample Received By: Cool & Intact

Tamara Oldaker

Sample ID: SP 1 (H902579-01)

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/29/2019	ND	2.00	100	2.00	3.10	
Toluene*	< 0.050	0.050	07/29/2019	ND	2.06	103	2.00	2.40	
Ethylbenzene*	< 0.050	0.050	07/29/2019	ND	1.99	99.5	2.00	3.85	
Total Xylenes*	<0.150	0.150	07/29/2019	ND	6.02	100	6.00	3.56	
Total BTEX	<0.300	0.300	07/29/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	105 %	6 73.3-12	9						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	07/29/2019	ND	432	108	400	3.77	
TPH 8015M									
1PH 8013M	mg/	kg	Analyze	d By: MS					
Analyte	mg/ Result	Reporting Limit	Analyze Analyzed	d By: MS Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
			<u> </u>	-	BS 206	% Recovery	True Value QC	RPD 2.76	Qualifier
Analyte	Result	Reporting Limit	Analyzed	Method Blank		,	•		Qualifier

Analyzed By: ms

Cardinal Laboratories

Surrogate: 1-Chlorooctane

Surrogate: 1-Chlorooctadecane

*=Accredited Analyte

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Celego treene

Celey D. Keene, Lab Director/Quality Manager



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

BTEX 8021B

07/29/2019

Sampling Date:

07/21/2019

Reported:

07/30/2019 PYGMY 27 - 1H

mg/kg

Sampling Type:

Soil

Project Name: Project Number:

4-24-19

Sampling Condition: Sample Received By: Cool & Intact Tamara Oldaker

Project Location:

Analyte

GRO C6-C10*

DRO >C10-C28*

EXT DRO >C28-C36

COG - 176

Sample ID: SP 3 (H902579-02)

TPH 8015M	mg/	kg	Analyze	d By: MS					
Chloride	16.0	16.0	07/29/2019	ND	432	108	400	3.77	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Surrogate: 4-Bromofluorobenzene (PID	102 %	% 73.3-12	9						
Total BTEX	<0.300	0.300	07/29/2019	ND					
Total Xylenes*	<0.150	0.150	07/29/2019	ND	6.02	100	6.00	3.56	
Ethylbenzene*	<0.050	0.050	07/29/2019	ND	1.99	99.5	2.00	3.85	
Toluene*	<0.050	0.050	07/29/2019	ND	2.06	103	2.00	2.40	
Benzene*	<0.050	0.050	07/29/2019	ND	2.00	100	2.00	3.10	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier

Method Blank

ND

ND

ND

BS

206

228

% Recovery

103

114

True Value QC

200

200

RPD

2.76

12.5

Qualifier

Analyzed

07/30/2019

07/30/2019

07/30/2019

Analyzed By: ms

Surrogate: 1-Chlorooctane 86.0 % 41-142
Surrogate: 1-Chlorooctadecane 102 % 37.6-147

Result

<10.0

<10.0

<10.0

Reporting Limit

10.0

10.0

10.0

Cardinal Laboratories *=Accredited Analyte

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Celego treene

Celey D. Keene, Lab Director/Quality Manager



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received: Reported: 07/29/2019

07/30/2019

Project Name: Project Number: PYGMY 27 - 1H 4-24-19

Project Location:

COG - 176

Sampling Date:

07/21/2019

Sampling Type:

Soil

Sampling Condition: Sample Received By: Cool & Intact

Tamara Oldaker

Sample ID: SP 4 (H902579-03)

BTEX 8021B	mg/	kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/29/2019	ND	2.00	100	2.00	3.10	
Toluene*	<0.050	0.050	07/29/2019	ND	2.06	103	2.00	2.40	
Ethylbenzene*	< 0.050	0.050	07/29/2019	ND	1.99	99.5	2.00	3.85	
Total Xylenes*	<0.150	0.150	07/29/2019	ND	6.02	100	6.00	3.56	
Total BTEX	<0.300	0.300	07/29/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	104 %	6 73.3-12	9						
Chloride, SM4500CI-B	mg/	kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	07/29/2019	ND	432	108	400	3.77	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/30/2019	ND	206	103	200	2.76	
DRO >C10-C28*	<10.0	10.0	07/30/2019	ND	228	114	200	12.5	
EXT DRO >C28-C36	<10.0	10.0	07/30/2019	ND					
Surrogate: 1-Chlorooctane	93.8	% 41-142							
Surrogate: 1-Chlorooctadecane	103 9	6 37.6-14	7						

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*=Accredited Analyte

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Celley D. Keine



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received: Reported:

RTFY 8021R

07/29/2019

Project Name:

07/30/2019 PYGMY 27 - 1H 4-24-19

ma/ka

Project Number: Project Location:

COG - 176

Sampling Date:

07/21/2019

Sampling Type:

Soil

Sampling Condition: Sample Received By: Cool & Intact

Tamara Oldaker

Sample ID: SP 29 (H902579-04)

B1EX 8021B	mg/	кд	Anaiyze	a By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/29/2019	ND	2.00	100	2.00	3.10	
Toluene*	<0.050	0.050	07/29/2019	ND	2.06	103	2.00	2.40	
Ethylbenzene*	<0.050	0.050	07/29/2019	ND	1.99	99.5	2.00	3.85	
Total Xylenes*	<0.150	0.150	07/29/2019	ND	6.02	100	6.00	3.56	
Total BTEX	<0.300	0.300	07/29/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	103 9	% 73.3-12	9						
Chloride, SM4500CI-B	mg/	'kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	07/29/2019	ND	432	108	400	3.77	
TPH 8015M	mg/	'kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/30/2019	ND	206	103	200	2.76	
DRO >C10-C28*	<10.0	10.0	07/30/2019	ND	228	114	200	12.5	
EXT DRO >C28-C36	<10.0	10.0	07/30/2019	ND					
Surrogate: 1-Chlorooctane	91.4	% 41-142	ı						
Surrogate: 1-Chlorooctadecane	98.8	% 37.6-14	7						

Analyzed By: me

Cardinal Laboratories

*=Accredited Analyte

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Celeg Theene



Notes and Definitions

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS

recovery.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

** Samples not received at proper temperature of 6°C or below.

*** Insufficient time to reach temperature.

- Chloride by SM4500Cl-B does not require samples be received at or below 6°C

Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories *=Accredited Analyte

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Celegy Theene

ARDINAL LABORATORIES 101 East Marland, Hobbs, NM 88240

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

93-2476	T	ANALYSIS DECUIEST
		ANALYSIS REQUEST
	P.O. #:	
	Company:	2
: NM zip: 88241	Attn:	4
575-397-0397	Address:	
t Owner: COG	City:	3 X .
4 4-29 19	State: Zip:	12/16/2
	Phone #:	
	Fax #:	
MATRIX	PRESERV. SAMPLING	MM J
(G)RAB OR (C)O # CONTAINERS GROUNDWATEI WASTEWATER SOIL OIL		
CIX	2 / / /33	49
811 2	1 / 222	
	10 000	
	e: NM zip: 88241 : 575-397-0397 et Owner: C O G 4 - 2 9 7 9	## BILL TO P.O. #: Company: Attn: 575-397-0397 Address: City: ## 4-24-/9 State: Zip: Phone #: Fax #: MATRIX PRESERV. SAMPLING

PLEASE NOTE: Liability and Carrages: Cardina's liability and client's exclusive remedy for any claim arising whither based in contact or fort, shall be limited to the amount paid by the clients of the applicable analyses. All claims including those to negligence and any other cause whistoever shall be deemed waived unliness made in writing and received by Cardinal within 30 days after completion of the applicable service. In one event shall Cardinal be liable for incidental or consequental damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, artificiates or successors arising out of or related to the performance of services hereunded by Cardinal, legaldises of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: Date: 21-1 Received By:	Phone Result: Yes No Add'l Phone #:
Relinquished by:	Fax Result: Yes No Add'l Fax #:
1-41 S Time: 100 2. 6 chly	REMARKS:
1/-4/ 20 8100	
Relinquished By: Date: 00. (G Received By:	
1 29-11	
4 Gelling Time:	
Delivered By: (Circle One) 12 6 #97 Sample Condition CHECKED BY:	1 \ , , 1// ,
Delivered By: (Circle One) -13.6 2 #97 Sample Condition Cool Intact (Initials)	1/1/14.
Sampler - UPS - Bus - Other:	
Carrected -13.CL No No	

[†] Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476



July 24, 2019

Cliff Brunson

BBC International, Inc.

P.O. Box 805

Hobbs, NM 88241

RE: PYGMY 27 - 1H

Enclosed are the results of analyses for samples received by the laboratory on 07/23/19 16:50.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/ga/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2

Haloacetic Acids (HAA-5)

Method EPA 524.2

Total Trihalomethanes (TTHM)

Method EPA 524.4

Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

Celeg D. Keens

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

07/23/2019

Reported:

07/24/2019 PYGMY 27 - 1H

Project Name: Project Number:

4-24-19

Project Location:

COG - 176

Sampling Date: 07/23/2019

Sampling Type:

Sampling Condition: Co Sample Received By: Jo

Cool & Intact Jodi Henson

Soil

Sample ID: SP 2 (H902538-01)

BTEX 8260B	mg/	'kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.025	0.025	07/24/2019	ND	1.99	99.4	2.00	3.26	
Toluene*	<0.025	0.025	07/24/2019	ND	2.30	115	2.00	0.462	
Ethylbenzene*	<0.025	0.025	07/24/2019	ND	2.27	114	2.00	1.48	
Total Xylenes*	<0.075	0.075	07/24/2019	ND	7.20	120	6.00	1.44	
Total BTEX	<0.150	0.150	07/24/2019	ND					
Surrogate: Dibromofluoromethane	94.4	% 90.4-11	1						
Surrogate: Toluene-d8	106 9	% 85.3-11	4						
Surrogate: 4-Bromofluorobenzene	92.0	% 80.1-12	1						
Chloride, SM4500Cl-B	mg/	/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	10800	16.0	07/24/2019	ND	432	108	400	3.77	
TPH 8015M	mg/	'kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/24/2019	ND	187	93.3	200	2.77	
DRO >C10-C28*	17.6	10.0	07/24/2019	ND	188	94.1	200	1.57	
EXT DRO >C28-C36	10.8	10.0	07/24/2019	ND					
Surrogate: 1-Chlorooctane	74.7	% 41-142	!						
Surrogate: 1-Chlorooctadecane	80.0	% 37.6-14	7						

Cardinal Laboratories

*=Accredited Analyte

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Celeg D. Kreene



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

07/23/2019

Sampling Date:

07/23/2019

Reported: Project Name: 07/24/2019 PYGMY 27 - 1H

mg/kg

69.8 %

37.6-147

Sampling Type: Sampling Condition:

Cool & Intact

Soil

Project Number: Project Location:

BTEX 8260B

4-24-19 COG - 176 Sample Received By:

Jodi Henson

Sample ID: SP 5 (H902538-02)

DIEX OZOOD	mg,	, kg	Alldiy20	a by. ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.025	0.025	07/24/2019	ND	1.99	99.4	2.00	3.26	
Toluene*	<0.025	0.025	07/24/2019	ND	2.30	115	2.00	0.462	
Ethylbenzene*	<0.025	0.025	07/24/2019	ND	2.27	114	2.00	1.48	
Total Xylenes*	<0.075	0.075	07/24/2019	ND	7.20	120	6.00	1.44	
Total BTEX	<0.150	0.150	07/24/2019	ND					
Surrogate: Dibromofluoromethane	94.0	% 90.4-11	1						
Surrogate: Toluene-d8	105	% 85.3-11	4						
Surrogate: 4-Bromofluorobenzene	91.7	% 80.1-12	1						
Chloride, SM4500Cl-B	mg	/kg	Analyze	Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	224	16.0	07/24/2019	ND	432	108	400	3.77	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/24/2019	ND	187	93.3	200	2.77	
DRO >C10-C28*	<10.0	10.0	07/24/2019	ND	188	94.1	200	1.57	
EXT DRO >C28-C36	<10.0	10.0	07/24/2019	ND					
Surrogate: 1-Chlorooctane	67.5	% 41-142	!						
			_						

Analyzed By: ms

Cardinal Laboratories

Surrogate: 1-Chlorooctadecane

*=Accredited Analyte

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Celeg Theene



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 07/23/2019

Reported: 07/24/2019
Project Name: PYGMY 27 - 1H
Project Number: 4-24-19

mg/kg

Project Location: COG - 176

Sampling Date: 07/23/2019

Sampling Type: Soil

Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: SP 6 (H902538-03)

BTEX 8260B

	<u> </u>			• •					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.025	0.025	07/24/2019	ND	1.99	99.4	2.00	3.26	
Toluene*	<0.025	0.025	07/24/2019	ND	2.30	115	2.00	0.462	
Ethylbenzene*	<0.025	0.025	07/24/2019	ND	2.27	114	2.00	1.48	
Total Xylenes*	<0.075	0.075	07/24/2019	ND	7.20	120	6.00	1.44	
Total BTEX	<0.150	0.150	07/24/2019	ND					
Surrogate: Dibromofluoromethane	92.8	% 90.4-11	1						
Surrogate: Toluene-d8	105	% 85.3-11	4						
Surrogate: 4-Bromofluorobenzene	89.5	% 80.1-12	1						
Chloride, SM4500CI-B	mg,	/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	320	16.0	07/24/2019	ND	432	108	400	3.77	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/24/2019	ND	187	93.3	200	2.77	
DRO >C10-C28*	<10.0	10.0	07/24/2019	ND	188	94.1	200	1.57	
EXT DRO >C28-C36	<10.0	10.0	07/24/2019	ND					
Surrogate: 1-Chlorooctane	68.2	% 41-142	?						
Surrogate: 1-Chlorooctadecane	71.1	% 37.6-14	7						

Analyzed By: ms

Cardinal Laboratories *=Accredited Analyte

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Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 07/23/2019

Reported: 07/24/2019
Project Name: PYGMY 27 - 1H
Project Number: 4-24-19

COG - 176

mg/kg

Sampling Date: 07/23/2019

Sampling Type: Soil

Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: SP 7 (H902538-04)

Project Location:

BTEX 8260B

BIEN GEGGE	9/	1.9	Analyzo	a By: IIIS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.025	0.025	07/24/2019	ND	1.99	99.4	2.00	3.26	
Toluene*	<0.025	0.025	07/24/2019	ND	2.30	115	2.00	0.462	
Ethylbenzene*	<0.025	0.025	07/24/2019	ND	2.27	114	2.00	1.48	
Total Xylenes*	<0.075	0.075	07/24/2019	ND	7.20	120	6.00	1.44	
Total BTEX	<0.150	0.150	07/24/2019	ND					
Surrogate: Dibromofluoromethane	94.2	% 90.4-11	1						
Surrogate: Toluene-d8	106	% 85.3-11	4						
Surrogate: 4-Bromofluorobenzene	88.3	% 80.1-12	1						
Chloride, SM4500Cl-B	mg,	/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	512	16.0	07/24/2019	ND	432	108	400	3.77	
TPH 8015M	mg,	/kg	Analyze	ed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/24/2019	ND	187	93.3	200	2.77	
DRO >C10-C28*	<10.0	10.0	07/24/2019	ND	188	94.1	200	1.57	
EXT DRO >C28-C36	<10.0	10.0	07/24/2019	ND					
Surrogate: 1-Chlorooctane	67.7	% 41-142	?						
Surrogate: 1-Chlorooctadecane	72.0	% 37.6-14	7						

Analyzed By: ms

Cardinal Laboratories *=Accredited Analyte

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Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

07/23/2019

Reported: Project Name: 07/24/2019 PYGMY 27 - 1H

mg/kg

Project Number: Project Location:

BTEX 8260B

4-24-19 COG - 176 Sampling Date:

07/23/2019

Sampling Type:

Soil

Sampling Condition: Sample Received By: Cool & Intact Jodi Henson

Sample ID: SP 9 (H902538-05)

DILX 0200D	ilig/	r kg	Allalyze	a by. IIIs					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.025	0.025	07/24/2019	ND	1.99	99.4	2.00	3.26	
Toluene*	<0.025	0.025	07/24/2019	ND	2.30	115	2.00	0.462	
Ethylbenzene*	<0.025	0.025	07/24/2019	ND	2.27	114	2.00	1.48	
Total Xylenes*	<0.075	0.075	07/24/2019	ND	7.20	120	6.00	1.44	
Total BTEX	<0.150	0.150	07/24/2019	ND					
Surrogate: Dibromofluoromethane	93.1	% 90.4-11	1						
Surrogate: Toluene-d8	105	% 85.3-11	4						
Surrogate: 4-Bromofluorobenzene	88.6	% 80.1-12	1						
Chloride, SM4500Cl-B	mg,	mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3280	16.0	07/24/2019	ND	432	108	400	3.77	
TPH 8015M	mg,	/kg	Analyze	ed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/24/2019	ND	187	93.3	200	2.77	
DRO >C10-C28*	<10.0	10.0	07/24/2019	ND	188	94.1	200	1.57	
EXT DRO >C28-C36	<10.0	10.0	07/24/2019	ND					
Surrogate: 1-Chlorooctane	68.6	% 41-142	?						
Surrogate: 1-Chlorooctadecane	71.5	% 37.6-14	7						

Analyzed By: ms

Cardinal Laboratories

*=Accredited Analyte

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Celeg D. Freene



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

07/23/2019

Sampling Date:

07/23/2019

Reported: Project Name: 07/24/2019 PYGMY 27 - 1H Sampling Type:

Soil

Project Number:

4-24-19

Sampling Condition: Sample Received By: Cool & Intact Jodi Henson

Project Location: COG - 176

Sample ID: SP 10 (H902538-06)

BTEX 8260B	mg	/kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.025	0.025	07/24/2019	ND	1.99	99.4	2.00	3.26	
Toluene*	<0.025	0.025	07/24/2019	ND	2.30	115	2.00	0.462	
Ethylbenzene*	<0.025	0.025	07/24/2019	ND	2.27	114	2.00	1.48	
Total Xylenes*	<0.075	0.075	07/24/2019	ND	7.20	120	6.00	1.44	
Total BTEX	<0.150	0.150	07/24/2019	ND					
Surrogate: Dibromofluoromethane	92.3	% 90.4-11	1						
Surrogate: Toluene-d8	104	% 85.3-11	4						
Surrogate: 4-Bromofluorobenzene	88.2	% 80.1-12	1						
Chloride, SM4500Cl-B	mg,	/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	07/24/2019	ND	432	108	400	3.77	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/24/2019	ND	187	93.3	200	2.77	
DRO >C10-C28*	<10.0	10.0	07/24/2019	ND	188	94.1	200	1.57	
EXT DRO >C28-C36	<10.0	10.0	07/24/2019	ND					
Surrogate: 1-Chlorooctane	70.2	% 41-142	?						
Surrogate: 1-Chlorooctadecane	73.2	% 37.6-14	7						

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Celley D. Keine



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

07/23/2019

Reported: Project Name: 07/24/2019 PYGMY 27 - 1H 4-24-19

Project Number: Project Location:

Sampling Date:

07/23/2019

Sampling Type:

Soil

Sampling Condition: Sample Received By: Cool & Intact Jodi Henson

COG - 176

Sample ID: SP 11 (H902538-07)

BTEX 8260B	mg	/kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.025	0.025	07/24/2019	ND	1.99	99.4	2.00	3.26	
Toluene*	<0.025	0.025	07/24/2019	ND	2.30	115	2.00	0.462	
Ethylbenzene*	<0.025	0.025	07/24/2019	ND	2.27	114	2.00	1.48	
Total Xylenes*	<0.075	0.075	07/24/2019	ND	7.20	120	6.00	1.44	
Total BTEX	<0.150	0.150	07/24/2019	ND					
Surrogate: Dibromofluoromethane	96.6	% 90.4-11	1						
Surrogate: Toluene-d8	105	% 85.3-11	4						
Surrogate: 4-Bromofluorobenzene	89.5	% 80.1-12	1						
Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	07/24/2019	ND	432	108	400	3.77	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/24/2019	ND	193	96.3	200	1.33	
DRO >C10-C28*	<10.0	10.0	07/24/2019	ND	184	91.8	200	1.43	
EXT DRO >C28-C36	<10.0	10.0	07/24/2019	ND					
Surrogate: 1-Chlorooctane	90.5	% 41-142	?						
Surrogate: 1-Chlorooctadecane	92.2	% 37.6-14	7						

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Celley D. Keine



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 0

07/23/2019 07/24/2019

COG - 176

Project Name: Project Number: PYGMY 27 - 1H 4-24-19

mg/kg

Project Location:

Sampling Date: 07/23/2019

Sampling Type: Soil

Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: SP 12 (H902538-08)

BTEX 8260B

DILX 0200D	ilig	r kg	Allalyze	a by. IIIs					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.025	0.025	07/24/2019	ND	1.99	99.4	2.00	3.26	
Toluene*	<0.025	0.025	07/24/2019	ND	2.30	115	2.00	0.462	
Ethylbenzene*	<0.025	0.025	07/24/2019	ND	2.27	114	2.00	1.48	
Total Xylenes*	<0.075	0.075	07/24/2019	ND	7.20	120	6.00	1.44	
Total BTEX	<0.150	0.150	07/24/2019	ND					
Surrogate: Dibromofluoromethane	95.0	% 90.4-11	1						
Surrogate: Toluene-d8	103	% 85.3-11	4						
Surrogate: 4-Bromofluorobenzene	87.7	% 80.1-12	1						
Chloride, SM4500CI-B	mg	/kg	Analyze	ed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	784	16.0	07/24/2019	ND	432	108	400	3.77	
TPH 8015M	mg	/kg	Analyze	ed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/24/2019	ND	193	96.3	200	1.33	
DRO >C10-C28*	<10.0	10.0	07/24/2019	ND	184	91.8	200	1.43	
EXT DRO >C28-C36	<10.0	10.0	07/24/2019	ND					
Surrogate: 1-Chlorooctane	85.9	% 41-142	?						
Surrogate: 1-Chlorooctadecane	87.9	% 37.6-14	7						

Analyzed By: ms

Cardinal Laboratories *=Accredited Analyte

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Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 07/23/2019

07/24/2019 PYGMY 27 - 1H

mg/kg

4-24-19

Project Location: COG - 176

Sampling Date: 07/23/2019

Sampling Type: Soil

Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: SP 13 (H902538-09)

Reported:

BTEX 8260B

Project Name:

Project Number:

BIEN GEGGE	9/	119	Analyzo	a by: iiis					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.025	0.025	07/24/2019	ND	1.99	99.4	2.00	3.26	
Toluene*	<0.025	0.025	07/24/2019	ND	2.30	115	2.00	0.462	
Ethylbenzene*	<0.025	0.025	07/24/2019	ND	2.27	114	2.00	1.48	
Total Xylenes*	<0.075	0.075	07/24/2019	ND	7.20	120	6.00	1.44	
Total BTEX	<0.150	0.150	07/24/2019	ND					
Surrogate: Dibromofluoromethane	93.7	% 90.4-11	1						
Surrogate: Toluene-d8	105	% 85.3-11	4						
Surrogate: 4-Bromofluorobenzene	88.8	% 80.1-12	1						
Chloride, SM4500Cl-B	mg	/kg	Analyze	ed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	912	16.0	07/24/2019	ND	432	108	400	3.77	
TPH 8015M	mg,	/kg	Analyze	ed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/24/2019	ND	193	96.3	200	1.33	
DRO >C10-C28*	<10.0	10.0	07/24/2019	ND	184	91.8	200	1.43	
EXT DRO >C28-C36	<10.0	10.0	07/24/2019	ND					
Surrogate: 1-Chlorooctane	82.7	% 41-142	?						
Surrogate: 1-Chlorooctadecane	86.8	% 37.6-14	7						

Analyzed By: ms

Cardinal Laboratories *=Accredited Analyte

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Celeg Theene



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received: Reported:

BTEX 8260B

07/23/2019

Project Name:

07/24/2019 PYGMY 27 - 1H

mg/kg

Project Number: Project Location: 4-24-19 COG - 176 Sampling Date:

07/23/2019

Sampling Type:

Soil

Sampling Condition: Sample Received By: Cool & Intact Jodi Henson

Sample ID: SP 14 (H902538-10)

BIEN GEGGE	9/	119	Analyzo	a 27: 1113					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.025	0.025	07/24/2019	ND	1.99	99.4	2.00	3.26	
Toluene*	<0.025	0.025	07/24/2019	ND	2.30	115	2.00	0.462	
Ethylbenzene*	<0.025	0.025	07/24/2019	ND	2.27	114	2.00	1.48	
Total Xylenes*	<0.075	0.075	07/24/2019	ND	7.20	120	6.00	1.44	
Total BTEX	<0.150	0.150	07/24/2019	ND					
Surrogate: Dibromofluoromethane	93.4	% 90.4-11	1						
Surrogate: Toluene-d8	105	% 85.3-11	4						
Surrogate: 4-Bromofluorobenzene	88.9	% 80.1-12	1						
Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	5680	16.0	07/24/2019	ND	432	108	400	3.77	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/24/2019	ND	193	96.3	200	1.33	
DRO >C10-C28*	<10.0	10.0	07/24/2019	ND	184	91.8	200	1.43	
EXT DRO >C28-C36	<10.0	10.0	07/24/2019	ND					
Surrogate: 1-Chlorooctane	92.5	% 41-142	?						
Surrogate: 1-Chlorooctadecane	94.2	% 37.6-14	7						

Analyzed By: ms

Cardinal Laboratories

*=Accredited Analyte

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Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received: Reported: 07/23/2019

07/24/2019

Project Name: Project Number: PYGMY 27 - 1H 4-24-19

Project Location:

COG - 176

Sampling Date:

07/23/2019

Sampling Type:

Soil

Sampling Condition: Sample Received By: Cool & Intact

Jodi Henson

Sample ID: SP 15 (H902538-11)

BTEX 8260B	mg,	/kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.025	0.025	07/24/2019	ND	1.99	99.4	2.00	3.26	
Toluene*	<0.025	0.025	07/24/2019	ND	2.30	115	2.00	0.462	
Ethylbenzene*	<0.025	0.025	07/24/2019	ND	2.27	114	2.00	1.48	
Total Xylenes*	<0.075	0.075	07/24/2019	ND	7.20	120	6.00	1.44	
Total BTEX	<0.150	0.150	07/24/2019	ND					
Surrogate: Dibromofluoromethane	95.2	% 90.4-11	1						
Surrogate: Toluene-d8	105	% 85.3-11	4						
Surrogate: 4-Bromofluorobenzene	85.7	% 80.1-12	1						
Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	608	16.0	07/24/2019	ND	432	108	400	3.77	
TPH 8015M	mg,	'kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/24/2019	ND	193	96.3	200	1.33	
DRO >C10-C28*	<10.0	10.0	07/24/2019	ND	184	91.8	200	1.43	
EXT DRO >C28-C36	<10.0	10.0	07/24/2019	ND					
Surrogate: 1-Chlorooctane	89.2	% 41-142	,						
Surrogate: 1-Chlorooctadecane	92.4	% 37.6-14	7						

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Celley D. Keine



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

07/23/2019

Sampling Date:

07/23/2019

Reported: Project Name: 07/24/2019 PYGMY 27 - 1H Sampling Type: Sampling Condition: Soil Cool & Intact

Project Number:

4-24-19

Sample Received By:

Jodi Henson

Project Location:

COG - 176

Sample ID: SP 16 (H902538-12)

BTEX 8260B	mg,	/kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.025	0.025	07/24/2019	ND	1.99	99.4	2.00	3.26	
Toluene*	<0.025	0.025	07/24/2019	ND	2.30	115	2.00	0.462	
Ethylbenzene*	<0.025	0.025	07/24/2019	ND	2.27	114	2.00	1.48	
Total Xylenes*	<0.075	0.075	07/24/2019	ND	7.20	120	6.00	1.44	
Total BTEX	<0.150	0.150	07/24/2019	ND					
Surrogate: Dibromofluoromethane	92.5	% 90.4-11	1						
Surrogate: Toluene-d8	105	% 85.3-11	4						
Surrogate: 4-Bromofluorobenzene	89.9	% 80.1-12	1						
Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	640	16.0	07/24/2019	ND	432	108	400	3.77	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/24/2019	ND	193	96.3	200	1.33	
DRO >C10-C28*	<10.0	10.0	07/24/2019	ND	184	91.8	200	1.43	
EXT DRO >C28-C36	<10.0	10.0	07/24/2019	ND					
Surrogate: 1-Chlorooctane	88.8	% 41-142	?						
Surrogate: 1-Chlorooctadecane	91.3	% 37.6-14	7						

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Celley D. Keine

Celey D. Keene, Lab Director/Quality Manager



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 07/23/2019

Reported: 07/24/2019
Project Name: PYGMY 27 - 1H
Project Number: 4-24-19

mg/kg

Project Location: COG - 176

Sampling Date: 07/23/2019

Sampling Type: Soil

Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: SP 17 (H902538-13)

BTEX 8260B

BIEN GEGGE	9/	119	Analyzo	a By: IIIS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.025	0.025	07/24/2019	ND	1.99	99.4	2.00	3.26	
Toluene*	<0.025	0.025	07/24/2019	ND	2.30	115	2.00	0.462	
Ethylbenzene*	<0.025	0.025	07/24/2019	ND	2.27	114	2.00	1.48	
Total Xylenes*	<0.075	0.075	07/24/2019	ND	7.20	120	6.00	1.44	
Total BTEX	<0.150	0.150	07/24/2019	ND					
Surrogate: Dibromofluoromethane	94.7	% 90.4-11	1						
Surrogate: Toluene-d8	106	% 85.3-11	4						
Surrogate: 4-Bromofluorobenzene	87.5	% 80.1-12	1						
Chloride, SM4500Cl-B	mg	/kg	Analyze	ed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	07/24/2019	ND	432	108	400	3.77	
TPH 8015M	mg,	/kg	Analyze	ed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/24/2019	ND	193	96.3	200	1.33	
DRO >C10-C28*	<10.0	10.0	07/24/2019	ND	184	91.8	200	1.43	
EXT DRO >C28-C36	<10.0	10.0	07/24/2019	ND					
Surrogate: 1-Chlorooctane	88.3	% 41-142	?						
Surrogate: 1-Chlorooctadecane	89.1	% 37.6-14	7						

Analyzed By: ms

Cardinal Laboratories *=Accredited Analyte

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Notes and Definitions

QR-03 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch

accepted based on LCS and/or LCSD recovery and/or RPD values.

BS1 Blank spike recovery above laboratory acceptance criteria. Results for analyte potentially biased high.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

** Samples not received at proper temperature of 6°C or below.

*** Insufficient time to reach temperature.

- Chloride by SM4500Cl-B does not require samples be received at or below 6°C

Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories *=Accredited Analyte

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Celeg D. Freene

Page 95 of 220

Received by OCD: 8/3/2020 8:45:30 AM

ARDINAL LABORATORIES 101 East Marland, Hobbs, NM 88240 (505) 393-2326 FAX (505) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

1/2

Company Name: BBC International, Inc.		BILL TO	ANALYSIS REQUEST
Project Manager: Cliff Brunson		P.O. #:	
Address: P.O. Box 805		Company:	
City: Hobbs State: NM	Zip: 88241	Attn:	
	5-397-0397	Address:	
Project #: Project Own	er: CoC	City:	
^	9.7.4-19	State: Zip:	
Project Location: / 71	10.	Phone #:	
Sampler Name:		Fax #:	
FOR LAB USE ONLY	MATRIX	PRESERV. SAMPLING	V CM J W P
Lab I.D. Sample I.D. H902538 I Sp 2 3 5 5 4 5 7 5 9 6 5 10 7 5 11 9 5 12 PLEASE NOTE: Liability and Damarks Cardinal's liability and client's exclusive remedy: analyses All claims including those for negligence and any other cause whatsoever shall	C I A C I A	DATE TIME JOSUPH DATE TIME JOSUPH DATE TIME JOSUPH DATE JOSUPH DAT	L X X X X X X X X X X X X X X X X X X X
Relinquished By: Relinquished By: Date: Time: Time:	Received By:	s, loss of use, or loss of profits incurred by client, its subsidiaries, m is based upon any of the above stated reasons or otherwise. Phone Result Fax Result: REMARKS:	euset tolah from fulco.
Delivered By: (Circle One) 12.02 1. Sampler - UPS - Bus - Other: Corrected	Sample Cond Cool Intact	es	ouset to lab from fuld.

Received by OCD: 8/3/2020 8:45:30 AM

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

ARDINAL LABORATORIES 101 East Marland, Hobbs, NM 88240
(505) 393-2326 FAX (505) 393-2476

Company Name: BBC International, Inc.		BILL TO	ANALYSIS REQUEST
Project Manager: Cliff Brunson		P.O. #:	THE TOTAL PROPERTY OF THE PROP
Address: P.O. Box 805		Company:	
FTE ALL SULLS	Zip: 88241	Attn:	
Phone #: 575-397-6388 Fax #: 575	5-397-0397	Address:	
Project #: Project Owner	er: CoG	City:	
Project Name: Pygung 27-1H	4.24-19	State: Zip:	1×1 ×1
Project Location: 176		Phone #:	1,21,11
Sampler Name:		Fax #:	
FOR LAB USE ONLY	MATRIX	PRESERV. SAMPLING	1 162 (1 1 1 1 1 1 1 1 1
Lab I.D. Sample I.D. H907538 12 56 15 13 56 17	(G) (G) (RAB OR (C) OMP ———————————————————————————————————	TOTHER: ACIDIBASE: ACIDIBASE	
EASE NOTE: Liability and Damages Cardinal's liability and client's exclusive remedy for a alyses. All claims including those for negligence and any other cause whatsoever shall be or tyice. In no event shall Cardinal be liable for incidental or consequental damages, including	ny claim arising whether based in contra	at or tort, shall be limited to the amount paid by the client for	the
vice. In no event shall Cardinal be liable for incidental or consequental damages, including liates or successors arising out of or related to the performance of services bereinder by C	without limitation, business interruptions	loss of use, or loss of profits incurred by client, its substitu-	ne applicable
elinquished By: Date: 723/9 Time/ :50 Date: Date:	Received By: Received By:	is based upon any of the above stated reasons or otherwise Phone Res Fax Result REMARKS	sult:
Delivered By: (Circle One)	\$3 Sample Condit		Rush!
† Cardinal cannot accept verbal changes. Please	Cool Intact Yes Ye No No	(Initials)	what to lab from field.



July 25, 2019

Cliff Brunson

BBC International, Inc.

P.O. Box 805

Hobbs, NM 88241

RE: PYGMY 27 - 1H

Enclosed are the results of analyses for samples received by the laboratory on 07/24/19 16:55.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/ga/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2

Haloacetic Acids (HAA-5)

Method EPA 524.2

Total Trihalomethanes (TTHM)

Method EPA 524.4

Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

Celeg D. Keens

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 07/24/2019

Reported: 07/25/2019
Project Name: PYGMY 27 - 1H
Project Number: 4-24-19

Project Location: COG - 176

Sampling Date: 07/24/2019

Sampling Type: Soil

Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 8 (H902545-01)

BTEX 8260B	mg,	'kg	Analyze	d By: ms					S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.025	0.025	07/24/2019	ND	1.90	95.0	2.00	1.52	
Toluene*	<0.025	0.025	07/24/2019	ND	2.11	105	2.00	0.800	
Ethylbenzene*	<0.025	0.025	07/24/2019	ND	2.14	107	2.00	0.447	
Total Xylenes*	<0.075	0.075	07/24/2019	ND	6.86	114	6.00	1.54	
Total BTEX	<0.150	0.150	07/24/2019	ND					
Surrogate: Dibromofluoromethane	90.3	% 90.4-11	1						
Surrogate: Toluene-d8	104	% 85.3-11	4						
Surrogate: 4-Bromofluorobenzene	94.2	% 80.1-12	1						
Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	07/25/2019	ND	416	104	400	3.92	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/24/2019	ND	187	93.3	200	2.77	
DRO >C10-C28*	<10.0	10.0	07/24/2019	ND	188	94.1	200	1.57	
EXT DRO >C28-C36	<10.0	10.0	07/24/2019	ND					
Surrogate: 1-Chlorooctane	78.1	% 41-142	•						
Surrogate: 1-Chlorooctadecane	80.4	% 37.6-14	7						

Cardinal Laboratories *=Accredited Analyte

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Celeg Theene



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

07/24/2019

Reported: Project Name: 07/25/2019 PYGMY 27 - 1H 4-24-19

Project Number: Project Location:

COG - 176

Sampling Date:

07/24/2019

Sampling Type:

Soil

Sampling Condition: Sample Received By: Cool & Intact

Tamara Oldaker

Sample ID: SP 18 (H902545-02)

BTEX 8260B	mg,	/kg	Analyze	d By: ms					S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.025	0.025	07/24/2019	ND	1.90	95.0	2.00	1.52	
Toluene*	<0.025	0.025	07/24/2019	ND	2.11	105	2.00	0.800	
Ethylbenzene*	<0.025	0.025	07/24/2019	ND	2.14	107	2.00	0.447	
Total Xylenes*	<0.075	0.075	07/24/2019	ND	6.86	114	6.00	1.54	
Total BTEX	<0.150	0.150	07/24/2019	ND					
Surrogate: Dibromofluoromethane	89.7	% 90.4-11	1						
Surrogate: Toluene-d8	104	% 85.3-11	4						
Surrogate: 4-Bromofluorobenzene	93.8	% 80.1-12	1						
Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	160	16.0	07/25/2019	ND	416	104	400	3.92	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/24/2019	ND	187	93.3	200	2.77	
DRO >C10-C28*	<10.0	10.0	07/24/2019	ND	188	94.1	200	1.57	
EXT DRO >C28-C36	<10.0	10.0	07/24/2019	ND					
Surrogate: 1-Chlorooctane	71.3	% 41-142	?						
Surrogate: 1-Chlorooctadecane	75.8	% 37.6-14	7						

Cardinal Laboratories

*=Accredited Analyte

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Celeg D. Keine

S-04



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 07/24/2019

Reported: 07/25/2019
Project Name: PYGMY 27 - 1H
Project Number: 4-24-19

mg/kg

Project Location: COG - 176

Sampling Date: 07/24/2019

Sampling Type: Soil

Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 19 (H902545-03)

BTEX 8260B

BIEN GEGGE	9/	119	Analyzo	a 27: 1113					5 0 .
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.025	0.025	07/24/2019	ND	1.90	95.0	2.00	1.52	
Toluene*	<0.025	0.025	07/24/2019	ND	2.11	105	2.00	0.800	
Ethylbenzene*	<0.025	0.025	07/24/2019	ND	2.14	107	2.00	0.447	
Total Xylenes*	<0.075	0.075	07/24/2019	ND	6.86	114	6.00	1.54	
Total BTEX	<0.150	0.150	07/24/2019	ND					
Surrogate: Dibromofluoromethane	90.3	% 90.4-11	1						
Surrogate: Toluene-d8	106	% 85.3-11	4						
Surrogate: 4-Bromofluorobenzene	97.9	% 80.1-12	1						
Chloride, SM4500Cl-B	mg,	/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	07/25/2019	ND	416	104	400	3.92	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/24/2019	ND	187	93.3	200	2.77	
DRO >C10-C28*	<10.0	10.0	07/24/2019	ND	188	94.1	200	1.57	
EXT DRO >C28-C36	<10.0	10.0	07/24/2019	ND					
Surrogate: 1-Chlorooctane	77.0	% 41-142	?						
Surrogate: 1-Chlorooctadecane	81.3	% 37.6-14	7						

Analyzed By: ms

Cardinal Laboratories *=Accredited Analyte

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Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received: Reported: 07/24/2019

Project Name:

07/25/2019 PYGMY 27 - 1H 4-24-19

mg/kg

Project Number: Project Location:

BTEX 8260B

COG - 176

Sampling Date:

07/24/2019

Sampling Type:

Soil

Sampling Condition: Sample Received By: Cool & Intact

Tamara Oldaker

Sample ID: SP 20 (H902545-04)

DILX 0200D	ilig/	ilig/ kg		Allalyzed by. Ilis					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.025	0.025	07/24/2019	ND	1.90	95.0	2.00	1.52	
Toluene*	<0.025	0.025	07/24/2019	ND	2.11	105	2.00	0.800	
Ethylbenzene*	<0.025	0.025	07/24/2019	ND	2.14	107	2.00	0.447	
Total Xylenes*	<0.075	0.075	07/24/2019	ND	6.86	114	6.00	1.54	
Total BTEX	<0.150	0.150	07/24/2019	ND					
Surrogate: Dibromofluoromethane	91.6% 90.4-11		1						
Surrogate: Toluene-d8	104 % 85.3-11-		4						
Surrogate: 4-Bromofluorobenzene	92.3	% 80.1-12	1						
Chloride, SM4500CI-B	mg,	/kg	Analyze	ed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	288	16.0	07/25/2019	ND	416	104	400	3.92	
TPH 8015M	mg,	/kg	Analyze	Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/24/2019	ND	187	93.3	200	2.77	
DRO >C10-C28*	<10.0	10.0	07/24/2019	ND	188	94.1	200	1.57	
EXT DRO >C28-C36	<10.0	10.0	07/24/2019	ND					
Surrogate: 1-Chlorooctane	68.2	% 41-142	?						
Surrogate: 1-Chlorooctadecane	74.9	% 37.6-14	7						

Analyzed By: ms

Cardinal Laboratories

*=Accredited Analyte

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Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

07/24/2019

Sampling Date:

07/24/2019

Reported:

07/25/2019 PYGMY 27 - 1H

Sampling Type:

Soil

Project Name: Project Number:

PYGMY 27 - 1 4-24-19 Sampling Condition: Sample Received By: Cool & Intact
Tamara Oldaker

Project Location:

COG - 176

Sample ID: SP 21 (H902545-05)

BTEX 8260B	mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.025	0.025	07/24/2019	ND	1.90	95.0	2.00	1.52	
Toluene*	<0.025	0.025	07/24/2019	ND	2.11	105	2.00	0.800	
Ethylbenzene*	<0.025	0.025	07/24/2019	ND	2.14	107	2.00	0.447	
Total Xylenes*	<0.075	0.075	07/24/2019	ND	6.86	114	6.00	1.54	
Total BTEX	<0.150	0.150	07/24/2019	ND					
Surrogate: Dibromofluoromethane	91.4% 90.4-11		1						
Surrogate: Toluene-d8	103 % 85.3-11		4						
Surrogate: 4-Bromofluorobenzene	93.7	% 80.1-12	1						
Chloride, SM4500Cl-B	mg	/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	272	16.0	07/25/2019	ND	416	104	400	3.92	
TPH 8015M	mg,	/kg	Analyze	Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/25/2019	ND	194	97.1	200	4.87	
DRO >C10-C28*	<10.0	10.0	07/25/2019	ND	189	94.7	200	2.46	
EXT DRO >C28-C36	<10.0	10.0	07/25/2019	ND					
Surrogate: 1-Chlorooctane	68.5	% 41-142	?						
Surrogate: 1-Chlorooctadecane	70.9	% 37.6-14	7						

Cardinal Laboratories

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Celeg D. Kreene

Celey D. Keene, Lab Director/Quality Manager



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805

Hobbs NM, 88241 Fax To: (575) 397-0397

Received:

07/24/2019

Reported: Project Name: 07/25/2019 PYGMY 27 - 1H 4-24-19

Project Number: Project Location:

COG - 176

Sampling Date:

07/24/2019

Sampling Type:

Soil

Sampling Condition: Sample Received By: Cool & Intact

Tamara Oldaker

Sample ID: SP 22 (H902545-06)

BTEX 8260B	mg/kg		Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.025	0.025	07/24/2019	ND	1.90	95.0	2.00	1.52	
Toluene*	<0.025	0.025	07/24/2019	ND	2.11	105	2.00	0.800	
Ethylbenzene*	<0.025	0.025	07/24/2019	ND	2.14	107	2.00	0.447	
Total Xylenes*	<0.075	0.075	07/24/2019	ND	6.86	114	6.00	1.54	
Total BTEX	<0.150	0.150	07/24/2019	ND					
Surrogate: Dibromofluoromethane	90.5	% 90.4-11	1						
Surrogate: Toluene-d8	103 % 85.3-11-		4						
Surrogate: 4-Bromofluorobenzene	93.2	% 80.1-12	1						
Chloride, SM4500Cl-B	mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	304	16.0	07/25/2019	ND	416	104	400	3.92	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/25/2019	ND	194	97.1	200	4.87	
DRO >C10-C28*	<10.0	10.0	07/25/2019	ND	189	94.7	200	2.46	
EXT DRO >C28-C36	<10.0	10.0	07/25/2019	ND					
Surrogate: 1-Chlorooctane	65.3	% 41-142	•						
Surrogate: 1-Chlorooctadecane	67.9	% 37.6-14	7						

Cardinal Laboratories

*=Accredited Analyte

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Celeg D. Keine



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 07/24/2019

Reported: 07/25/2019 Project Name: PYGMY 27 - 1H Project Number: 4-24-19

Project Location: COG - 176 Sampling Date: 07/24/2019

Sampling Type: Soil

Sampling Condition: Cool & Intact Sample Received By: Tamara Oldaker

Sample ID: SP 23 (H902545-07)

BTEX 8260B	mg/kg		Analyze	Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.025	0.025	07/24/2019	ND	1.90	95.0	2.00	1.52	
Toluene*	<0.025	0.025	07/24/2019	ND	2.11	105	2.00	0.800	
Ethylbenzene*	<0.025	0.025	07/24/2019	ND	2.14	107	2.00	0.447	
Total Xylenes*	<0.075	0.075	07/24/2019	ND	6.86	114	6.00	1.54	
Total BTEX	<0.150	0.150	07/24/2019	ND					
Surrogate: Dibromofluoromethane	92.9 % 90.4-111		1						
Surrogate: Toluene-d8	104 % 85.3-114		4						
Surrogate: 4-Bromofluorobenzene	93.4	% 80.1-12	1						
Chloride, SM4500Cl-B	mg	/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	13600	16.0	07/25/2019	ND	416	104	400	3.92	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/25/2019	ND	194	97.1	200	4.87	
DRO >C10-C28*	<10.0	10.0	07/25/2019	ND	189	94.7	200	2.46	
EXT DRO >C28-C36	<10.0	10.0	07/25/2019	ND					
Surrogate: 1-Chlorooctane	73.1	% 41-142	?						
Surrogate: 1-Chlorooctadecane	74.9	% 37.6-14	7						

Cardinal Laboratories *=Accredited Analyte

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Celley D. Keine



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received: Reported: 07/24/2019

07/25/2019

Project Name: Project Number: PYGMY 27 - 1H 4-24-19

mg/kg

Project Location:

BTEX 8260B

COG - 176

Sampling Date:

07/24/2019

Sampling Type:

Soil

Sampling Condition: Sample Received By: Cool & Intact

Tamara Oldaker

Sample ID: SP 24 (H902545-08)

DIEX OZOOB	9/	119	Allaryzo	a by: iiis					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.025	0.025	07/24/2019	ND	1.90	95.0	2.00	1.52	
Toluene*	<0.025	0.025	07/24/2019	ND	2.11	105	2.00	0.800	
Ethylbenzene*	<0.025	0.025	07/24/2019	ND	2.14	107	2.00	0.447	
Total Xylenes*	<0.075	0.075	07/24/2019	ND	6.86	114	6.00	1.54	
Total BTEX	<0.150	0.150	07/24/2019	ND					
Surrogate: Dibromofluoromethane	92.0 % 90.4-11		'1						
Surrogate: Toluene-d8	104	% 85.3-11	4						
Surrogate: 4-Bromofluorobenzene	92.3	% 80.1-12	?1						
Chloride, SM4500CI-B	mg,	/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	07/25/2019	ND	416	104	400	3.92	
TPH 8015M	mg,	/kg	Analyze	ed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/25/2019	ND	194	97.1	200	4.87	
DRO >C10-C28*	<10.0	10.0	07/25/2019	ND	189	94.7	200	2.46	
EXT DRO >C28-C36	<10.0	10.0	07/25/2019	ND					
Surrogate: 1-Chlorooctane	66.9	% 41-142	2						
Surrogate: 1-Chlorooctadecane	73.5	% 37.6-14	17						

Analyzed By: ms

Cardinal Laboratories

*=Accredited Analyte

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Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

BTEX 8260B

07/24/2019

Reported: Project Name: 07/25/2019 PYGMY 27 - 1H

mg/kg

Project Number: Project Location:

4-24-19 COG - 176 Sampling Date:

07/24/2019

Sampling Type:

Soil

Sampling Condition: Sample Received By: Cool & Intact

Tamara Oldaker

Sample ID: SP 25 (H902545-09)

	<u> </u>			• •					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.025	0.025	07/24/2019	ND	1.90	95.0	2.00	1.52	
Toluene*	<0.025	0.025	07/24/2019	ND	2.11	105	2.00	0.800	
Ethylbenzene*	<0.025	0.025	07/24/2019	ND	2.14	107	2.00	0.447	
Total Xylenes*	<0.075	0.075	07/24/2019	ND	6.86	114	6.00	1.54	
Total BTEX	<0.150	0.150	07/24/2019	ND					
Surrogate: Dibromofluoromethane	93.1	93.1 % 90.4-111							
Surrogate: Toluene-d8	105	% 85.3-11	4						
Surrogate: 4-Bromofluorobenzene	93.3	% 80.1-12	1						
Chloride, SM4500CI-B	mg,	/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	400	16.0	07/25/2019	ND	416	104	400	3.92	
TPH 8015M	mg,	/kg	Analyze	Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/25/2019	ND	187	93.7	200	2.27	
DRO >C10-C28*	<10.0	10.0	07/25/2019	ND	176	87.9	200	3.10	
EXT DRO >C28-C36	<10.0	10.0	07/25/2019	ND					
Surrogate: 1-Chlorooctane	88.4	% 41-142	?						
Surrogate: 1-Chlorooctadecane	97.1	% 37.6-14	7						

Analyzed By: ms

Cardinal Laboratories

*=Accredited Analyte

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Celeg D. Kreene



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

Reported:

BTEX 8260B

07/24/2019

07/25/2019

mg/kg

Project Name: PYGMY 27 - 1H Project Number: 4-24-19

Project Location: COG - 176

Sampling Date: 07/24/2019

Sampling Type: Soil

Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 26 (H902545-10)

DILX 0200D	ilig	ilig/ kg		Analyzeu by. IIIs					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.025	0.025	07/24/2019	ND	1.90	95.0	2.00	1.52	
Toluene*	<0.025	0.025	07/24/2019	ND	2.11	105	2.00	0.800	
Ethylbenzene*	<0.025	0.025	07/24/2019	ND	2.14	107	2.00	0.447	
Total Xylenes*	<0.075	0.075	07/24/2019	ND	6.86	114	6.00	1.54	
Total BTEX	<0.150	0.150	07/24/2019	ND					
Surrogate: Dibromofluoromethane	92.9 % 90.4-11		1						
Surrogate: Toluene-d8	104 % 85.3-11		4						
Surrogate: 4-Bromofluorobenzene	90.9	% 80.1-12	1						
Chloride, SM4500CI-B	mg	/kg	Analyze	ed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	400	16.0	07/25/2019	ND	416	104	400	3.92	
TPH 8015M	mg	/kg	Analyze	Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/25/2019	ND	187	93.7	200	2.27	
DRO >C10-C28*	<10.0	10.0	07/25/2019	ND	176	87.9	200	3.10	
EXT DRO >C28-C36	<10.0	10.0	07/25/2019	ND					
Surrogate: 1-Chlorooctane	82.8	% 41-142	?						
Surrogate: 1-Chlorooctadecane	91.1	% 37.6-14	7						

Analyzed By: ms

Cardinal Laboratories *=Accredited Analyte

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Celeg D. Kreene



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received: Reported: 07/24/2019

07/25/2019

Project Name: Project Number:

PYGMY 27 - 1H 4-24-19

Project Location:

COG - 176

Sampling Date: 07/24/2019

Sampling Type: Soil

Sampling Condition: Cool & Intact Sample Received By:

Tamara Oldaker

Sample ID: SP 27 (H902545-11)

BTEX 8260B	mg/kg		Analyzed By: ms						S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.025	0.025	07/25/2019	ND	1.90	95.0	2.00	1.52	
Toluene*	<0.025	0.025	07/25/2019	ND	2.11	105	2.00	0.800	
Ethylbenzene*	<0.025	0.025	07/25/2019	ND	2.14	107	2.00	0.447	
Total Xylenes*	<0.075	0.075	07/25/2019	ND	6.86	114	6.00	1.54	
Total BTEX	<0.150	0.150	07/25/2019	ND					
Surrogate: Dibromofluoromethane	89.8 % 90.4-11		1						
Surrogate: Toluene-d8	101 % 85.3-11		4						
Surrogate: 4-Bromofluorobenzene	127	% 80.1-12	1						
Chloride, SM4500Cl-B	mg	/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	368	16.0	07/25/2019	ND	416	104	400	3.92	
TPH 8015M	mg,	/kg	Analyze	Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/25/2019	ND	187	93.7	200	2.27	
DRO >C10-C28*	<10.0	10.0	07/25/2019	ND	176	87.9	200	3.10	
EXT DRO >C28-C36	<10.0	10.0	07/25/2019	ND					
Surrogate: 1-Chlorooctane	67.2	% 41-142	?						
Surrogate: 1-Chlorooctadecane									

Cardinal Laboratories

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Celley D. Keine



Notes and Definitions

S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

** Samples not received at proper temperature of 6°C or below.

*** Insufficient time to reach temperature.

- Chloride by SM4500Cl-B does not require samples be received at or below 6°C

Samples reported on an as received basis (wet) unless otherwise noted on report

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Celego treene

1/2

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

ARDINAL LABORATORIES 101 East Marland, Hobbs, NM 88240 (505) 393-2326 EAX (505) 393-2476

Company Name: BBC International, Inc.	BILL TO	ANALYSIS REQUEST
Project Manager: Cliff Brunson	P.O. #:	
Address: P.O. Box 805	Company:	
City: Hobbs State: NM Zip: 88241	Attn:	
Phone #: 575-397-6388 Fax #: 575-397-0397	Address:	
Project #: Project Owner:	City:	
Project Name: Pygun 27-14 (4-29-19	State: Zip:	
Project Location: 176	State: Zip: Phone #:	
Sampler Name:	Fax #:	
FOR LAB USE ONLY MATRI		
Tap I.D. Samble I.D. # CONTAINERS GROUNDWATER WASTEWATER ASOIL OIL	SLUDGE OTHER: ACID/BASE: ACID/BAS	
	X 7.24 /030 XX	
2 Sp/8 SI X	7 110 ×	
3 50/9 0 0 1	7 /2/6	
3 6 21 CII A	7 /2012	
6 30 22 61	11/15-122	
7 50 23	130	
8 58 29 611	195	
9 58 28 (1) 2	4 157	
10 5/26 (1)	11/213 ×	
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Sampler - UPS - Bus - Other: Carrected 5.5 No	ct (Initials) Yes No	

[†] Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476

Received by OCD: 8/3/2020 8:45:30 AM

2/2

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

ARDINAL LABORATOR	RIES
101 East Marland, Hobbs, NI	VI 88240
(505) 393-2326 FAX (505) 39	3-2476

Company Name: BBC International, Inc.	BILL TO	ANALYSIS REQUEST
Project Manager: Cliff Brunson	P.O. #:	
Address: P.O. Box 805	Company:	
city: Hobbs State: NM zip: 88241	Attn:	
Phone #: 575-397-6388 Fax #: 575-397-0397	Address:	
Project Warne: Project Owner: Coly Project Name: Project N	City:	
Project Name: Pushs 27-14 (4-24-19)	State: Zip:	
Project Location: 176	Phone #:	
Sampler Name: 🗸 🗸	Fax #:	
FOR LAB USE ONLY MATRIX	PRESERV. SAMPLING	
Tab I.D. Sample I.D. (G)RAB OR (C)OMP (GROUNDWATER WASTEWATER OIL	ACID/BASE: ACID/BASE: OTHER: ACID/BASE: ACID/BASE:	
11 Sp 27 C1 X	x 724 234 xx T	
PLEASE NOTE: Liability and Damages Cardinal's liability and client's exclusive remedy for any claim arising whether based in contri	act or tort, shall be limited to the amount paid by the client for the	
PLEASE NOTE: Liability and Damages. Cardinals liability and clients exclusive remery in up draint arising winter based in colinia analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waved unless made in writing a service. In no event shall Cardinal be liable for incidental or consequental damages, including without limitation, business interruption.	and received by Cardinal within 30 days after completion of the applicable	
affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such dal	m is based upon any of the above stated reasons or otherwise. Phone Result: Yes No	Add'l Phone #:
Relinquished By: Relinquished By: Date: Time: Received By: Received By: Received By: Time:	Fax Result: Yes No	
Delivered By: (Circle One) 5.12 #97 Sample Cond Cool Intact Sampler - UPS - Bus - Other: Corrected 5.52 Pyes Pyes	(Initials)	

[†] Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476



July 31, 2019

Cliff Brunson

BBC International, Inc.

P.O. Box 805

Hobbs, NM 88241

RE: PYGMY 27 - 1H

Enclosed are the results of analyses for samples received by the laboratory on 07/26/19 10:55.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/ga/lab accred certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2

Haloacetic Acids (HAA-5)

Method EPA 524.2

Total Trihalomethanes (TTHM)

Method EPA 524.4

Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

Celeg D. Keens

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

07/26/2019

Sampling Date:

07/25/2019

Reported:

07/31/2019

Sampling Type:

Soil

Project Name: Project Number: PYGMY 27 - 1H 4-24-19

mg/kg

Sampling Condition: Sample Received By: Cool & Intact Tamara Oldaker

Project Location:

BTEX 8021B

EXT DRO >C28-C36

COG - 176

Sample ID: SP 12 (H902569-01)

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	< 0.050	0.050	07/29/2019	ND	1.98	99.2	2.00	1.56	
Toluene*	<0.050	0.050	07/29/2019	ND	2.07	104	2.00	0.363	
Ethylbenzene*	<0.050	0.050	07/29/2019	ND	1.98	98.9	2.00	0.632	
Total Xylenes*	<0.150	0.150	07/29/2019	ND	6.18	103	6.00	0.412	
Total BTEX	<0.300	0.300	07/29/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	105	% 73.3-12	9						
Chloride, SM4500Cl-B	mg,	'kg	Analyze	d By: AC					
Chloride, SM4500Cl-B Analyte	mg, Result	/kg Reporting Limit	Analyze Analyzed	d By: AC Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
·			-	-	BS 432	% Recovery	True Value QC	RPD 0.00	Qualifier QR-03
Analyte	Result	Reporting Limit	Analyzed 07/29/2019	Method Blank		,	·		-
Analyte Chloride	Result	Reporting Limit	Analyzed 07/29/2019	Method Blank		,	·		-
Analyte Chloride TPH 8015M	Result 112 mg/	Reporting Limit 16.0	Analyzed 07/29/2019 Analyze	Method Blank ND d By: MS	432	108	400	0.00	QR-03

ND

07/26/2019

Analyzed By: ms

Surrogate: 1-Chlorooctane 102 % 41-142 114 % 37.6-147 Surrogate: 1-Chlorooctadecane

<10.0

10.0

Cardinal Laboratories *=Accredited Analyte

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Celeg Ditreme

Celey D. Keene, Lab Director/Quality Manager



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

07/26/2019

Reported: Project Name: 07/31/2019 PYGMY 27 - 1H

Project Number: Project Location:

4-24-19 COG - 176 Sampling Date:

07/25/2019

Sampling Type:

Soil

Sampling Condition: Sample Received By: Cool & Intact

Tamara Oldaker

Sample ID: SP 13 (H902569-02)

BTEX 8021B	mg,	/kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/29/2019	ND	1.98	99.2	2.00	1.56	
Toluene*	<0.050	0.050	07/29/2019	ND	2.07	104	2.00	0.363	
Ethylbenzene*	<0.050	0.050	07/29/2019	ND	1.98	98.9	2.00	0.632	
Total Xylenes*	<0.150	0.150	07/29/2019	ND	6.18	103	6.00	0.412	
Total BTEX	<0.300	0.300	07/29/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	103	% 73.3-12	9						
Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	160	16.0	07/29/2019	ND	432	108	400	0.00	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/26/2019	ND	193	96.7	200	9.45	
DRO >C10-C28*	<10.0	10.0	07/26/2019	ND	197	98.5	200	12.1	
EXT DRO >C28-C36	<10.0	10.0	07/26/2019	ND					
Surrogate: 1-Chlorooctane	98.9	% 41-142	•						
Surrogate: 1-Chlorooctadecane	111 9	% 37.6-14	7						

Cardinal Laboratories

*=Accredited Analyte

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Celeg & treene

Celey D. Keene, Lab Director/Quality Manager



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

07/26/2019

Reported: Project Name: 07/31/2019 PYGMY 27 - 1H

Project Number: Project Location:

4-24-19 COG - 176 Sampling Date:

07/25/2019

Sampling Type:

Soil

Sampling Condition: Sample Received By: Cool & Intact Tamara Oldaker

Sample ID: SP 15 (H902569-03)

BTEX 8021B	mg/	'kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/30/2019	ND	2.03	102	2.00	3.03	
Toluene*	<0.050	0.050	07/30/2019	ND	2.08	104	2.00	2.58	
Ethylbenzene*	<0.050	0.050	07/30/2019	ND	1.99	99.6	2.00	3.38	
Total Xylenes*	<0.150	0.150	07/30/2019	ND	5.99	99.9	6.00	3.17	
Total BTEX	<0.300	0.300	07/30/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID	106 %	73.3-129

Chloride, SM4500CI-B	mg,	/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	07/29/2019	ND	432	108	400	0.00	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/26/2019	ND	193	96.7	200	9.45	
DRO >C10-C28*	<10.0	10.0	07/26/2019	ND	197	98.5	200	12.1	
EXT DRO >C28-C36	<10.0	10.0	07/26/2019	ND					
-									

Surrogate: 1-Chlorooctane 98.1 % 41-142
Surrogate: 1-Chlorooctadecane 107 % 37.6-147

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Celego treene



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

RTFY 8021R

07/26/2019

Reported: Project Name: 07/31/2019 PYGMY 27 - 1H

ma/ka

Project Number: Project Location: 4-24-19

COG - 176

Sampling Date:

07/25/2019

Sampling Type:

Soil

Sampling Condition: Sample Received By: Cool & Intact

Tamara Oldaker

Sample ID: SP 16 (H902569-04)

BIEX 8021B	mg	/ kg	Anaiyze	a By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/30/2019	ND	2.03	102	2.00	3.03	
Toluene*	<0.050	0.050	07/30/2019	ND	2.08	104	2.00	2.58	
Ethylbenzene*	<0.050	0.050	07/30/2019	ND	1.99	99.6	2.00	3.38	
Total Xylenes*	<0.150	0.150	07/30/2019	ND	5.99	99.9	6.00	3.17	
Total BTEX	<0.300	0.300	07/30/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	106	% 73.3-12	9						
Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	160	16.0	07/29/2019	ND	432	108	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/26/2019	ND	193	96.7	200	9.45	
DRO >C10-C28*	<10.0	10.0	07/26/2019	ND	197	98.5	200	12.1	
EXT DRO >C28-C36	<10.0	10.0	07/26/2019	ND					
Surrogate: 1-Chlorooctane	92.4	% 41-142	ı						
Surrogate: 1-Chlorooctadecane	107	% 37.6-14	7						

Analyzed By: me

Cardinal Laboratories

*=Accredited Analyte

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Celley D. Keine



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

RTFY 8021R

07/26/2019

Reported: Project Name: 07/31/2019 PYGMY 27 - 1H

ma/ka

Project Number: Project Location:

4-24-19 COG - 176 Sampling Date:

07/25/2019

Sampling Type:

Soil

Sampling Condition: Sample Received By: Cool & Intact

Tamara Oldaker

Sample ID: SP 28 (H902569-05)

BIEX 8021B	mg/	кд	Anaiyze	a By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/30/2019	ND	2.03	102	2.00	3.03	
Toluene*	< 0.050	0.050	07/30/2019	ND	2.08	104	2.00	2.58	
Ethylbenzene*	<0.050	0.050	07/30/2019	ND	1.99	99.6	2.00	3.38	
Total Xylenes*	<0.150	0.150	07/30/2019	ND	5.99	99.9	6.00	3.17	
Total BTEX	<0.300	0.300	07/30/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	106 %	6 73.3-12	9						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	07/29/2019	ND	432	108	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/26/2019	ND	193	96.7	200	9.45	
DRO >C10-C28*	<10.0	10.0	07/26/2019	ND	197	98.5	200	12.1	
EXT DRO >C28-C36	<10.0	10.0	07/26/2019	ND					
Surrogate: 1-Chlorooctane	100 %	6 41-142							
Surrogate: 1-Chlorooctadecane	116 %	6 37.6-14	7						

Analyzed By: me

Cardinal Laboratories

*=Accredited Analyte

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Celeg Theene

S-04



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Notes and Definitions

QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.

Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.

Cardinal Laboratories *=Accredited Analyte

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Celego treene

Received by OCD: 8/3/2020 8:45:30 AM

Page 8 of 8

ARDINAL LABORATORIES

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240 (505) 393-2326 FAX (505) 393-2476

Company Name: BBC International, Inc.	BILL TO	ANALYSIS REQUEST
Project Manager: Cliff Brunson	P.O. #:	
Address: P.O. Box 805	Company:	
City: Hobbs State: NM Zip: 88241	Attn:	
Phone #: 575-397-6388 Fax #: 575-397-0397	Address:	
Project #: Project Owner: COC-	City:	
Project #: Project Owner: COC- Project Name: Project Name: Project Owner: COC-	State: Zip:	
Project Location: / 7/6	Phone #:	
Sampler Name:	Fax #:	
FOR LAB USE ONLY MATRI	3/11/2	
Tab I.D. Sample I.D. A S S S S S S S S S S S S S S S S S S	725 1255 1 111 1 137 1 155 2 19	
PLEASE NOTE: Luability and Damages Cardinal's liability and client's exclusive remedy for any claim arising whether based in canalyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in with service. In no event shall Cardinal be liable for incidental or consequental damages, including without limitation, business interrugafful at the performance of services hereunder by Cardinal regardless of whether such Relinquished By: Date:	ng and received by Cardinal within 30 days after completion of the applicable tions, loss of use, or loss of profits incurred by client, its subsidiaries, claim is based upon any of the above stated reasons or otherwise. Phone Result: Yes No Fax Result: Yes No REMARKS:	



July 31, 2019

Cliff Brunson

BBC International, Inc.

P.O. Box 805

Hobbs, NM 88241

RE: PYGMY 27 - 1H

Enclosed are the results of analyses for samples received by the laboratory on 07/30/19 8:40.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/ga/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2

Haloacetic Acids (HAA-5)

Method EPA 524.2

Total Trihalomethanes (TTHM)

Method EPA 524.4

Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

Celeg D. Keens

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 07/30/2019 Reported: 07/31/2019

Project Name: PYGMY 27 - 1H Project Number: 4-24-19

Project Location: COG - 176

Sampling Date: 07/29/2019

Sampling Type: Soil

Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 30 (H902591-01)

BTEX 8021B	mg/	kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/30/2019	ND	1.99	99.5	2.00	3.57	
Toluene*	< 0.050	0.050	07/30/2019	ND	2.06	103	2.00	1.91	
Ethylbenzene*	<0.050	0.050	07/30/2019	ND	1.97	98.4	2.00	1.50	
Total Xylenes*	<0.150	0.150	07/30/2019	ND	5.93	98.8	6.00	1.41	
Total BTEX	<0.300	0.300	07/30/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	106 %	6 73.3-12	9						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	07/30/2019	ND	432	108	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/30/2019	ND	206	103	200	2.76	
DRO >C10-C28*	<10.0	10.0	07/30/2019	ND	228	114	200	12.5	
EXT DRO >C28-C36	<10.0	10.0	07/30/2019	ND					
Surrogate: 1-Chlorooctane	115 %	6 41-142	•						
Surrogate: 1-Chlorooctadecane	122 %	6 37.6-14	7						

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Celey D. Keine



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

07/30/2019

Reported: Project Name: 07/31/2019 PYGMY 27 - 1H

Project Number:

4-24-19

Project Location:

COG - 176

Sampling Date:

07/29/2019

Sampling Type:

Soil

Sampling Condition: Sample Received By: Cool & Intact

Tamara Oldaker

Sample ID: SP 31 (H902591-02)

BTEX 8021B	mg/	kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/30/2019	ND	1.99	99.5	2.00	3.57	
Toluene*	<0.050	0.050	07/30/2019	ND	2.06	103	2.00	1.91	
Ethylbenzene*	<0.050	0.050	07/30/2019	ND	1.97	98.4	2.00	1.50	
Total Xylenes*	<0.150	0.150	07/30/2019	ND	5.93	98.8	6.00	1.41	
Total BTEX	<0.300	0.300	07/30/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	104 %	6 73.3-12	9						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	07/30/2019	ND	432	108	400	3.77	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/30/2019	ND	206	103	200	2.76	
DRO >C10-C28*	<10.0	10.0	07/30/2019	ND	228	114	200	12.5	
EXT DRO >C28-C36	<10.0	10.0	07/30/2019	ND					
Surrogate: 1-Chlorooctane	107 9	6 41-142							
Surrogate: 1-Chlorooctadecane	112 %	6 37.6-14	7						

Cardinal Laboratories

*=Accredited Analyte

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Celley D. Keine



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

07/30/2019

Reported: Project Name: 07/31/2019 PYGMY 27 - 1H 4-24-19

Project Number: Project Location:

COG - 176

Sampling Date:

07/29/2019

Sampling Type:

Soil

Sampling Condition: Sample Received By: Cool & Intact
Tamara Oldaker

Sample ID: SP 32 (H902591-03)

BTEX 8021B	mg/	kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/30/2019	ND	1.99	99.5	2.00	3.57	
Toluene*	<0.050	0.050	07/30/2019	ND	2.06	103	2.00	1.91	
Ethylbenzene*	<0.050	0.050	07/30/2019	ND	1.97	98.4	2.00	1.50	
Total Xylenes*	<0.150	0.150	07/30/2019	ND	5.93	98.8	6.00	1.41	
Total BTEX	<0.300	0.300	07/30/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	106 9	% 73.3-129)						
Chloride, SM4500CI-B	mg/	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier

Chloride, 31-14-300Cl-B	1119/	, kg	Allalyze	u by. AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	07/30/2019	ND	432	108	400	3.77	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/30/2019	ND	206	103	200	2.76	
DRO >C10-C28*	<10.0	10.0	07/30/2019	ND	228	114	200	12.5	
EXT DRO >C28-C36	<10.0	10.0	07/30/2019	ND					

Surrogate: 1-Chlorooctane

95.8 %

41-142

Surrogate: 1-Chlorooctadecane

101 %

37.6-147

Cardinal Laboratories *=Accredited Analyte

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Celego treene

Celey D. Keene, Lab Director/Quality Manager



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

07/30/2019

Reported: Project Name: 07/31/2019 PYGMY 27 - 1H

Project Number:

4-24-19

Project Location:

COG - 176

Sampling Date:

07/29/2019

Sampling Type:

Soil

Sampling Condition: Sample Received By: Cool & Intact

Tamara Oldaker

Sample ID: SP 33 (H902591-04)

BTEX 8021B	mg,	/kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/30/2019	ND	1.99	99.5	2.00	3.57	
Toluene*	<0.050	0.050	07/30/2019	ND	2.06	103	2.00	1.91	
Ethylbenzene*	<0.050	0.050	07/30/2019	ND	1.97	98.4	2.00	1.50	
Total Xylenes*	<0.150	0.150	07/30/2019	ND	5.93	98.8	6.00	1.41	
Total BTEX	<0.300	0.300	07/30/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	103	% 73.3-12	9						
Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	07/30/2019	ND	432	108	400	3.77	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/30/2019	ND	206	103	200	2.76	
DRO >C10-C28*	<10.0	10.0	07/30/2019	ND	228	114	200	12.5	
EXT DRO >C28-C36	<10.0	10.0	07/30/2019	ND					
Surrogate: 1-Chlorooctane	99.5	% 41-142	?						
Surrogate: 1-Chlorooctadecane	105	% 37.6-14	7						

Cardinal Laboratories *=Accredited Analyte

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Celley D. Keine

Celey D. Keene, Lab Director/Quality Manager



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

RTFY 8021R

07/30/2019

Reported: Project Name: 07/31/2019 PYGMY 27 - 1H

ma/ka

Project Number: Project Location:

4-24-19 COG - 176 Sampling Date:

07/29/2019

Sampling Type:

Soil

Sampling Condition: Sample Received By: Cool & Intact

Tamara Oldaker

Sample ID: SP 34 (H902591-05)

BIEX 8021B	mg/	kg	Anaiyze	a By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/30/2019	ND	1.99	99.5	2.00	3.57	
Toluene*	<0.050	0.050	07/30/2019	ND	2.06	103	2.00	1.91	
Ethylbenzene*	<0.050	0.050	07/30/2019	ND	1.97	98.4	2.00	1.50	
Total Xylenes*	<0.150	0.150	07/30/2019	ND	5.93	98.8	6.00	1.41	
Total BTEX	<0.300	0.300	07/30/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	103 %	6 73.3-12	9						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	07/30/2019	ND	432	108	400	3.77	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/30/2019	ND	206	103	200	2.76	
DRO >C10-C28*	<10.0	10.0	07/30/2019	ND	228	114	200	12.5	
EXT DRO >C28-C36	<10.0	10.0	07/30/2019	ND					
Surrogate: 1-Chlorooctane	96.9 %	6 41-142							
Surrogate: 1-Chlorooctadecane	99.8 %	6 37.6-14	7						

Analyzed By: me

Cardinal Laboratories

*=Accredited Analyte

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Celeg D. Freene



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

RTFY 8021R

07/30/2019

Sampling Date:

07/29/2019

Reported:

07/31/2019

Sampling Type:

Soil

Project Name: Project Number: PYGMY 27 - 1H 4-24-19

ma/ka

Sampling Condition: Sample Received By: Cool & Intact
Tamara Oldaker

Project Location:

COG - 176

Sample ID: SP 35 (H902591-06)

ult 050 050	Reporting Limit 0.050	Analyzed 07/30/2019	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
	0.050	07/30/2019						Quamici
050		,00,2010	ND	1.99	99.5	2.00	3.57	
	0.050	07/30/2019	ND	2.06	103	2.00	1.91	
050	0.050	07/30/2019	ND	1.97	98.4	2.00	1.50	
150	0.150	07/30/2019	ND	5.93	98.8	6.00	1.41	
300	0.300	07/30/2019	ND					
105 %	73.3-129	9						
mg/k	g	Analyze	d By: AC					
ult	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
.0	16.0	07/30/2019	ND	432	108	400	3.77	
mg/k	g	Analyze	d By: MS					
ult	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
0.0	10.0	07/30/2019	ND	206	103	200	2.76	
0.0	10.0	07/30/2019	ND	228	114	200	12.5	
0.0	10.0	07/30/2019	ND					
94.9 %	41-142							
1010/	27 6 14	7						
	ult).0).0).0).0	0.0 10.0 0.0 10.0 0.0 10.0 94.9 % 41-142	ult Reporting Limit Analyzed 0.0 10.0 07/30/2019 0.0 10.0 07/30/2019 0.0 10.0 07/30/2019 94.9 % 41-142	ult Reporting Limit Analyzed Method Blank 0.0 10.0 07/30/2019 ND 0.0 10.0 07/30/2019 ND 0.0 10.0 07/30/2019 ND 94.9 % 41-142	ult Reporting Limit Analyzed Method Blank BS 0.0 10.0 07/30/2019 ND 206 0.0 10.0 07/30/2019 ND 228 0.0 10.0 07/30/2019 ND	ult Reporting Limit Analyzed Method Blank BS % Recovery 0.0 10.0 07/30/2019 ND 206 103 0.0 10.0 07/30/2019 ND 228 114 0.0 10.0 07/30/2019 ND 94.9 % 41-142	ult Reporting Limit Analyzed Method Blank BS % Recovery True Value QC 0.0 10.0 07/30/2019 ND 206 103 200 0.0 10.0 07/30/2019 ND 228 114 200 0.0 10.0 07/30/2019 ND 94.9 % 41-142	ult Reporting Limit Analyzed Method Blank BS % Recovery True Value QC RPD 0.0 10.0 07/30/2019 ND 206 103 200 2.76 0.0 10.0 07/30/2019 ND 228 114 200 12.5 0.0 10.0 07/30/2019 ND 94.9 % 41-142

Analyzed By: me

Cardinal Laboratories

*=Accredited Analyte

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Celeg D. Freene



Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

** Samples not received at proper temperature of 6°C or below.

*** Insufficient time to reach temperature.

- Chloride by SM4500Cl-B does not require samples be received at or below 6°C

Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories *=Accredited Analyte

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Celegy Theene

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RDINAL LABORATORIES

101 East Marland, Hobbs, NM 88240 (505) 393-2326 FAX (505) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

	BBC International, Inc.				BII	L TO		1		ANA	AL YSIS	REQU	FST	
Project Manager	: Cliff Brunson			P.O. #:							1	REGO		
Address: P.O.	Box 805			Compa	ny:			V					(8)	
city: Hobbs	State: NM	Zip: 882	241	Attn:				10						
Phone #: 575-3	And the state of t	-397-0397	7	Addres	ss:			20						
Project #:	Project Owne	r: Cn	C	City:				1						
Project Name:	Pygny 27-1H	4.24.	19	State:		Zip:		1/2	X				1 1	
Project Location	11 1122		1	Phone				Ų	61				1 1	
Sampler Name:	Va			Fax #:				11,	13 9					
FOR LAB USE ONLY			MATRIX		SERV.	SAMPL	ING	1	11					
Lab I.D. H902591 1 2 3 4 5	Sample I.D. \$\begin{align*} \frac{3}{3} \\ 3	C 1 C 1 C 1 C 1	× × × × × × × × × × × × × × × × × × ×		V ICE / COOL	DATE 7:29	TIME 105 135 158 219 239 308	A XXXX						
service in no event shall Car	7-29-19 Time: 7-3079 Time: 7-3079 Time: 7-40 (Circle One) - 8.9c	gemed waived unling growthout limitation, is cardinal, regardless Received Q en Received	less made in writing an business interruptions, of whether such claim By:	d received by in loss of use, on is based upon	Cardinal wi loss of pro any of the	thin 30 days aftiting fits incurred by above stated re	crompletion of the completion of the completion of the complete co	ne applicable iries, se sult: t: S:	□ Yes □	No Add	I Phone #	:		

Certificate of Analysis Summary 663401

COG Operating LLC, Artesia, NM

Project Name: Pygmy 27 St. 1

Project Id: Contact:

Project Location:

Sheldon Hitchcock

Date Received in Lab: Wed 06.03.2020 16:10

Report Date: 06.04.2020 12:34

Project Manager: Jessica Kramer

	Lab Id:	663401-001			
Analysis Paguested	Field Id:	SP-9			
Analysis Requested	Depth:				
	Matrix:	SOIL			
	Sampled:	06.03.2020 12:20			
Chloride by EPA 300	Extracted:	06.03.2020 17:07			
	Analyzed:	06.03.2020 20:00			
	Units/RL:	mg/kg RL			
Chloride		413 9.94			

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 - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Jessica Kramer

Jessica Kramer Project Manager



Analytical Report 663401

for

COG Operating LLC

Project Manager: Sheldon Hitchcock

Pygmy 27 St. 1

06.04.2020

Collected By: Client

1089 N Canal Street Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-20-32), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054) Oklahoma (2019-058), North Carolina (681), Arkansas (20-035-0)

> Xenco-Dallas (EPA Lab Code: TX01468): Texas (TX104704295-19-23), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-17)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-22)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-7)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



06.04.2020

Project Manager: Sheldon Hitchcock

COG Operating LLC 2407 Pecos Avenue Artesia, NM 88210

Reference: XENCO Report No(s): 663401

Pygmy 27 St. 1 Project Address:

Sheldon Hitchcock:

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) 663401. 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. 663401 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,

Jessica Kramer

Project Manager

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico



Sample Cross Reference 663401

COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample IdMatrixDate CollectedSample DepthLab Sample IdSP-9S06.03.2020 12:20663401-001

CASE NARRATIVE

Client Name: COG Operating LLC

Project Name: Pygmy 27 St. 1

Project ID: Report Date: 06.04.2020 Work Order Number(s): 663401 Date Received: 06.03.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 663401

COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id: SP-9

Soil

06.03.2020 17:07

Date Received:06.03.2020 16:10

Lab Sample Id: 663401-001

Date Collected: 06.03.2020 12:20

Prep Method: E300P

% Moisture:

Tech:

MAB

Analytical Method: Chloride by EPA 300

Analyst: MAB

Date Prep:

Basis:

Wet Weight

Seq Number: 3127912

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	413	9.94	mg/kg	06.03.2020 20:00		1

Matrix:



Flagging Criteria

- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- RPD exceeded lab control limits.
- The target analyte was positively identified below the quantitation limit and above the detection limit.
- Analyte was not detected.
- 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.

ND Not Detected.

RLReporting 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

DLMethod Detection Limit

NC Non-Calculable

SMP Client Sample

BLK

Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample

BKSD/LCSD Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD

Method Duplicate/Sample Duplicate

MS

Matrix Spike

MSD: Matrix Spike Duplicate

- + NELAC certification not offered for this compound.
- * (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

QC Summary 663401



COG Operating LLC

Pygmy 27 St. 1

Analytical Method: Chloride by EPA 300

3127912 Seq Number:

7704705-1-BLK

Matrix: Solid

Prep Method:

E300P

Date Prep: 06.03.2020

LCSD Sample Id: 7704705-1-BSD

Parameter

MB Sample Id:

MB

LCS Sample Id: 7704705-1-BKS

LCS

101

%Rec

%RPD RPD Units Limit

20

Analysis Flag Date

Chloride

Result <10.0

LCS Result 252 LCSD Result 252

LCSD %Rec 90-110 101

Limits

0

mg/kg

06.03.2020 16:09

Analytical Method: Chloride by EPA 300

3127912 663293-001 Matrix: Soil

MS Sample Id: 663293-001 S

MSD

Result

802

Prep Method: Date Prep:

E300P

06.03.2020 MSD Sample Id: 663293-001 SD

mg/kg

Parameter

Seq Number:

Seq Number:

Parent Sample Id:

Parent Result

Spike MS Amount Result 802 202

Spike

250

Amount

MS %Rec 83

MSD %Rec

MSD

83

Limits 90-110 %RPD RPD Limit 20

0

Units

Analysis Flag Date 06.03.2020 16:44

X

Chloride

3127912

Analytical Method: Chloride by EPA 300

Matrix: Soil

663365-003 S

E300P Prep Method:

06.03.2020 Date Prep:

MSD Sample Id: 663365-003 SD

Parameter

Parent Sample Id:

663365-003 **Parent**

Spike

MS MS %Rec 92

MS Sample Id:

MSD Result %Rec 570

Limits 90-110

Limit

%RPD

RPD

Units

Analysis Flag Date

Chloride

Result Amount 385 200

634

Result 568

93

0 20 mg/kg

06.03.2020 18:36

Page 137 of 330

LABORATORIES

Chain of Custody

Work Order No:

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334 Midland,TX (432) 704-5440 EL Paso,TX (915) 585-3443 Lubbock,TX (806) 794-1296 Crasibad, NM (432) 704-5440 roenik,AZ (480) 355-0900 Atlanta,GA (770) 449-8800 Tampa,FL (813) 620-2000 West Palm Beach, FL (561) 689-670

		2	01291 02/20	(Secure of Configuration of Configuratio	Vecelved	Mr. Per
Dato/Time	ont	co: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subconfractors. It assigns standard terms and conditions ervice. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control enco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.	ompany to Xenco, its affiliates and or expenses incurred by the clied to Xenco, but not analyzed. The	a valid purchase order from client come any responsibility for any losses urge of \$5 for each sample submitte	ent of samples constitutes samples and shall not assured to each project and a characteristics.	Signature of this document and relinquishn vice. Xenco will be liable only for the cost of nco. A minimum charge of \$75.00 will be apple.
Na Sr TI Sn U V Zn 1631 / 245.1 / 7470 / 7471 : Hg	Se Ag SiO2 Na	Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni K Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U		8RCRA 13PPM Texas 11 TCLP / SPLP 6010: 8RCRA 5		Total 200.7 / 6010 200.8 / 6020: Circle Method(s) and Metal(s) to be analyzed
			X	12/20 N/A	5 4/3/20	9-9
Sample Comments				Time Depth	Matrix Sampled	Sample Identification
TAT starts the day received by the lab, if received by 4:00pm				Correction Factor: -0-2 Total Containers:	N/A Correc	Cooler Custody Seals: Yes No
NaOH: Na Zn Acetate+ NaOH: Zn			d Ty	Thermometer ID	S-8 No	Temperature (°C): 3.8 Received Intact: (Yes)
HC1 · HI			,		Sin Sin	
HNO3: HN				Due Date: 6/4		Sampler's Name:
None: NO				Rush: 24		Project Location
меон: ме			Pres. Code		Í	
Preservative Codes	T	ANALYSIS REQUEST		Turn Around	27 5+ 1	Project Name: PYALAY
ADaPT Other:	Deliverables: EDD	De		Email:		Phone:
ST/UST UTRRP U Level IV	Level III	Re	ZIP:	City, State ZIP:		City, State ZIP:
	State of Project:		ess:	Address:		Address:
Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐	ogram: UST/PST PRP Brov	Pr	ame:		٠	Company Name: (06
Work Order Comments	Work Order		erent)	Bill to: (if different)	#1+0x 00c	Project Manager: July

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: COG Operating LLC

Work Order #: 663401

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

Date/ Time Received: 06.03.2020 04.10.00 PM

Temperature Measuring device used: T-NM-007

	Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?			
#2 *Shipping container in good condition?		Yes	
#3 *Samples received on ice?		Yes	
#4 *Custody Seals intact on shipping conta	ainer/ cooler?	Yes	
#5 Custody Seals intact on sample bottles	?	Yes	
#6*Custody Seals Signed and dated?		Yes	
#7 *Chain of Custody present?		Yes	
#8 Any missing/extra samples?		No	
#9 Chain of Custody signed when relinquis	shed/ 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	Samples received in bulk containers.
#13 Samples properly preserved?		Yes	
#14 Sample container(s) intact?		Yes	
#15 Sufficient sample amount for indicated	I test(s)?	Yes	
#16 All samples received within hold time?		Yes	
#17 Subcontract of sample(s)?		No	

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

Analyst:

PH Device/Lot#:

Checklist completed by: Elizabeth McClellan

#18 Water VOC samples have zero headspace?

Date: 06.03.2020

N/A

Checklist reviewed by: Jessica Warner

Date: 06.04.2020



Certificate of Analysis Summary 663402

COG Operating LLC, Artesia, NM

Project Name: Pygmy 27 St 1

Project Id: Contact:

Project Location:

Sheldon Hitchcock

Date Received in Lab: Wed 06.03.2020 16:10

Report Date: 06.04.2020 13:40

Project Manager: Jessica Kramer

	Lab Id:	663402-0	001	663402-002		663402-003		663402-004		663402-005		663402-006	
Analysis Requested Fie		B-1		B-2		B-3		B-4		B-5		B-6	
mulysis Requesieu	Depth:	4- ft		4- ft		4- ft		4- ft		4- ft		4- ft	
	Matrix:	SOIL		SOIL		SOIL SOIL		,	SOIL		SOIL		
	Sampled:	06.03.2020	12:00	06.03.2020 12:02 06.03.2020 12:04		12:04	06.03.2020 12:06		06.03.2020 12:08		06.03.2020 12:10		
BTEX by EPA 8021B	Extracted:	06.03.2020	17:25	06.03.2020 17:25		06.03.2020	17:25	:25 06.03.2020 17:25		06.03.2020 17:25		06.03.2020 17:25	
	Analyzed:	06.04.2020	03:06	06.04.2020 03:26		03:46	06.04.2020 04:07		06.04.2020 04:27		06.04.2020 04:48		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		< 0.00199	0.00199	< 0.00198	0.00198	< 0.00198	0.00198	< 0.00200	0.00200	< 0.00199	0.00199	< 0.00200	0.00200
Toluene		< 0.00199	0.00199	< 0.00198	0.00198	< 0.00198	0.00198	< 0.00200	0.00200	< 0.00199	0.00199	< 0.00200	0.00200
Ethylbenzene		< 0.00199	0.00199	< 0.00198	0.00198	< 0.00198	0.00198	< 0.00200	0.00200	< 0.00199	0.00199	< 0.00200	0.00200
m,p-Xylenes	n,p-Xylenes <0.0039		0.00398	< 0.00395	0.00395	< 0.00396	0.00396	< 0.00399	0.00399	< 0.00398	0.00398	< 0.00401	0.00401
o-Xylene	o-Xylene <		0.00199	< 0.00198	0.00198	< 0.00198	0.00198	< 0.00200	0.00200	< 0.00199	0.00199	< 0.00200	0.00200
Total Xylenes		< 0.00199	0.00199	< 0.00198	0.00198	< 0.00198	0.00198	< 0.00200	0.00200	< 0.00199	0.00199	< 0.00200	0.00200
Total BTEX		< 0.00199	0.00199	< 0.00198	0.00198	< 0.00198	0.00198	< 0.00200	0.00200	< 0.00199	0.00199	< 0.00200	0.00200
Chloride by EPA 300	Extracted:	06.03.2020	17:30	06.03.2020 17:30		06.03.2020	17:30	06.03.2020	17:30	06.03.2020 17:30		06.03.2020 17:30	
	Analyzed:	06.03.2020 20:42		06.03.2020 21:03		06.03.2020 21:10		06.03.2020 21:24		06.03.2020 21:45			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		371	10.0	380	10.0	381	10.1	204	10.0	186	10.0	234	10.0
TPH By SW8015 Mod	Extracted:	: 06.03.2020 17:00		06.03.2020 17:00		06.03.2020	17:00	06.03.2020 17:00		06.03.2020 17:00		06.03.2020 17:00	
	Analyzed:	: 06.03.2020 22:16		06.03.2020 22:36		06.03.2020 23:18		06.03.2020 23:39		06.03.2020 23:59		06.04.2020 00:20	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons		< 50.0	50.0	<49.9	49.9	<49.9	49.9	< 50.1	50.1	< 50.0	50.0	<49.8	49.8
Diesel Range Organics		< 50.0	50.0	<49.9	49.9	<49.9	49.9	< 50.1	50.1	< 50.0	50.0	<49.8	49.8
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0		<49.9	49.9	<49.9	49.9	< 50.1	50.1	< 50.0	50.0	<49.8	49.8
Total TPH		< 50.0	50.0	<49.9	49.9	<49.9	49.9	< 50.1	50.1	< 50.0	50.0	<49.8	49.8

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 - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Jessica Kramer

Jessica Kramer Project Manager



Certificate of Analysis Summary 663402

COG Operating LLC, Artesia, NM

Project Name: Pygmy 27 St 1

Project Id: Contact:

Project Location:

Sheldon Hitchcock

Date Received in Lab: Wed 06.03.2020 16:10

Report Date: 06.04.2020 13:40

Project Manager: Jessica Kramer

	Lab Id:	663402-0	07	663402-0	08	663402-0	009	663402-	010		
Analysis Pagyastad	Field Id:	B-7		B-8		B-9		B-10			
Analysis Requested	Depth:	4- ft		4- ft		4- ft		4- ft			
	Matrix:	SOIL	SOIL		SOIL		SOIL				
	Sampled:	06.03.2020	12:12	06.03.2020	12:14	06.03.2020	12:16	06.03.2020	12:18		
BTEX by EPA 8021B	Extracted:	06.03.2020 17:25		06.03.2020 17:25		06.03.2020	17:25	06.03.2020 17:25			
	Analyzed:	06.04.2020 05:08		06.04.2020 05:28		06.04.2020	05:49	06.04.2020 06:09			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Benzene		< 0.00200	0.00200	< 0.00198	0.00198	< 0.00201	0.00201	< 0.00200	0.00200		
Toluene		< 0.00200	0.00200	< 0.00198	0.00198	< 0.00201	0.00201	< 0.00200	0.00200		
Ethylbenzene		< 0.00200	0.00200	< 0.00198	0.00198	< 0.00201	0.00201	< 0.00200	0.00200		
m,p-Xylenes		< 0.00399	0.00399	< 0.00396	0.00396	< 0.00402	0.00402	< 0.00401	0.00401		
o-Xylene		< 0.00200	0.00200	< 0.00198	0.00198	< 0.00201	0.00201	< 0.00200	0.00200		
Total Xylenes		< 0.00200	0.00200	< 0.00198	0.00198	< 0.00201	0.00201	< 0.00200	0.00200		
Total BTEX		< 0.00200	0.00200	< 0.00198	0.00198	< 0.00201	0.00201	< 0.00200	0.00200		
Chloride by EPA 300	Extracted:	06.03.2020	17:30	06.03.2020	17:30	06.03.2020	17:30	06.03.2020	17:30		
	Analyzed:	06.03.2020	21:52	06.03.2020	21:59	06.03.2020	22:06	06.03.2020	22:13		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Chloride		223	10.1	200	9.92	231	10.0	246	10.0		
TPH By SW8015 Mod	Extracted:	06.03.2020	17:00	06.03.2020	17:00	06.03.2020	17:00	06.03.2020	17:00		
	Analyzed:	06.04.2020 00:40		06.03.2020 23:39		06.03.2020 23:59		06.04.2020 00:20			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Gasoline Range Hydrocarbons		<50.3	50.3	<49.9	49.9	<49.9	49.9	< 50.0	50.0		
Diesel Range Organics		<50.3	50.3	<49.9	49.9	<49.9	49.9	< 50.0	50.0		
Motor Oil Range Hydrocarbons (MRO)		< 50.3	50.3	<49.9	49.9	<49.9	49.9	< 50.0	50.0		
Total TPH		< 50.3	50.3	<49.9	49.9	<49.9	49.9	< 50.0	50.0		

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 - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Jessica Kramer

Jessica Kramer Project Manager



Analytical Report 663402

for

COG Operating LLC

Project Manager: Sheldon Hitchcock

Pygmy 27 St 1

06.04.2020

Collected By: Client

1089 N Canal Street Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-20-32), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054) Oklahoma (2019-058), North Carolina (681), Arkansas (20-035-0)

> Xenco-Dallas (EPA Lab Code: TX01468): Texas (TX104704295-19-23), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-17)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-22)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-7)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



06.04.2020

Project Manager: Sheldon Hitchcock

COG Operating LLC 2407 Pecos Avenue Artesia, NM 88210

Reference: XENCO Report No(s): 663402

Pygmy 27 St 1
Project Address:

Sheldon Hitchcock:

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) 663402. 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. 663402 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,

Jessica Kramer

Project Manager

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico



Sample Cross Reference 663402

COG Operating LLC, Artesia, NM

Pygmy 27 St 1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
B-1	S	06.03.2020 12:00	4 ft	663402-001
B-2	S	06.03.2020 12:02	4 ft	663402-002
B-3	S	06.03.2020 12:04	4 ft	663402-003
B-4	S	06.03.2020 12:06	4 ft	663402-004
B-5	S	06.03.2020 12:08	4 ft	663402-005
B-6	S	06.03.2020 12:10	4 ft	663402-006
B-7	S	06.03.2020 12:12	4 ft	663402-007
B-8	S	06.03.2020 12:14	4 ft	663402-008
B-9	S	06.03.2020 12:16	4 ft	663402-009
B-10	S	06.03.2020 12:18	4 ft	663402-010

CASE NARRATIVE

Client Name: COG Operating LLC

Project Name: Pygmy 27 St 1

Project ID: Report Date: 06.04.2020 Work Order Number(s): 663402 Date Received: 06.03.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



COG Operating LLC, Artesia, NM

Pygmy 27 St 1

Sample Id: B-1

Matrix:

Soil

Date Received:06.03.2020 16:10

Lab Sample Id: 663402-001

Date Collected: 06.03.2020 12:00

Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech:

MAB

% Moisture:

Basis:

Analyst: MAB

Date Prep:

06.03.2020 17:30

Wet Weight

Seq Number: 3127913

 Parameter
 Cas Number
 Result
 RL
 Units
 Analysis Date
 Flag
 Dil

 Chloride
 16887-00-6
 371
 10.0
 mg/kg
 06.03.2020 20:42
 1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

06.03.2020 22:16

Tech:

DTH

% Moisture:

70-135

Analyst: DTH

o-Terphenyl

Date Prep: 06.03.2020 17:00

Basis:

Wet Weight

Seq Number: 3127957

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	< 50.0	50.0		mg/kg	06.03.2020 22:16	U	1
Diesel Range Organics	C10C28DRO	< 50.0	50.0		mg/kg	06.03.2020 22:16	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.0	50.0		mg/kg	06.03.2020 22:16	U	1
Total TPH	PHC635	<50.0	50.0		mg/kg	06.03.2020 22:16	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	111	%	70-135	06.03.2020 22:16		

113

84-15-1



COG Operating LLC, Artesia, NM

Pygmy 27 St 1

Sample Id: B-1 Matrix:

Date Received:06.03.2020 16:10

Lab Sample Id: 663402-001

Soil Date Collected: 06.03.2020 12:00

Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech:

MAB

% Moisture:

Analyst: MAB

Date Prep:

06.03.2020 17:25 Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199		mg/kg	06.04.2020 03:06	U	1
Toluene	108-88-3	< 0.00199	0.00199		mg/kg	06.04.2020 03:06	U	1
Ethylbenzene	100-41-4	< 0.00199	0.00199		mg/kg	06.04.2020 03:06	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398		mg/kg	06.04.2020 03:06	U	1
o-Xylene	95-47-6	< 0.00199	0.00199		mg/kg	06.04.2020 03:06	U	1
Total Xylenes	1330-20-7	< 0.00199	0.00199		mg/kg	06.04.2020 03:06	U	1
Total BTEX		< 0.00199	0.00199		mg/kg	06.04.2020 03:06	U	1
Surrogate	Ca	s Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	109	%	70-130	06.04.2020 03:06	
4-Bromofluorobenzene	460-00-4	95	%	70-130	06.04.2020 03:06	



COG Operating LLC, Artesia, NM

Pygmy 27 St 1

Sample Id: B-2

Tech:

Analyst:

Lab Sample Id: 663402-002

Analytical Method: Chloride by EPA 300

MAB

MAB

Matrix: Soil Date Received:06.03.2020 16:10

Date Collected: 06.03.2020 12:02

Sample Depth: 4 ft

Prep Method: E300P

% Moisture:

Date Prep:

06.03.2020 17:30

Basis:

Wet Weight

Seq Number: 3127913

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	380	10.0	mg/kg	06.03.2020 21:03		1

Analytical Method: TPH By SW8015 Mod

DTH

Analyst: DTH

Tech:

06.03.2020 17:00 Date Prep:

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<49.9	49.9		mg/kg	06.03.2020 22:36	U	1
Diesel Range Organics	C10C28DRO	<49.9	49.9		mg/kg	06.03.2020 22:36	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9		mg/kg	06.03.2020 22:36	U	1
Total TPH	PHC635	<49.9	49.9		mg/kg	06.03.2020 22:36	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	97	%	70-135	06.03.2020 22:36		
o-Terphenyl		84-15-1	101	%	70-135	06.03.2020 22:36		



COG Operating LLC, Artesia, NM

Pygmy 27 St 1

Sample Id: B-2

Matrix:

Soil

Date Received:06.03.2020 16:10

Lab Sample Id: 663402-002

Date Collected: 06.03.2020 12:02

Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A % Moisture:

Tech: Analyst: MAB MAB

Date Prep:

06.03.2020 17:25

Basis:

Wet Weight

Parameter	Cas Number	r Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00198	0.00198		mg/kg	06.04.2020 03:26	U	1
Toluene	108-88-3	< 0.00198	0.00198		mg/kg	06.04.2020 03:26	U	1
Ethylbenzene	100-41-4	< 0.00198	0.00198		mg/kg	06.04.2020 03:26	U	1
m,p-Xylenes	179601-23-1	< 0.00395	0.00395		mg/kg	06.04.2020 03:26	U	1
o-Xylene	95-47-6	< 0.00198	0.00198		mg/kg	06.04.2020 03:26	U	1
Total Xylenes	1330-20-7	< 0.00198	0.00198		mg/kg	06.04.2020 03:26	U	1
Total BTEX		< 0.00198	0.00198		mg/kg	06.04.2020 03:26	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	109	%	70-130	06.04.2020 03:26		
4-Bromofluorobenzene		460-00-4	98	%	70-130	06.04.2020 03:26		



COG Operating LLC, Artesia, NM

Pygmy 27 St 1

Sample Id: B-3

Matrix: Soil Date Received:06.03.2020 16:10

Lab Sample Id: 663402-003

Date Collected: 06.03.2020 12:04

Sample Depth: 4 ft

Prep Method: E300P

Analytical Method: Chloride by EPA 300

MAB

% Moisture:

Tech: Analyst:

MAB

Date Prep:

06.03.2020 17:30

Basis:

Wet Weight

Seq Number: 3127913

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	381	10.1	mg/kg	06.03.2020 21:10		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech:

Analyst:

DTH DTH

06.03.2020 17:00 Date Prep:

% Moisture: Basis:

Wet Weight

Parameter	Cas Number	r Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<49.9	49.9		mg/kg	06.03.2020 23:18	U	1
Diesel Range Organics	C10C28DRO	<49.9	49.9		mg/kg	06.03.2020 23:18	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9		mg/kg	06.03.2020 23:18	U	1
Total TPH	PHC635	<49.9	49.9		mg/kg	06.03.2020 23:18	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	105	%	70-135	06.03.2020 23:18		
o-Terphenyl		84-15-1	108	%	70-135	06.03.2020 23:18		



COG Operating LLC, Artesia, NM

Pygmy 27 St 1

Sample Id: B-3

Matrix: Soil Date Received:06.03.2020 16:10

Lab Sample Id: 663402-003

Date Collected: 06.03.2020 12:04

Sample Depth: 4 ft

06.04.2020 03:46

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech:

MAB

% Moisture:

MAB Analyst:

Date Prep:

06.03.2020 17:25

%

70-130

Basis:

Wet Weight

Seq Number: 3127952

1,4-Difluorobenzene

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00198	0.00198		mg/kg	06.04.2020 03:46	U	1
Toluene	108-88-3	< 0.00198	0.00198		mg/kg	06.04.2020 03:46	U	1
Ethylbenzene	100-41-4	< 0.00198	0.00198		mg/kg	06.04.2020 03:46	U	1
m,p-Xylenes	179601-23-1	< 0.00396	0.00396		mg/kg	06.04.2020 03:46	U	1
o-Xylene	95-47-6	< 0.00198	0.00198		mg/kg	06.04.2020 03:46	U	1
Total Xylenes	1330-20-7	< 0.00198	0.00198		mg/kg	06.04.2020 03:46	U	1
Total BTEX		< 0.00198	0.00198		mg/kg	06.04.2020 03:46	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	101	%	70-130	06.04.2020 03:46		

110

540-36-3



COG Operating LLC, Artesia, NM

Pygmy 27 St 1

Sample Id: B-4

Matrix:

Soil

Date Received:06.03.2020 16:10

Lab Sample Id: 663402-004

Date Collected: 06.03.2020 12:06

Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P % Moisture:

Tech: Analyst: MAB MAB

Date Prep:

06.03.2020 17:30

Basis:

Wet Weight

Seq Number: 3127913

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	204	10.0	mg/kg	06.03.2020 21:17		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech:
Analyst:

DTH DTH

Date Prep:

06.03.2020 17:00

Basis:

% Moisture:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<50.1	50.1		mg/kg	06.03.2020 23:39	U	1
Diesel Range Organics	C10C28DRO	< 50.1	50.1		mg/kg	06.03.2020 23:39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.1	50.1		mg/kg	06.03.2020 23:39	U	1
Total TPH	PHC635	< 50.1	50.1		mg/kg	06.03.2020 23:39	U	1
Surrogate	C	as Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	104	%	70-135	06.03.2020 23:39
o-Terphenyl	84-15-1	107	%	70-135	06.03.2020 23:39



COG Operating LLC, Artesia, NM

Pygmy 27 St 1

Sample Id: **B-4**

Matrix:

Date Received:06.03.2020 16:10

Lab Sample Id: 663402-004

Soil Date Collected: 06.03.2020 12:06

Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech:

MAB

Date Prep:

06.03.2020 17:25

% Moisture: Basis:

Wet Weight

Analyst: MAB Seq Number: 3127952

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	06.04.2020 04:07	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	06.04.2020 04:07	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	06.04.2020 04:07	U	1
m,p-Xylenes	179601-23-1	< 0.00399	0.00399		mg/kg	06.04.2020 04:07	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	06.04.2020 04:07	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	06.04.2020 04:07	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	06.04.2020 04:07	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	98	%	70-130	06.04.2020 04:07		
1,4-Difluorobenzene		540-36-3	108	%	70-130	06.04.2020 04:07		



COG Operating LLC, Artesia, NM

Pygmy 27 St 1

Sample Id: B-5

Matrix:

Date Received:06.03.2020 16:10

Lab Sample Id: 663402-005

Soil Date Collected: 06.03.2020 12:08

Sample Depth: 4 ft

Prep Method: E300P

Analytical Method: Chloride by EPA 300

Tech:

MAB

Analyst:

MAB

Date Prep: 06.03.2020 17:30 Basis:

% Moisture:

Wet Weight

Seq Number: 3127913

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	186	10.0	mg/kg	06.03.2020 21:24		1

Analytical Method: TPH By SW8015 Mod

Tech:

DTH

Analyst: DTH

Date Prep:

06.03.2020 17:00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	< 50.0	50.0		mg/kg	06.03.2020 23:59	U	1
Diesel Range Organics	C10C28DRO	< 50.0	50.0		mg/kg	06.03.2020 23:59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.0	50.0		mg/kg	06.03.2020 23:59	U	1
Total TPH	PHC635	< 50.0	50.0		mg/kg	06.03.2020 23:59	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	99	%	70-135	06.03.2020 23:59		
o-Terphenyl		84-15-1	102	%	70-135	06.03.2020 23:59		



COG Operating LLC, Artesia, NM

Pygmy 27 St 1

Sample Id: B-5

Matrix:

Date Received:06.03.2020 16:10

Lab Sample Id: 663402-005

Soil Date Collected: 06.03.2020 12:08

Sample Depth: 4 ft

06.04.2020 04:27

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A % Moisture:

Tech: Analyst: MAB

MAB

Date Prep: 06.03.2020 17:25 Basis:

70-130

Wet Weight

Seq Number: 3127952

4-Bromofluorobenzene

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199		mg/kg	06.04.2020 04:27	U	1
Toluene	108-88-3	< 0.00199	0.00199		mg/kg	06.04.2020 04:27	U	1
Ethylbenzene	100-41-4	< 0.00199	0.00199		mg/kg	06.04.2020 04:27	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398		mg/kg	06.04.2020 04:27	U	1
o-Xylene	95-47-6	< 0.00199	0.00199		mg/kg	06.04.2020 04:27	U	1
Total Xylenes	1330-20-7	< 0.00199	0.00199		mg/kg	06.04.2020 04:27	U	1
Total BTEX		< 0.00199	0.00199		mg/kg	06.04.2020 04:27	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1.4-Difluorobenzene		540-36-3	112	%	70-130	06.04.2020 04:27		

96

460-00-4



COG Operating LLC, Artesia, NM

Pygmy 27 St 1

Sample Id: **B-6**

Matrix: Soil Date Received:06.03.2020 16:10

Lab Sample Id: 663402-006

Date Collected: 06.03.2020 12:10

Sample Depth: 4 ft

Prep Method: E300P

Analytical Method: Chloride by EPA 300

Tech:

MAB

Analyst:

MAB

Date Prep:

06.03.2020 17:30

% Moisture: Basis:

Wet Weight

Seq Number: 3127913

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	234	10.0	mg/kg	06.03.2020 21:45		1

Analytical Method: TPH By SW8015 Mod

Tech:

DTH

Analyst: DTH

Date Prep:

06.03.2020 17:00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<49.8	49.8		mg/kg	06.04.2020 00:20	U	1
Diesel Range Organics	C10C28DRO	<49.8	49.8		mg/kg	06.04.2020 00:20	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8		mg/kg	06.04.2020 00:20	U	1
Total TPH	PHC635	<49.8	49.8		mg/kg	06.04.2020 00:20	U	1
Surrogate	(Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	1	111-85-3	100	%	70-135	06.04.2020 00:20		
o-Terphenyl	8	34-15-1	105	%	70-135	06.04.2020 00:20		



COG Operating LLC, Artesia, NM

Pygmy 27 St 1

Sample Id: **B-6**

Matrix:

Date Received:06.03.2020 16:10

Lab Sample Id: 663402-006

Soil Date Collected: 06.03.2020 12:10

Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A % Moisture:

Tech: Analyst: MAB

MAB

Date Prep: 06.03.2020 17:25 Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	06.04.2020 04:48	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	06.04.2020 04:48	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	06.04.2020 04:48	U	1
m,p-Xylenes	179601-23-1	< 0.00401	0.00401		mg/kg	06.04.2020 04:48	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	06.04.2020 04:48	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	06.04.2020 04:48	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	06.04.2020 04:48	U	1
Surrogate	Ca	as Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	F
1,4-Difluorobenzene	540-36-3	110	%	70-130	06.04.2020 04:48	
4-Bromofluorobenzene	460-00-4	97	%	70-130	06.04.2020 04:48	



COG Operating LLC, Artesia, NM

Pygmy 27 St 1

Sample Id: **B-7**

Matrix: Soil Date Received:06.03.2020 16:10

Lab Sample Id: 663402-007

Date Collected: 06.03.2020 12:12

Sample Depth: 4 ft

Prep Method: E300P

Analytical Method: Chloride by EPA 300

Tech:

MAB

Analyst:

MAB

Date Prep:

06.03.2020 17:30

% Moisture: Basis:

Wet Weight

Seq Number: 3127913

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	223	10.1	mg/kg	06.03.2020 21:52		1

Analytical Method: TPH By SW8015 Mod

Tech:

DTH

Analyst: DTH

Total TPH

Seq Number: 3127957

PHC635

Date Prep:

06.03.2020 17:00

Prep Method: SW8015P % Moisture:

06.04.2020 00:40

Basis:

mg/kg

Wet Weight

U

Dil

1

1

Cas Number **Parameter** Result RLUnits **Analysis Date** Flag Gasoline Range Hydrocarbons PHC610 < 50.3 50.3 06.04.2020 00:40 U mg/kg Diesel Range Organics C10C28DRO 50.3 06.04.2020 00:40 U < 50.3 mg/kg Motor Oil Range Hydrocarbons (MRO) PHCG2835 < 50.3 50.3 06.04.2020 00:40 U mg/kg

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	06.04.2020 00:40	
o-Terphenyl	84-15-1	106	%	70-135	06.04.2020 00:40	

< 50.3

50.3



COG Operating LLC, Artesia, NM

Pygmy 27 St 1

Sample Id: B-7

Matrix:

Date Received:06.03.2020 16:10

Lab Sample Id: 663402-007

Soil Date Collected: 06.03.2020 12:12

Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech:

MAB

Date Prep:

% Moisture:

Basis:

Analyst: Seq Number: 3127952

MAB

06.03.2020 17:25

Wet Weight

Benzene 71-43-2 <0.00200	06.04.2020 05:08	U	
Toluene 108-88-3 <0.00200 0.00200 mg/kg		U	1
	06.04.2020 05:08	U	1
Ethylbenzene 100-41-4 <0.00200 0.00200 mg/kg	06.04.2020 05:08	U	1
m,p-Xylenes 179601-23-1 <0.00399 0.00399 mg/kg	06.04.2020 05:08	U	1
o-Xylene 95-47-6 <0.00200 0.00200 mg/kg	06.04.2020 05:08	U	1
Total Xylenes 1330-20-7 <0.00200 0.00200 mg/kg	06.04.2020 05:08	U	1
Total BTEX <0.00200 0.00200 mg/kg	06.04.2020 05:08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	98	%	70-130	06.04.2020 05:08	
1,4-Difluorobenzene	540-36-3	110	%	70-130	06.04.2020 05:08	



COG Operating LLC, Artesia, NM

Pygmy 27 St 1

Sample Id: **B-8**

Matrix: Soil Date Received:06.03.2020 16:10

Lab Sample Id: 663402-008

Date Collected: 06.03.2020 12:14

Sample Depth: 4 ft

Prep Method: E300P

Analytical Method: Chloride by EPA 300

Tech:

MAB

MAB Analyst:

Date Prep:

06.03.2020 17:30

Basis:

% Moisture:

Wet Weight

Seq Number: 3127913

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	200	9.92	mg/kg	06.03.2020 21:59		1

Analytical Method: TPH By SW8015 Mod

Tech:

Analyst: DTH

DTH

06.03.2020 17:00 Date Prep:

Prep Method: SW8015P % Moisture:

Basis: Wet Weight

Parameter	Cas Number	r Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<49.9	49.9		mg/kg	06.03.2020 23:39	U	1
Diesel Range Organics	C10C28DRO	<49.9	49.9		mg/kg	06.03.2020 23:39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9		mg/kg	06.03.2020 23:39	U	1
Total TPH	PHC635	<49.9	49.9		mg/kg	06.03.2020 23:39	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	87	%	70-135	06.03.2020 23:39		
o-Terphenyl		84-15-1	87	%	70-135	06.03.2020 23:39		



COG Operating LLC, Artesia, NM

Pygmy 27 St 1

Sample Id: **B-8**

Matrix:

Date Received:06.03.2020 16:10

Lab Sample Id: 663402-008

Soil Date Collected: 06.03.2020 12:14

Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A % Moisture:

Tech:

MAB

Analyst: MAB

Date Prep: 06.03.2020 17:25 Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00198	0.00198		mg/kg	06.04.2020 05:28	U	1
Toluene	108-88-3	< 0.00198	0.00198		mg/kg	06.04.2020 05:28	U	1
Ethylbenzene	100-41-4	< 0.00198	0.00198		mg/kg	06.04.2020 05:28	U	1
m,p-Xylenes	179601-23-1	< 0.00396	0.00396		mg/kg	06.04.2020 05:28	U	1
o-Xylene	95-47-6	< 0.00198	0.00198		mg/kg	06.04.2020 05:28	U	1
Total Xylenes	1330-20-7	< 0.00198	0.00198		mg/kg	06.04.2020 05:28	U	1
Total BTEX		< 0.00198	0.00198		mg/kg	06.04.2020 05:28	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4 D	,	160.00.4	05	0/	70 120	06.04.2020.05.20		

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	95	%	70-130	06.04.2020 05:28	
1,4-Difluorobenzene	540-36-3	108	%	70-130	06.04.2020 05:28	



COG Operating LLC, Artesia, NM

Pygmy 27 St 1

Sample Id: **B-9**

Matrix: Soil Date Received:06.03.2020 16:10

Lab Sample Id: 663402-009

Date Collected: 06.03.2020 12:16

Sample Depth: 4 ft

Prep Method: E300P

Analytical Method: Chloride by EPA 300

Tech:

MAB

MAB Analyst:

Date Prep:

06.03.2020 17:30

Basis:

% Moisture:

Wet Weight

Seq Number: 3127913

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	231	10.0	mg/kg	06.03.2020 22:06		1

Analytical Method: TPH By SW8015 Mod

Tech:

Analyst: DTH

Seq Number: 3127951

DTH

06.03.2020 17:00 Date Prep:

% Moisture:

Basis:

Prep Method: SW8015P

Wet Weight

Flag

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<49.9	49.9	mg/kg	06.03.2020 23:59	U	1
Diesel Range Organics	C10C28DRO	<49.9	49.9	mg/kg	06.03.2020 23:59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	06.03.2020 23:59	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	06.03.2020 23:59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	102	%	70-135	06.03.2020 23:59
o-Terphenyl	84-15-1	97	%	70-135	06.03.2020 23:59



COG Operating LLC, Artesia, NM

Pygmy 27 St 1

Sample Id: **B-9**

Matrix:

Date Received:06.03.2020 16:10

Lab Sample Id: 663402-009

Soil Date Collected: 06.03.2020 12:16

Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A % Moisture:

Tech: Analyst: MAB

MAB

Date Prep: 06.03.2020 17:25 Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00201	0.00201		mg/kg	06.04.2020 05:49	U	1
Toluene	108-88-3	< 0.00201	0.00201		mg/kg	06.04.2020 05:49	U	1
Ethylbenzene	100-41-4	< 0.00201	0.00201		mg/kg	06.04.2020 05:49	U	1
m,p-Xylenes	179601-23-1	< 0.00402	0.00402		mg/kg	06.04.2020 05:49	U	1
o-Xylene	95-47-6	< 0.00201	0.00201		mg/kg	06.04.2020 05:49	U	1
Total Xylenes	1330-20-7	< 0.00201	0.00201		mg/kg	06.04.2020 05:49	U	1
Total BTEX		< 0.00201	0.00201		mg/kg	06.04.2020 05:49	U	1
Surrogate	Ca	s Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	112	%	70-130	06.04.2020 05:49	
4-Bromofluorobenzene	460-00-4	101	%	70-130	06.04.2020 05:49	



COG Operating LLC, Artesia, NM

Pygmy 27 St 1

Sample Id: **B-10** Matrix:

Date Received:06.03.2020 16:10

Lab Sample Id: 663402-010

Soil Date Collected: 06.03.2020 12:18

Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P % Moisture:

Tech:

MAB

Wet Weight

MAB Analyst:

Date Prep:

06.03.2020 17:30

Basis:

Seq Number: 3127913

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	246	10.0	mg/kg	06.03.2020 22:13		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

DTH

DTH

Tech:

Analyst:

Date Prep:

06.03.2020 17:00

Basis:

% Moisture:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	< 50.0	50.0		mg/kg	06.04.2020 00:20	U	1
Diesel Range Organics	C10C28DRO	< 50.0	50.0		mg/kg	06.04.2020 00:20	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.0	50.0		mg/kg	06.04.2020 00:20	U	1
Total TPH	PHC635	< 50.0	50.0		mg/kg	06.04.2020 00:20	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	87	%	70-135	06.04.2020 00:20		
o-Terphenyl		84-15-1	87	%	70-135	06.04.2020 00:20		



COG Operating LLC, Artesia, NM

Pygmy 27 St 1

Sample Id:

B-10

Matrix:

Date Received:06.03.2020 16:10

Lab Sample Id: 663402-010

Soil Date Collected: 06.03.2020 12:18

Sample Depth: 4 ft

06.04.2020 06:09

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

mg/kg

% Moisture:

Tech:

Total BTEX

MAB

Analyst: Seq Number: 3127952

MAB

Date Prep:

06.03.2020 17:25

Basis:

Wet Weight

U

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200	mg/kg	06.04.2020 06:09	U	1
Toluene	108-88-3	< 0.00200	0.00200	mg/kg	06.04.2020 06:09	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200	mg/kg	06.04.2020 06:09	U	1
m,p-Xylenes	179601-23-1	< 0.00401	0.00401	mg/kg	06.04.2020 06:09	U	1
o-Xylene	95-47-6	< 0.00200	0.00200	mg/kg	06.04.2020 06:09	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200	mg/kg	06.04.2020 06:09	U	1

0.00200

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	97	%	70-130	06.04.2020 06:09	
1,4-Difluorobenzene	540-36-3	109	%	70-130	06.04.2020 06:09	

< 0.00200



Flagging Criteria

- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- RPD exceeded lab control limits.
- The target analyte was positively identified below the quantitation limit and above the detection limit.
- Analyte was not detected.
- 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.

ND Not Detected.

RLReporting 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

DLMethod Detection Limit

NC Non-Calculable

SMP Client Sample

BLK

Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample

BKSD/LCSD Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD

Method Duplicate/Sample Duplicate

MS

Matrix Spike

MSD: Matrix Spike Duplicate

- + NELAC certification not offered for this compound.
- (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

E300P

Prep Method:

RPD

Prep Method:

Units

SW8015P

Analysis

Flag

Flag

%RPD

Limite

QC Summary 663402

COG Operating LLC

Pygmy 27 St 1

E300P Analytical Method: Chloride by EPA 300 Prep Method: 3127913 Seg Number: Matrix: Solid Date Prep: 06.03.2020 7704725-1-BLK LCS Sample Id: 7704725-1-BKS LCSD Sample Id: 7704725-1-BSD MB Sample Id: LCS RPD MB Spike LCS Limits %RPD Units Analysis LCSD LCSD

Flag **Parameter** Result Amount Result %Rec Result %Rec Limit Date Chloride <10.0 250 252 101 252 90-110 0 20 06.03.2020 20:28 101 mg/kg

Analytical Method: Chloride by EPA 300 3127913

Seq Number: Matrix: Soil Date Prep: 06.03.2020 663402-001 S 663402-001 MS Sample Id: MSD Sample Id: 663402-001 SD Parent Sample Id:

Parent Spike MS MS MSD MSD Limits %RPD RPD Units Analysis **Parameter** Flag Result Amount Result %Rec Result %Rec Limit Date 20 06.03.2020 20:49 Chloride 371 201 559 94 560 94 90-110 0 mg/kg

Analytical Method: Chloride by EPA 300

E300P Prep Method: 3127913 Seq Number: Matrix: Soil Date Prep: 06.03.2020

MS

MS Sample Id: 663403-001 S MSD Sample Id: 663403-001 SD Parent Sample Id: 663403-001 MS

Spike **Parent** MSD **MSD** Flag **Parameter** Result Result Limit Date Amount %Rec Result %Rec Chloride 0 20 06.03.2020 22:27 <10.0 200 196 98 196 98 90-110 mg/kg

Analytical Method: TPH By SW8015 Mod

3127957 Matrix: Solid Seq Number: Date Prep: 06.03.2020 LCS Sample Id: 7704754-1-BKS LCSD Sample Id: 7704754-1-BSD

MB Sample Id: 7704754-1-BLK

RPD MB Spike LCS LCS LCSD LCSD Limits %RPD Units Analysis **Parameter** Result Limit Date Result Amount %Rec %Rec Result 06.03.2020 13:02 Gasoline Range Hydrocarbons 971 97 907 91 35 < 50.0 1000 70-135 7 mg/kg 06.03.2020 13:02 1020 102 1010 101 70-135 35 Diesel Range Organics < 50.0 1000 1 mg/kg

LCS MBMB LCS LCSD Limits Units Analysis LCSD **Surrogate** %Rec %Rec Flag Flag Date Flag %Rec 06.03.2020 13:02 1-Chlorooctane 93 117 110 70-135 % 06.03.2020 13:02 o-Terphenyl 98 108 108 70-135 %

SW8015P Analytical Method: TPH By SW8015 Mod Prep Method: Seq Number: 3127951 Matrix: Solid Date Prep: 06.03.2020

LCS Sample Id: 7704753-1-BKS LCSD Sample Id: 7704753-1-BSD MB Sample Id: 7704753-1-BLK

MB Spike LCS LCS %RPD RPD Units Analysis LCSD LCSD Limits **Parameter** Limit Result Amount Result %Rec Date Result %Rec 06.03.2020 13:02 Gasoline Range Hydrocarbons 20 1000 794 79 973 97 70-135 35 mg/kg < 50.0 06.03.2020 13:02 81 1000 70-135 Diesel Range Organics < 50.0 1000 814 100 21 35 mg/kg

MB MB LCS LCS LCSD Units Analysis LCSD Limits **Surrogate** Flag Date %Rec Flag %Rec %Rec Flag 06.03.2020 13:02 1-Chlorooctane 72 107 132 70-135 % 06.03.2020 13:02 o-Terphenyl 72 97 102 70-135 %

MS/MSD Percent Recovery Relative Percent Difference LCS/LCSD Recovery Log Difference

[D] = 100*(C-A) / BRPD = 200* | (C-E) / (C+E) | [D] = 100 * (C) / [B]

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample = Parent Result = MS/LCS Result

= MSD/LCSD Result

MS = Matrix Spike B = Spike Added D = MSD/LCSD % Rec

QC Summary 663402



COG Operating LLC

Pygmy 27 St 1

Analytical Method: TPH By SW8015 Mod

Seq Number:

3127957

Matrix: Solid

MB Sample Id: 7704754-1-BLK

Prep Method:

SW8015P

Date Prep: 06.03.2020

MB

Parameter

Result

Units

Analysis Date

Flag

Motor Oil Range Hydrocarbons (MRO)

< 50.0

mg/kg

06.03.2020 12:41

Analytical Method: TPH By SW8015 Mod

Seq Number:

Parameter

3127951

Matrix: Solid

SW8015P Prep Method:

> Date Prep: 06.03.2020

MB Sample Id: 7704753-1-BLK

MB

MS Sample Id:

Units

Analysis Date

Flag

Flag

Motor Oil Range Hydrocarbons (MRO)

Result < 50.0

06.03.2020 12:41 mg/kg

Analytical Method: TPH By SW8015 Mod

Seq Number: Parent Sample Id: 3127957 663293-001

Matrix: Soil

SW8015P Prep Method:

Date Prep: 06.03.2020

MSD Sample Id: 663293-001 SD

Spike %RPD **RPD Parent** MS MS Units MSD MSD Limits Analysis **Parameter** Result Result %Rec Limit Date Amount Result %Rec Gasoline Range Hydrocarbons < 50.1 1000 1040 104 1020 70-135 2 35 06.03.2020 15:58 102 mg/kg Diesel Range Organics 94.1 1000 1200 111 1190 110 70-135 1 35 06.03.2020 15:58 mg/kg

663293-001 S

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	115		116		70-135	%	06.03.2020 15:58
o-Terphenyl	115		118		70-135	%	06.03.2020 15:58

Analytical Method: TPH By SW8015 Mod

Seq Number: Parent Sample Id: 3127951

663367-001

Matrix: Soil

MS Sample Id: 663367-001 S

Prep Method:

SW8015P

Date Prep:

06.03.2020

MSD Sample Id: 663367-001 SD

%RPD RPD **Parent** Spike MS MS **MSD MSD** Limits Units Analysis Flag **Parameter** Result Limit Date Result %Rec Amount Result %Rec Gasoline Range Hydrocarbons < 50.0 2 35 06.03.2020 15:58 1000 1190 119 1220 122 70-135 mg/kg Diesel Range Organics 06.03.2020 15:58 1090 109 1090 70-135 0 < 50.0 1000 109 35 mg/kg

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	125		127		70-135	%	06.03.2020 15:58
o-Terphenyl	112		113		70-135	%	06.03.2020 15:58

QC Summary 663402



COG Operating LLC

Pygmy 27 St 1

Analytical Method: BTEX by EPA 8021B SW5035A Prep Method: Seq Number: 3127952 Matrix: Solid Date Prep:

06.03.2020 LCS Sample Id: 7704745-1-BKS MB Sample Id: 7704745-1-BLK LCSD Sample Id: 7704745-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	< 0.00200	0.100	0.108	108	0.108	108	70-130	0	35	mg/kg	06.04.2020 01:24	
Toluene	< 0.00200	0.100	0.101	101	0.100	100	70-130	1	35	mg/kg	06.04.2020 01:24	
Ethylbenzene	< 0.00200	0.100	0.0946	95	0.0911	91	71-129	4	35	mg/kg	06.04.2020 01:24	
m,p-Xylenes	< 0.00400	0.200	0.193	97	0.185	93	70-135	4	35	mg/kg	06.04.2020 01:24	
o-Xylene	< 0.00200	0.100	0.0986	99	0.0949	95	71-133	4	35	mg/kg	06.04.2020 01:24	
Surrogate	MB %Rec	MB Flag			LCS Flag	LCSI %Re			imits	Units	Analysis Date	
1,4-Difluorobenzene	108		1	08		109		70	-130	%	06.04.2020 01:24	
4-Bromofluorobenzene	94		9	91		91		70	-130	%	06.04.2020 01:24	

Analytical Method: BTEX by EPA 8021B

Seq Number: 3127952 Matrix: Soil Date Prep: 06.03.2020 MS Sample Id: 663402-001 S MSD Sample Id: 663402-001 SD Parent Sample Id: 663402-001

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date
Benzene	< 0.00201	0.101	0.105	104	0.103	104	70-130	2	35	mg/kg	06.04.2020 02:04
Toluene	< 0.00201	0.101	0.0993	98	0.0976	98	70-130	2	35	mg/kg	06.04.2020 02:04
Ethylbenzene	< 0.00201	0.101	0.0936	93	0.0911	92	71-129	3	35	mg/kg	06.04.2020 02:04
m,p-Xylenes	< 0.00402	0.201	0.191	95	0.188	95	70-135	2	35	mg/kg	06.04.2020 02:04
o-Xylene	< 0.00201	0.101	0.0965	96	0.0899	91	71-133	7	35	mg/kg	06.04.2020 02:04

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		108		70-130	%	06.04.2020 02:04
4-Bromofluorobenzene	93		90		70-130	%	06.04.2020 02:04

SW5035A

Flag

Prep Method:



Chain of Custody

Work Order No: 663402

www.xenco.com

Page

of.

Work Order Comments

Phoenix,AZ (480) 355-0900 Atlanta,GA (770) 449-8800 Tampa,FL (813) 620-2000 West Palm Beach, FL (561) 689-6701 Midland,TX (432) 704-5440 EL Paso,TX (915) 585-3443 Lubbock,TX (806) 794-1296 Craslbad, NM (432) 704-5440 Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334

Revised Date 022619 Rev. 2019.		6			(
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e) Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	(Signature)	Received by: (Signature)	ture)	Relinquished by: (Signature)
	iated.	A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.	ted to Xenco, but not analyzed. Th	of \$5 for each sample submit	h project and a charge	75.00 will be applied to eac	of Xenco. A minimum charge of \$
	conditions the control	Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions in the control of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control	company to Xenco, its affiliates ar	lid purchase order from client	nples constitutes a val	t and relinquishment of sa	Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It
1631 / 245.1 / 7470 / 7471 : Hg	K Se Ag SIOZ	1 AISb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U		8RCRA 13PPM Texas 1 TCLP / SPLP 6010: 8RCRA		otal 200.7 / 6010 200.8 / 6020: Circle Method(s) and Metal(s) to be analyzed	Total 200.7 / 6010 Circle Method(s) an
T 05 11 1/ 75				10,18	110		18-10
			-	3	121	_	8-9
				- 1	121		B-8
				2112	7 1 2		B-7
				12:10	1 12		3-6
				12108	12		3-5
				12:06	12		0-4
				104	12		1
				102	2	1	B-2
			1 × × ×	15,00 4,	6/3/20 12	5	8-1
Sample Comments			Numb TP BT	Time Depth	Date Sampled Sa	on Matrix	Sample Identification
The same of the sa			H E	itainers:	Total Containers:	Yes (No) N/A	Sample Custody Seals:
TAT starts the day received by the lab, if received by 4:00pm			X	Factor: -0-/	Correction Factor:	Yes No N/A	Cooler Custody Seals:
ZII DOGINIO PROGRESIO				7	1	(Yes No	Received Intact:
NaOri, Na				Thermometer ID	Then	(U)	Temperature (°C):
HCL: HL				Wet Ice: Yes No	Yes) No	Temp Blank:	SAMPLE RECEIPT
1001.11					Quote #:		PO#:
H2504: H2				Due Date: (a/4			Sampler's Name:
None: NO				Rush: 24m			Project Location
MeOH: Me			Code	Routine		1 1	
Preservative Codes		ANALYSIS REQUEST		Turn Around	5+2	PYAMY 27	
	Deliverables: EDD L ADAT L	Deiv		Email:			Phone:
Ogi Circuit Circuit Circuit	oring:Level II Level III Lesi	hepo	e ZIP:	City, State ZIP:			City, State ZIP:
TBBP I evel IV	State of Project:	3	Address:	Ado			Address:
relas KKC Superruna	Program: UST/PST PRP Brownfields RC Superfund	Prog	lame:	Company Name:		004	
Allinellis	Work Order Collinents		fferent)	Bill to: (if different)	+iton ack	holdon:	Project Manager: 5

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: COG Operating LLC

Date/ Time Received: 06.03.2020 04.10.00 PM

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

Work Order #: 663402

Temperature Measuring device used: T-NM-007

	Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?		3.8	
#2 *Shipping container in good condition?		Yes	
#3 *Samples received on ice?		Yes	
#4 *Custody Seals intact on shipping contai	ner/ cooler?	Yes	
#5 Custody Seals intact on sample bottles?		Yes	
#6*Custody Seals Signed and dated?		Yes	
#7 *Chain of Custody present?		Yes	
#8 Any missing/extra samples?		No	
#9 Chain of Custody signed when relinquish	ned/ received?	Yes	
#10 Chain of Custody agrees with sample la	abels/matrix?	Yes	
#11 Container label(s) legible and intact?		Yes	
#12 Samples in proper container/ bottle?		Yes	Samples received in bulk containers.
#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 headsp	ace?	N/A	

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

Analyst:

PH Device/Lot#:

Checklist completed by: Elizabeth McClellan

Date: 06.03.2020

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: <u>06.04.2020</u>



Certificate of Analysis Summary 663403

COG Operating LLC, Artesia, NM

Project Name: Pygmy 27 St 1

Project Id: Contact:

Sheldon Hitchcock

Project Location:

	Lab Id:	663403-0	01	663403-0	02	663403-0	003		
Analysis Requested	Field Id:	SW-1		SW-2		SW-3			
Anuiysis Kequesieu	Depth:								
	Matrix:	SOIL		SOIL		SOIL			
	Sampled:	06.03.2020	12:30	06.03.2020	12:32	06.03.2020	12:34		
BTEX by EPA 8021B	Extracted:	06.03.2020	17:25	06.03.2020	17:25	06.03.2020	17:25		
	Analyzed:	06.04.2020	07:11	06.04.2020	07:31	06.04.2020	07:51		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Benzene		< 0.00201	0.00201	< 0.00199	0.00199	< 0.00200	0.00200		
Toluene		< 0.00201	0.00201	< 0.00199	0.00199	< 0.00200	0.00200		
Ethylbenzene		< 0.00201	0.00201	< 0.00199	0.00199	< 0.00200	0.00200		
m,p-Xylenes		< 0.00402	0.00402		0.00398	< 0.00401	0.00401		
o-Xylene			0.00201		0.00199	< 0.00200	0.00200		
Total Xylenes		< 0.00201	0.00201	< 0.00199	0.00199	< 0.00200	0.00200		
Total BTEX		< 0.00201	0.00201	< 0.00199	0.00199	< 0.00200	0.00200		
Chloride by EPA 300	Extracted:	06.03.2020	17:30	06.03.2020	17:30	06.03.2020	17:30		
	Analyzed:	06.03.2020	22:20	06.03.2020	22:40	06.03.2020	22:47		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Chloride		<10.0	10.0	153	10.1	448	9.92		
TPH By SW8015 Mod	Extracted:	06.03.2020	17:00	06.03.2020	17:00	06.03.2020	17:00		
	Analyzed:	06.03.2020	20:32	06.03.2020	20:53	06.04.2020	11:02		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Gasoline Range Hydrocarbons		< 50.0	50.0	< 50.1	50.1	<50.3	50.3		
Diesel Range Organics		< 50.0	50.0	< 50.1	50.1	<50.3	50.3		
Motor Oil Range Hydrocarbons (MRO)		< 50.0	50.0	< 50.1	50.1	<50.3	50.3		
Total TPH		< 50.0	50.0	< 50.1	50.1	< 50.3	50.3		

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 - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Jessica Vramer

Date Received in Lab: Wed 06.03.2020 16:10

Project Manager: Jessica Kramer

Report Date: 06.04.2020 13:41

Jessica Kramer Project Manager



Analytical Report 663403

for

COG Operating LLC

Project Manager: Sheldon Hitchcock

Pygmy 27 St 1

06.04.2020

Collected By: Client

1089 N Canal Street Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-20-32), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054) Oklahoma (2019-058), North Carolina (681), Arkansas (20-035-0)

> Xenco-Dallas (EPA Lab Code: TX01468): Texas (TX104704295-19-23), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-17)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-22)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-7)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



06.04.2020

Project Manager: Sheldon Hitchcock

COG Operating LLC 2407 Pecos Avenue Artesia, NM 88210

Reference: XENCO Report No(s): 663403

Pygmy 27 St 1
Project Address:

Sheldon Hitchcock:

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) 663403. 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. 663403 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,

Jessica Kramer

Project Manager

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico



Sample Cross Reference 663403

COG Operating LLC, Artesia, NM

Pygmy 27 St 1

Sample Id	Matrix	Date Collected Sample D	epth Lab Sample Id
SW-1	S	06.03.2020 12:30	663403-001
SW-2	S	06.03.2020 12:32	663403-002
SW-3	S	06.03.2020 12:34	663403-003

CASE NARRATIVE

Client Name: COG Operating LLC

Project Name: Pygmy 27 St 1

Project ID: Report Date: 06.04.2020 Work Order Number(s): 663403 Date Received: 06.03.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Dil

1



Certificate of Analytical Results 663403

COG Operating LLC, Artesia, NM

Pygmy 27 St 1

Sample Id: **SW-1** Matrix:

16887-00-6

Date Received:06.03.2020 16:10

Lab Sample Id: 663403-001

Soil Date Collected: 06.03.2020 12:30

Prep Method: E300P

% Moisture:

Tech: Analyst:

Chloride

MAB

Analytical Method: Chloride by EPA 300

MAB

Date Prep: 06.03.2020 17:30

10.0

Basis:

mg/kg

Wet Weight

U

Seq Number: 3127913

Parameter Result Cas Number RLUnits **Analysis Date** Flag

<10.0

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

% Moisture:

06.03.2020 22:20

Tech: Analyst: DTH DTH

Date Prep:

06.03.2020 17:00

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<50.0	50.0		mg/kg	06.03.2020 20:32	U	1
Diesel Range Organics	C10C28DRO	< 50.0	50.0		mg/kg	06.03.2020 20:32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.0	50.0		mg/kg	06.03.2020 20:32	U	1
Total TPH	PHC635	< 50.0	50.0		mg/kg	06.03.2020 20:32	U	1
Surrogate	C	as Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	101	%	70-135	06.03.2020 20:32
o-Terphenyl	84-15-1	94	%	70-135	06.03.2020 20:32



COG Operating LLC, Artesia, NM

Pygmy 27 St 1

Sample Id: **SW-1** Matrix:

Date Received:06.03.2020 16:10

Lab Sample Id: 663403-001

Soil Date Collected: 06.03.2020 12:30

Prep Method: SW5035A

% Moisture:

Tech: Analyst: MAB MAB

Analytical Method: BTEX by EPA 8021B

Date Prep:

06.03.2020 17:25

Basis:

Wet Weight

Parameter	Cas Number	r Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00201	0.00201		mg/kg	06.04.2020 07:11	U	1
Toluene	108-88-3	< 0.00201	0.00201		mg/kg	06.04.2020 07:11	U	1
Ethylbenzene	100-41-4	< 0.00201	0.00201		mg/kg	06.04.2020 07:11	U	1
m,p-Xylenes	179601-23-1	< 0.00402	0.00402		mg/kg	06.04.2020 07:11	U	1
o-Xylene	95-47-6	< 0.00201	0.00201		mg/kg	06.04.2020 07:11	U	1
Total Xylenes	1330-20-7	< 0.00201	0.00201		mg/kg	06.04.2020 07:11	U	1
Total BTEX		< 0.00201	0.00201		mg/kg	06.04.2020 07:11	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	96	%	70-130	06.04.2020 07:11		
1.4-Difluorobenzene		540-36-3	109	%	70-130	06.04.2020 07:11		



COG Operating LLC, Artesia, NM

Pygmy 27 St 1

Sample Id: **SW-2** Matrix:

Soil

Date Received:06.03.2020 16:10

Lab Sample Id: 663403-002

Date Collected: 06.03.2020 12:32

Prep Method: E300P

Tech:

Analytical Method: Chloride by EPA 300

% Moisture:

MAB

MAB Analyst:

Date Prep:

06.03.2020 17:30

Basis:

Wet Weight

Seq Number: 3127913

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	153	10.1	mg/kg	06.03.2020 22:40		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech:

DTH

% Moisture:

Analyst: DTH Date Prep:

06.03.2020 17:00

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	< 50.1	50.1		mg/kg	06.03.2020 20:53	U	1
Diesel Range Organics	C10C28DRO	< 50.1	50.1		mg/kg	06.03.2020 20:53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.1	50.1		mg/kg	06.03.2020 20:53	U	1
Total TPH	PHC635	<50.1	50.1		mg/kg	06.03.2020 20:53	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	94	%	70-135	06.03.2020 20:53		
o-Terphenyl	:	84-15-1	92	%	70-135	06.03.2020 20:53		



COG Operating LLC, Artesia, NM

Pygmy 27 St 1

Sample Id: SW-2

Matrix:

Soil

Date Received:06.03.2020 16:10

Lab Sample Id: 663403-002

Date Collected: 06.03.2020 12:32

Prep Method: SW5035A

06.04.2020 07:31

Prep I

70-130

% Moisture:

Tech: MA

Analyst:

MAB MAB

Analytical Method: BTEX by EPA 8021B

Date Prep:

06.03.2020 17:25

Basis:

Wet Weight

Seq Number: 3127952

4-Bromofluorobenzene

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199		mg/kg	06.04.2020 07:31	U	1
Toluene	108-88-3	< 0.00199	0.00199		mg/kg	06.04.2020 07:31	U	1
Ethylbenzene	100-41-4	< 0.00199	0.00199		mg/kg	06.04.2020 07:31	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398		mg/kg	06.04.2020 07:31	U	1
o-Xylene	95-47-6	< 0.00199	0.00199		mg/kg	06.04.2020 07:31	U	1
Total Xylenes	1330-20-7	< 0.00199	0.00199		mg/kg	06.04.2020 07:31	U	1
Total BTEX		< 0.00199	0.00199		mg/kg	06.04.2020 07:31	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	:	540-36-3	108	%	70-130	06.04.2020 07:31		

92

460-00-4



COG Operating LLC, Artesia, NM

Pygmy 27 St 1

Sample Id: SW-3

Matrix:

Soil

Date Received:06.03.2020 16:10

Lab Sample Id: 663403-003

Date Collected: 06.03.2020 12:34

Prep Method: E300P

% Moisture:

Tech: Analyst: MAB MAB

Analytical Method: Chloride by EPA 300

Date Prep:

06.03.2020 17:30

Basis:

Wet Weight

Seq Number: 3127913

seq rumber.

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	448	9.92	mg/kg	06.03.2020 22:47		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

% Moisture:

Tech:
Analyst:

DTH DTH

Date Prep:

06.03.2020 17:00

Basis:

Wet Weight

Parameter	Cas Number	r Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<50.3	50.3		mg/kg	06.04.2020 11:02	U	1
Diesel Range Organics	C10C28DRO	<50.3	50.3		mg/kg	06.04.2020 11:02	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.3	50.3		mg/kg	06.04.2020 11:02	U	1
Total TPH	PHC635	<50.3	50.3		mg/kg	06.04.2020 11:02	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	111	%	70-135	06.04.2020 11:02		
o-Terphenyl		84-15-1	106	%	70-135	06.04.2020 11:02		



COG Operating LLC, Artesia, NM

Pygmy 27 St 1

Sample Id: SW-3

Matrix:

Soil

Date Received:06.03.2020 16:10

Lab Sample Id: 663403-003

Date Collected: 06.03.2020 12:34

Prep Method: SW5035A

% Moisture:

Tech: Analyst: MAB

Analytical Method: BTEX by EPA 8021B

MAB

Date Prep:

06.03.2020 17:25

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	06.04.2020 07:51	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	06.04.2020 07:51	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	06.04.2020 07:51	U	1
m,p-Xylenes	179601-23-1	< 0.00401	0.00401		mg/kg	06.04.2020 07:51	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	06.04.2020 07:51	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	06.04.2020 07:51	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	06.04.2020 07:51	U	1
Surrogate	C	as Number	% Recovery	Units	Limits	Analysis Date	Flag	
1.4.75'01 1	-	10.26.2	111	0/	70.100	06.04.2020.07.51		

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	111	%	70-130	06.04.2020 07:51	
4-Bromofluorobenzene	460-00-4	96	%	70-130	06.04.2020 07:51	

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Flagging Criteria

- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- RPD exceeded lab control limits.
- The target analyte was positively identified below the quantitation limit and above the detection limit.
- Analyte was not detected.
- 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.

ND Not Detected.

RLReporting 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

DLMethod Detection Limit

NC Non-Calculable

SMP Client Sample

BLK

Method Blank

Matrix Spike

BKS/LCS Blank Spike/Laboratory Control Sample

BKSD/LCSD Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate MS

MSD: Matrix Spike Duplicate

- + NELAC certification not offered for this compound.
- (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

QC Summary 663403

COG Operating LLC

Pygmy 27 St 1

E300P Analytical Method: Chloride by EPA 300 Prep Method: 3127913 Seg Number: Matrix: Solid Date Prep: 06.03.2020 7704725-1-BLK LCS Sample Id: 7704725-1-BKS LCSD Sample Id: 7704725-1-BSD MB Sample Id: LCS RPD MB Spike LCS Limits %RPD Units Analysis LCSD LCSD Flag **Parameter** Result Amount Result %Rec Result %Rec Limit Date Chloride <10.0 250 252 101 252 90-110 0 20 06.03.2020 20:28 101 mg/kg E300P Analytical Method: Chloride by EPA 300 Prep Method: Seq Number: 3127913 Matrix: Soil Date Prep: 06.03.2020 663402-001 S 663402-001 MS Sample Id: MSD Sample Id: 663402-001 SD Parent Sample Id: Parent Spike MS MS MSD MSD Limits %RPD RPD Units Analysis **Parameter** Flag Result Amount Result %Rec Result %Rec Limit Date 20 06.03.2020 20:49 Chloride 371 201 559 94 560 94 90-110 0 mg/kg E300P Analytical Method: Chloride by EPA 300 Prep Method: 3127913 Seq Number: Matrix: Soil Date Prep: 06.03.2020 MS Sample Id: 663403-001 S MSD Sample Id: 663403-001 SD Parent Sample Id: 663403-001 Spike **RPD Parent** MS MS %RPD Units MSD **MSD** Limite Analysis Flag **Parameter** Result Result Limit Date Amount %Rec Result %Rec Chloride 0 20 06.03.2020 22:27 <10.0 200 196 98 196 98 90-110 mg/kg SW8015P Analytical Method: TPH By SW8015 Mod Prep Method: 3127957 Matrix: Solid Seq Number: Date Prep: 06.03.2020 MB Sample Id: 7704754-1-BLK LCS Sample Id: 7704754-1-BKS LCSD Sample Id: 7704754-1-BSD RPD MB Spike LCS LCS LCSD LCSD Limits %RPD Units Analysis Flag **Parameter** Result Limit Date Result Amount %Rec %Rec Result 06.03.2020 13:02 971 97 907 91 35 Gasoline Range Hydrocarbons < 50.0 1000 70-135 7 mg/kg 06.03.2020 13:02 1020 102 1010 101 70-135 35 Diesel Range Organics < 50.0 1000 1 mg/kg LCS MBMB LCS LCSD Limits Units Analysis LCSD **Surrogate** %Rec %Rec Flag Flag Date Flag %Rec 06.03.2020 13:02 1-Chlorooctane 93 117 110 70-135 % 06.03.2020 13:02 o-Terphenyl 98 108 108 70-135 % SW8015P Analytical Method: TPH By SW8015 Mod Prep Method: Seq Number: 3127951 Matrix: Solid Date Prep: 06.03.2020 LCS Sample Id: 7704753-1-BKS LCSD Sample Id: 7704753-1-BSD MB Sample Id: 7704753-1-BLK MB Spike LCS LCS %RPD RPD Units Analysis LCSD LCSD Limits Flag **Parameter** Limit Result Amount Result %Rec Date Result %Rec 06.03.2020 13:02 Gasoline Range Hydrocarbons 20 1000 794 79 973 97 70-135 35 mg/kg < 50.0 06.03.2020 13:02 81 1000 70-135 Diesel Range Organics < 50.0 1000 814 100 21 35 mg/kg

MS/MSD Percent Recovery Relative Percent Difference LCS/LCSD Recovery Log Difference

Surrogate

o-Terphenyl

1-Chlorooctane

[D] = 100*(C-A) / B RPD = 200* | (C-E) / (C+E) | [D] = 100 * (C) / [B]

MB

Flag

MB

%Rec

72

72

[D] = 100 * (C) / [B] Log Diff. = Log(Sample Duplicate) - Log(Original Sample) LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result

= MSD/LCSD Result

LCSD

Flag

LCSD

%Rec

132

102

MS = Matrix Spike B = Spike Added D = MSD/LCSD % Rec

Analysis

Date

06.03.2020 13:02

06.03.2020 13:02

Units

%

%

LCS

%Rec

107

97

LCS

Flag

Limits

70-135

70-135

QC Summary 663403



COG Operating LLC

Pygmy 27 St 1

Analytical Method: TPH By SW8015 Mod

Seq Number:

3127957

Matrix: Solid

SW8015P Prep Method:

> 06.03.2020 Date Prep:

MB Sample Id: 7704754-1-BLK

MB

Parameter

Result

Units

Analysis Date

Flag

Motor Oil Range Hydrocarbons (MRO) < 50.0 06.03.2020 12:41 mg/kg

Analytical Method: TPH By SW8015 Mod

SW8015P Prep Method:

Seq Number: 3127951 Matrix: Solid

Date Prep: 06.03.2020

MB Sample Id: 7704753-1-BLK

Parameter

MB Result Units

Analysis Flag Date

Motor Oil Range Hydrocarbons (MRO) 06.03.2020 12:41 < 50.0 mg/kg

Analytical Method: TPH By SW8015 Mod

Prep Method:

SW8015P

Seq Number:

3127957

Matrix: Soil

Date Prep:

06.03.2020

Parent Sample Id:

663293-001

MS Sample Id: 663293-001 S

MSD Sample Id: 663293-001 SD

Spike %RPD **RPD Parent** MS MS Units MSD **MSD** Limits Analysis Flag **Parameter** Result Result %Rec Limit Date Amount Result %Rec Gasoline Range Hydrocarbons < 50.1 1000 1040 104 1020 2 35 06.03.2020 15:58 102 70-135 mg/kg Diesel Range Organics 94.1 1000 1200 111 1190 110 70-135 1 35 mg/kg 06.03.2020 15:58

MS MS **MSD** Limits Units Analysis MSD **Surrogate** Flag Flag %Rec %Rec Date 06.03.2020 15:58 1-Chlorooctane 115 116 70-135 % o-Terphenyl 115 118 70-135 % 06.03.2020 15:58

Analytical Method: TPH By SW8015 Mod

3127951

Matrix: Soil

Prep Method:

SW8015P

Seq Number:

Date Prep:

06.03.2020

663367-001 S MS Sample Id: Parent Sample Id: 663367-001

MSD Sample Id: 663367-001 SD

Flag

%RPD RPD **Parent** Spike MS MS **MSD MSD** Limits Units Analysis **Parameter** Result %Rec Limit Date Result Amount Result %Rec 35 06.03.2020 15:58 Gasoline Range Hydrocarbons < 50.0 1000 1190 119 1220 122 70-135 2 mg/kg 70-135 06.03.2020 15:58 109 1090 0 Diesel Range Organics < 50.0 1000 1090 109 35 mg/kg

MS MS **MSD** Limits Units Analysis **MSD Surrogate** %Rec Flag %Rec Flag Date 06.03.2020 15:58 125 1-Chlorooctane 127 70-135 % 06.03.2020 15:58 o-Terphenyl 112 113 70-135 %

Seq Number:

MB Sample Id:

Parent Sample Id:

QC Summary 663403



COG Operating LLC

Pygmy 27 St 1

Analytical Method: BTEX by EPA 8021B

3127952 Matrix: Solid

SW5035A Prep Method:

Date Prep: 06.03.2020

LCS Sample Id: 7704745-1-BKS 7704745-1-BLK LCSD Sample Id: 7704745-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	< 0.00200	0.100	0.108	108	0.108	108	70-130	0	35	mg/kg	06.04.2020 01:24	
Toluene	< 0.00200	0.100	0.101	101	0.100	100	70-130	1	35	mg/kg	06.04.2020 01:24	
Ethylbenzene	< 0.00200	0.100	0.0946	95	0.0911	91	71-129	4	35	mg/kg	06.04.2020 01:24	
m,p-Xylenes	< 0.00400	0.200	0.193	97	0.185	93	70-135	4	35	mg/kg	06.04.2020 01:24	
o-Xylene	< 0.00200	0.100	0.0986	99	0.0949	95	71-133	4	35	mg/kg	06.04.2020 01:24	
Surrogate	MB %Rec	MB Flag			LCS Flag	LCSI %Re			imits	Units	Analysis Date	
1,4-Difluorobenzene	108		1	08		109		70	-130	%	06.04.2020 01:24	
4-Bromofluorobenzene	94		9	1		91		70	-130	%	06.04.2020 01:24	

Analytical Method: BTEX by EPA 8021B

Seq Number: 3127952

663402-001

Matrix: Soil

SW5035A Prep Method:

Date Prep: 06.03.2020

MSD Sample Id: 663402-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	< 0.00201	0.101	0.105	104	0.103	104	70-130	2	35	mg/kg	06.04.2020 02:04	
Toluene	< 0.00201	0.101	0.0993	98	0.0976	98	70-130	2	35	mg/kg	06.04.2020 02:04	
Ethylbenzene	< 0.00201	0.101	0.0936	93	0.0911	92	71-129	3	35	mg/kg	06.04.2020 02:04	
m,p-Xylenes	< 0.00402	0.201	0.191	95	0.188	95	70-135	2	35	mg/kg	06.04.2020 02:04	
o-Xylene	< 0.00201	0.101	0.0965	96	0.0899	91	71-133	7	35	mg/kg	06.04.2020 02:04	

MS Sample Id: 663402-001 S

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		108		70-130	%	06.04.2020 02:04
4-Bromofluorobenzene	93		90		70-130	%	06.04.2020 02:04

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334 Chain of Custody

Phoenix,AZ (480) 355-0900 Atlanta,GA (770) 449-8800 Tampa,FL (813) 620-2000 West Palm Beach, FL (561) 689-6701 Midland,TX (432) 704-5440 EL Paso,TX (915) 585-3443 Lubbock,TX (806) 794-1296 Craslbad, NM (432) 704-5440

5 helden 006

Hitchcok

Bill to: (if different

Work Order No:

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐

Work Order Comments

www.xenco.com

Page

of

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Maria	Relinquished by: (Signature)	Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.	Total 200.7 / 6010 Circle Method(s) a				W-3	2-13	1-MS	Sample Identification	Sample Custody Seals:	Cooler Custody Seals:	Received Intact:	Temperature (°C):	SAMPLE RECEIPT	PO#	Sampler's Name:	Project Location	Project Number:	Project Name:	Phone:	City, State ZIP:	Address:	Company Name:
$j_{\bar{t}}$	Signature)	cument and relinquist ble only for the cost o ge of \$75.00 will be ap	otal 200.7 / 6010 200.8 / 6020: Circle Method(s) and Metal(s) to be analyzed							ification	Seals: Yes No	Seals: Yes (No	(Fes)	(°c): 3.8						PYOMY				006
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40	Received b	nples constitutes and shall not assum					613/201	6/3/20	6/3/2	Date Sampled	Total (Correct	1	(Yes No	Quote #:				5+, [
	Received by: (Signature)	a valid purchase one any responsible arge of \$5 for each	8RCRA 13PPM Texas 1 TCLP / SPLP 6010: 8RCRA				2:34	12:32 1	12:30	Time Sampled	Total Containers:	Correction Factor:	TNMO 07	Thermometer ID	Wet ice:		Due Date:	Rush:	Routine	Turn	Email:			
	е)	order from client Ility for any losse h sample submitt	13PPM Texas 11 P 6010: 8RCRA 9				N/A	V/A	N/k	Depth	W	2.0-	7	(Yes No		te:	MANA		Turn Around		City, State ZIP:	Ado	Company Name:
6 3 20	D	company to s or expens ted to Xence					-	-	_	Numb	er o	f Co	nta	iner	s				Code	Draw		e ZIP:	Address:	Name:
1	Date/Time	Xenco, its ses incurred o, but not a	Al Sb As Ba Be b As Ba Be Cd	H			X	X	X	TP	H													
6210 2	w	affiliates an i by the clien nalyzed. The	Ba Be I 3e Cd C				4	X	×	ch	10	ri	1	e	5									
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	Relinquished I	ses are due	Cr Co Pb Mn																	ANAL				
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		nd condition and the contu- gotiated.	Mn Mo N																	TS	Deliverables: EDD	eporting:L	State of	rogram: L
	Received by: (Signature)	rol	X Se		-		+	-	-				-						-		S. EDD	evel II	State of Project:	JSI/PSI
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	gnature)		Z									1/T	Zı	Z	Ŧ	I	I	Z	×		ADar I L	ADSET		Brown
			TI Sn U							Sam	rec	AT starts the	n Acetate+	NaOH: Na	HCL: HL	H2S04: H2	HNO3: HN	None: NO	MeOH: Me	Pres		THI IS		eids
	Date		. Sr Tl Sn U V Zn 1631 / 245.1 / 7470 / 7471 : Hg							Sample Comments	received by 4:00pm	TAT starts the day recevied by the lab, if	Zn Acetate+ NaOH: Zn							Preservative Codes	Cuigi.	Reporting:Level II		Program: UST/PST PRP Brownfields RRC Superfund
	Date/Time		7471 : Hg							ments	mdon	ried by the I	'n							Codes		/ei IV		errund
												ab, if												

Revised Date 022619 Rev. 2019,1

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: COG Operating LLC

Date/ Time Received: 06.03.2020 04.10.00 PM

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Work Order #: 663403

Temperature Measuring device used: T-NM-007

Sample Re	ceipt Checklist	Comments
#1 *Temperature of cooler(s)?	3.8	
#2 *Shipping container in good condition?	Yes	
#3 *Samples received on ice?	Yes	
#4 *Custody Seals intact on shipping container/ cooler?	Yes	
#5 Custody Seals intact on sample bottles?	Yes	
#6*Custody Seals Signed and dated?	Yes	
#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	Samples received in bulk containers.
#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	

Analyst:

PH Device/Lot#:

Checklist completed by:

Flizaheth McClellan

Date: 06.03.2020

Checklist reviewed by:

A promoco

Jessica Kramer

Date: 06.04.2020



Certificate of Analysis Summary 663531

COG Operating LLC, Artesia, NM

Project Name: Pygmy 27 St. 1

Project Id: Contact:

Sheldon Hitchcock

Project Location:

Lea, NM

Date Received in Lab: Thu 06.04.2020 16:25

Report Date: 06.05.2020 16:06

Project Manager: Jessica Kramer

	Lab Id:	663531-0	01	663531-0	02	663531-0	03		
Analysis Requested	Field Id:	SW-4		SW-5		SW-6			
Analysis Requesieu	Depth:								
	Matrix:	SOIL		SOIL		SOIL			
	Sampled:	06.04.2020	14:30	06.04.2020	14:32	06.04.2020	14:34		
BTEX by EPA 8021B	Extracted:	06.04.2020	17:30	06.04.2020	17:30	06.04.2020	17:30		
	Analyzed:	06.04.2020	20:43	06.04.2020	21:04	06.04.2020	22:05		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Benzene			0.00199		0.00200	< 0.00199	0.00199		
Toluene			0.00199		0.00200	< 0.00199	0.00199		
Ethylbenzene			0.00199		0.00200	< 0.00199	0.00199		
m,p-Xylenes		< 0.00398	0.00398		0.00399	< 0.00398	0.00398		
o-Xylene			0.00199		0.00200	< 0.00199	0.00199		
Total Xylenes			0.00199		0.00200	< 0.00199	0.00199		
Total BTEX		< 0.00199	0.00199	< 0.00200	0.00200	< 0.00199	0.00199		
Chloride by EPA 300	Extracted:	06.04.2020	17:00	06.04.2020	17:00	06.04.2020	17:00		
	Analyzed:	06.04.2020	19:23	06.04.2020	19:30	06.04.2020	19:37		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Chloride		134	9.98	110	9.94	106	10.1		
TPH By SW8015 Mod	Extracted:	06.04.2020	17:30	06.04.2020	17:30	06.04.2020	17:30		
	Analyzed:	06.05.2020	09:54	06.05.2020	10:14	06.05.2020	10:35		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Gasoline Range Hydrocarbons		< 50.2	50.2	< 50.2	50.2	< 50.2	50.2		
Diesel Range Organics		< 50.2	50.2	< 50.2	50.2	< 50.2	50.2		
Motor Oil Range Hydrocarbons (MRO)		< 50.2	50.2	< 50.2	50.2	< 50.2	50.2		
Total TPH		< 50.2	50.2	< 50.2	50.2	< 50.2	50.2		

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 - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Jessica Vramer

Jessica Kramer Project Manager



Analytical Report 663531

for

COG Operating LLC

Project Manager: Sheldon Hitchcock

Pygmy 27 St. 1

06.05.2020

Collected By: Client

1089 N Canal Street Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-20-32), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054) Oklahoma (2019-058), North Carolina (681), Arkansas (20-035-0)

> Xenco-Dallas (EPA Lab Code: TX01468): Texas (TX104704295-19-23), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-17)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-22)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-7)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



06.05.2020

Project Manager: Sheldon Hitchcock

COG Operating LLC 2407 Pecos Avenue Artesia, NM 88210

Reference: XENCO Report No(s): 663531

Pygmy 27 St. 1

Project Address: Lea, NM

Sheldon Hitchcock:

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) 663531. 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. 663531 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,

Jessica Kramer

Project Manager

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico



Sample Cross Reference 663531

COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id	Matrix	Date Collected Sample Depth	Lab Sample Id
SW-4	S	06.04.2020 14:30	663531-001
SW-5	S	06.04.2020 14:32	663531-002
SW-6	S	06.04.2020 14:34	663531-003

CASE NARRATIVE

Client Name: COG Operating LLC

Project Name: Pygmy 27 St. 1

Project ID: Report Date: 06.05.2020 Work Order Number(s): 663531 Date Received: 06.04.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id: **SW-4** Matrix:

Date Received:06.04.2020 16:25

Lab Sample Id: 663531-001

Soil Date Collected: 06.04.2020 14:30

Prep Method: E300P

% Moisture:

Tech:

Analyst:

MAB MAB

Analytical Method: Chloride by EPA 300

Date Prep:

06.04.2020 17:00

Basis:

Wet Weight

Seq Number: 3128048

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	134	9.98	mg/kg	06.04.2020 19:23		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

% Moisture:

Tech: Analyst: DTH DTH

Date Prep:

06.04.2020 17:30

Basis:

Wet Weight

Parameter	Cas Number	r Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	< 50.2	50.2		mg/kg	06.05.2020 09:54	U	1
Diesel Range Organics	C10C28DRO	< 50.2	50.2		mg/kg	06.05.2020 09:54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.2	50.2		mg/kg	06.05.2020 09:54	U	1
Total TPH	PHC635	<50.2	50.2		mg/kg	06.05.2020 09:54	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	108	%	70-135	06.05.2020 09:54		
o-Terphenyl		84-15-1	112	%	70-135	06.05.2020 09:54		



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id: **SW-4**

Matrix:

Date Received:06.04.2020 16:25

Lab Sample Id: 663531-001

Soil Date Collected: 06.04.2020 14:30

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A % Moisture:

Tech: Analyst: MAB

MAB

Date Prep:

06.04.2020 17:30

Basis:

Wet Weight

Seq Number: 3128056

Parameter	Cas Number	r Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199		mg/kg	06.04.2020 20:43	U	1
Toluene	108-88-3	< 0.00199	0.00199		mg/kg	06.04.2020 20:43	U	1
Ethylbenzene	100-41-4	< 0.00199	0.00199		mg/kg	06.04.2020 20:43	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398		mg/kg	06.04.2020 20:43	U	1
o-Xylene	95-47-6	< 0.00199	0.00199		mg/kg	06.04.2020 20:43	U	1
Total Xylenes	1330-20-7	< 0.00199	0.00199		mg/kg	06.04.2020 20:43	U	1
Total BTEX		< 0.00199	0.00199		mg/kg	06.04.2020 20:43	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	108	%	70-130	06.04.2020 20:43		
4-Bromofluorobenzene		460-00-4	97	%	70-130	06.04.2020 20:43		



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id: **SW-5** Matrix:

Soil

Date Received:06.04.2020 16:25

Lab Sample Id: 663531-002

Date Collected: 06.04.2020 14:32

Prep Method: E300P

% Moisture:

Date Prep:

06.04.2020 17:00

Basis:

Wet Weight

MAB Analyst: Seq Number: 3128048

Tech:

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	110	9.94	mg/kg	06.04.2020 19:30		1

Analytical Method: TPH By SW8015 Mod

Analytical Method: Chloride by EPA 300

MAB

Prep Method: SW8015P

% Moisture:

Tech: Analyst: DTH DTH

Date Prep: 06.04.2020 17:30 Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<50.2	50.2		mg/kg	06.05.2020 10:14	U	1
Diesel Range Organics	C10C28DRO	< 50.2	50.2		mg/kg	06.05.2020 10:14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.2	50.2		mg/kg	06.05.2020 10:14	U	1
Total TPH	PHC635	< 50.2	50.2		mg/kg	06.05.2020 10:14	U	1
Surrogate	C	as Number	% Recovery	Units	Limits	Analysis Date	Flag	



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id: **SW-5** Matrix:

Soil

Date Received:06.04.2020 16:25

Lab Sample Id: 663531-002

Date Collected: 06.04.2020 14:32

Prep Method: SW5035A

Analytical Method: BTEX by EPA 8021B

% Moisture:

Tech:

MAB

Analyst:

MAB

Date Prep: 06.04.2020 17:30 Basis:

Wet Weight

Parameter	Cas Number	r Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	06.04.2020 21:04	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	06.04.2020 21:04	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	06.04.2020 21:04	U	1
m,p-Xylenes	179601-23-1	< 0.00399	0.00399		mg/kg	06.04.2020 21:04	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	06.04.2020 21:04	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	06.04.2020 21:04	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	06.04.2020 21:04	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	111	%	70-130	06.04.2020 21:04		
4-Bromofluorobenzene		460-00-4	100	%	70-130	06.04.2020 21:04		



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id: **SW-6**

Analytical Method: Chloride by EPA 300

Matrix: Soil Date Received:06.04.2020 16:25

Lab Sample Id: 663531-003

Date Collected: 06.04.2020 14:34

Prep Method: E300P

% Moisture:

Tech: Analyst: MAB MAB

Date Prep:

Basis:

Wet Weight

Seq Number: 3128048

Result **Parameter** Cas Number RLUnits **Analysis Date** Dil Flag Chloride 16887-00-6 106 10.1 mg/kg 06.04.2020 19:37 1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

% Moisture:

DTH Tech: Analyst: DTH

Date Prep:

06.04.2020 17:30

06.04.2020 17:00

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<50.2	50.2		mg/kg	06.05.2020 10:35	U	1
Diesel Range Organics	C10C28DRO	< 50.2	50.2		mg/kg	06.05.2020 10:35	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.2	50.2		mg/kg	06.05.2020 10:35	U	1
Total TPH	PHC635	< 50.2	50.2		mg/kg	06.05.2020 10:35	U	1
Surrogate	C	as Number	% Recovery	Units	Limits	Analysis Date	Flag	



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id: **SW-6** Matrix:

Date Received:06.04.2020 16:25

Lab Sample Id: 663531-003

Soil Date Collected: 06.04.2020 14:34

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech:

MAB

% Moisture:

MAB Analyst:

Seq Number: 3128056

Date Prep: 06.04.2020 17:30 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199	mg/kg	06.04.2020 22:05	U	1
Toluene	108-88-3	< 0.00199	0.00199	mg/kg	06.04.2020 22:05	U	1
Ethylbenzene	100-41-4	< 0.00199	0.00199	mg/kg	06.04.2020 22:05	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398	mg/kg	06.04.2020 22:05	U	1
o-Xylene	95-47-6	< 0.00199	0.00199	mg/kg	06.04.2020 22:05	U	1
Total Xylenes	1330-20-7	< 0.00199	0.00199	mg/kg	06.04.2020 22:05	U	1
Total BTEX		< 0.00199	0.00199	mg/kg	06.04.2020 22:05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	99	%	70-130	06.04.2020 22:05	
1,4-Difluorobenzene	540-36-3	110	%	70-130	06.04.2020 22:05	



Flagging Criteria

- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- RPD exceeded lab control limits.
- The target analyte was positively identified below the quantitation limit and above the detection limit.
- Analyte was not detected.
- 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.

ND Not Detected.

RLReporting 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

DLMethod Detection Limit

NC Non-Calculable

SMP Client Sample

BLK

Method Blank

Matrix Spike

BKS/LCS Blank Spike/Laboratory Control Sample

BKSD/LCSD Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate MS

MSD: Matrix Spike Duplicate

- + NELAC certification not offered for this compound.
- * (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

Flag

Flag

Flag

QC Summary 663531



COG Operating LLC

Pygmy 27 St. 1

Analytical Method: Chloride by EPA 300

Seq Number: 3128048 Matrix: Solid

E300P Prep Method:

Date Prep: 06.04.2020

LCS Sample Id: 7704822-1-BKS LCSD Sample Id: 7704822-1-BSD MB Sample Id: 7704822-1-BLK

LCS RPD MB Spike LCS Limits %RPD Units Analysis LCSD LCSD **Parameter** Result Amount Result %Rec Result %Rec Limit Date

Chloride <10.0 250 252 101 252 90-110 0 20 06.04.2020 18:06 101 mg/kg

Analytical Method: Chloride by EPA 300

Prep Method:

E300P

Seq Number: 3128048 Matrix: Soil Date Prep: 06.04.2020 663487-001 Parent Sample Id:

663487-001 S MS Sample Id:

MSD Sample Id: 663487-001 SD

Parent Spike MS MS MSD MSD Limits %RPD RPD Units Analysis **Parameter** Flag Result Amount Result %Rec Result %Rec Limit Date

20 06.04.2020 18:27 Chloride 126 200 319 97 319 97 90-110 0 mg/kg

Analytical Method: Chloride by EPA 300

Seq Number:

3128048

Prep Method:

E300P

Matrix: Soil Date Prep: 06.04.2020 Parent Sample Id: 663532-006

MS Sample Id: 663532-006 S MSD Sample Id: 663532-006 SD

Spike **RPD Parent** MS MS %RPD Units MSD **MSD** Limite Analysis Flag **Parameter** Result Result Limit Date Amount %Rec Result %Rec Chloride 108 199 294 20 06.04.2020 20:26 93 292 93 90-110 mg/kg

Analytical Method: TPH By SW8015 Mod

Seq Number:

3128082

Matrix: Solid

SW8015P Prep Method:

Date Prep: 06.04.2020

MB Sample Id: 7704842-1-BLK LCS Sample Id: 7704842-1-BKS LCSD Sample Id: 7704842-1-BSD

RPD MB Spike LCS LCS LCSD LCSD Limits %RPD Units Analysis **Parameter** Result Limit Date Result Amount %Rec Result %Rec 06.04.2020 14:13 Gasoline Range Hydrocarbons 916 92 35 < 50.0 1000 921 92 70-135 mg/kg 06.04.2020 14:13 997 100 985 99 70-135 35 Diesel Range Organics < 50.0 1000 1 mg/kg

LCS MBMB LCS LCSD Limits Units Analysis LCSD **Surrogate** Flag %Rec %Rec Flag Flag Date %Rec 06.04.2020 14:13 1-Chlorooctane 106 111 110 70-135 % 06.04.2020 14:13 o-Terphenyl 112 121 106 70-135 %

Analytical Method: TPH By SW8015 Mod

Seq Number:

3128082

Matrix: Solid

Prep Method:

SW8015P

MB Sample Id: 7704842-1-BLK

Parameter

Motor Oil Range Hydrocarbons (MRO)

MBResult < 50.0

Date Prep: 06.04.2020

Units

Analysis

Date 06.04.2020 13:52 mg/kg

= MSD/LCSD Result

Flag

Flag

663490-002 SD

SW5035A

QC Summary 663531



Parent Sample Id:

COG Operating LLC

Pygmy 27 St. 1

663490-002 S

Analytical Method: TPH By SW8015 Mod Seg Number: 3128082

SW8015P Prep Method: Matrix: Soil Date Prep: 06.04.2020

MSD Sample Id:

Prep Method:

RPD **Parent** Spike MS MS Limits %RPD Units Analysis MSD MSD **Parameter** Result Amount Result %Rec Result %Rec Limit Date <49.9 998 1090 109 1100 35 06.04.2020 15:17 Gasoline Range Hydrocarbons 70-135 110 1 mg/kg 06.04.2020 15:17 70-135 Diesel Range Organics <49.9 998 1270 127 1260 1 35 mg/kg 126

MS Sample Id:

MSD Analysis MS MS Limits Units MSD **Surrogate** %Rec Flag Flag Date %Rec 06.04.2020 15:17 1-Chlorooctane 120 122 70-135 % 06.04.2020 15:17 o-Terphenyl 114 117 70-135 %

Analytical Method: BTEX by EPA 8021B

663490-002

3128056 Seq Number: Matrix: Solid Date Prep: 06.04.2020

7704782-1-BLK LCS Sample Id: 7704782-1-BKS LCSD Sample Id: 7704782-1-BSD MB Sample Id:

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date
Benzene	< 0.00200	0.100	0.111	111	0.119	119	70-130	7	35	mg/kg	06.04.2020 15:17
Toluene	< 0.00200	0.100	0.104	104	0.113	113	70-130	8	35	mg/kg	06.04.2020 15:17
Ethylbenzene	< 0.00200	0.100	0.0981	98	0.105	105	71-129	7	35	mg/kg	06.04.2020 15:17
m,p-Xylenes	< 0.00400	0.200	0.198	99	0.217	109	70-135	9	35	mg/kg	06.04.2020 15:17
o-Xylene	< 0.00200	0.100	0.102	102	0.109	109	71-133	7	35	mg/kg	06.04.2020 15:17

MB MB LCS LCS LCSD Limits Units Analysis LCSD **Surrogate** %Rec Flag %Rec Flag %Rec Flag Date 06.04.2020 15:17 1,4-Difluorobenzene 111 106 106 70-130 % 06.04.2020 15:17 4-Bromofluorobenzene 70-130 % 94 89 90

Analytical Method: BTEX by EPA 8021B

SW5035A Prep Method: Seg Number: 3128056 Matrix: Soil Date Prep: 06.04.2020 Parent Sample Id: 663406-002 MS Sample Id: 663406-002 S MSD Sample Id: 663406-002 SD

RPD **Parent** Spike MS MS MSD MSD Limits %RPD Units Analysis Flag **Parameter** Limit Result Date Result Amount %Rec %Rec Result 06.04.2020 15:58 < 0.00200 0.0998 0.120 120 0.128 70-130 35 Benzene 128 6 mg/kg 06.04.2020 15:58 70-130 7 35 Toluene < 0.00200 0.0998 0.113113 0.121 121 mg/kg Ethylbenzene < 0.00200 0.0998 0.106 106 0.114 114 71-129 7 35 06.04.2020 15:58 mg/kg 0.200 107 0.231 70-135 35 06.04.2020 15:58 m,p-Xylenes < 0.00399 0.214 115 8 mg/kg < 0.00200 0.0998 0.107 107 0.116 71-133 8 35 mg/kg 06.04.2020 15:58 o-Xylene 116

MS MS **MSD MSD** Limits Units Analysis Surrogate Flag Flag Date %Rec %Rec 06.04.2020 15:58 1,4-Difluorobenzene 109 108 70-130 % 06.04.2020 15:58 4-Bromofluorobenzene 91 95 70-130 %

E = MSD/LCSD Result

Page 15 of 16

Final 1.000

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: COG Operating LLC

Date/ Time Received: 06.04.2020 04.25.00 PM

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Work Order #: 663531

Temperature Measuring device used: T-NM-007

	Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?		4.2	
#2 *Shipping container in good condition?		Yes	
#3 *Samples received on ice?		Yes	
#4 *Custody Seals intact on shipping contain	ner/ cooler?	Yes	
#5 Custody Seals intact on sample bottles?		Yes	
#6*Custody Seals Signed and dated?		Yes	
#7 *Chain of Custody present?		Yes	
#8 Any missing/extra samples?		No	
#9 Chain of Custody signed when relinquish	ed/ received?	Yes	
#10 Chain of Custody agrees with sample la	bels/matrix?	Yes	
#11 Container label(s) legible and intact?		Yes	
#12 Samples in proper container/ bottle?		Yes	Samples received in bulk containers.
#13 Samples properly preserved?		Yes	
#14 Sample container(s) intact?		Yes	
#15 Sufficient sample amount for indicated t	est(s)?	Yes	
#16 All samples received within hold time?		Yes	
#17 Subcontract of sample(s)?		No	
#18 Water VOC samples have zero headspa	ace?	N/A	

Must be completed	for after-hours	delivery of	samples prior	to placing in	the refrigerator
Midal be completed	ioi aitei-iiouis	uciivei v oi	Sallibles billor	to biacilia ii	i liie i eii luelalui

Analyst:

PH Device/Lot#:

Checklist completed by:

Flizabeth McClellan

Date: <u>06.04.2020</u>

Checklist reviewed by:

of promote

Jessica Kramer

Date: 06.05.2020



Certificate of Analysis Summary 663532

COG Operating LLC, Artesia, NM

Project Name: Pygmy 27 St. 1

Project Id: Contact:

Sheldon Hitchcock

Project Location:

Lea, NM

Date Received in Lab: Thu 06.04.2020 16:25

Report Date: 06.05.2020 16:37

Project Manager: Jessica Kramer

	Lab Id:	663532-0	001	663532-0	002	663532-0	003	663532-0	004	663532-0	005	663532-0	006			
Analysis Requested	Field Id:	B-11		B-12		B-13		B-14		B-15		B-16				
Analysis Requested	Depth:	4- ft		4- ft		4- ft		4- ft		4- ft		4- ft				
	Matrix:	SOIL		SOIL		SOIL	,	SOIL		SOIL		SOIL				
	Sampled:	06.04.2020	06.04.2020 14:00		14:02	06.04.2020	14:04	06.04.2020	14:06	06.04.2020	14:08	06.04.2020	14:10			
BTEX by EPA 8021B	Extracted:	06.04.2020 17:30		7:30 06.04.2020		06.04.2020	17:30	06.04.2020	17:30	06.04.2020	17:30	06.04.2020	17:30			
	Analyzed:	06.04.2020 22:25		06.04.2020	22:46	06.04.2020	23:06	06.04.2020	23:26	06.04.2020	23:47	06.05.2020	00:07			
	Units/RL:	mg/kg	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	< 0.00202	0.00202	< 0.00200	0.00200	< 0.00198	0.00198	< 0.00202	0.00202			
Toluene		< 0.00200	0.00200	< 0.00199	0.00199	< 0.00202	0.00202	< 0.00200	0.00200	< 0.00198	0.00198	< 0.00202	0.00202			
Ethylbenzene		< 0.00200	0.00200	< 0.00199	0.00199	< 0.00202	0.00202	< 0.00200	0.00200	< 0.00198	0.00198	< 0.00202	0.00202			
m,p-Xylenes		< 0.00400	0.00400	< 0.00398	0.00398	< 0.00403	0.00403	< 0.00400	0.00400	< 0.00396	0.00396	< 0.00403	0.00403			
o-Xylene		< 0.00200	0.00200	< 0.00199	0.00199	< 0.00202	0.00202	< 0.00200	0.00200	< 0.00198	0.00198	< 0.00202	0.00202			
Total Xylenes		< 0.00200	0.00200	< 0.00199	0.00199	< 0.00202	0.00202	< 0.00200	0.00200	< 0.00198	0.00198	< 0.00202	0.00202			
Total BTEX		< 0.00200	0.00200	< 0.00199	0.00199	< 0.00202	0.00202	< 0.00200	0.00200	< 0.00198	0.00198	< 0.00202	0.00202			
Chloride by EPA 300	Extracted:	06.04.2020	17:00	06.04.2020 17:00		06.04.2020	17:00	06.04.2020	17:00	06.04.2020	06.04.2020 17:00		06.04.2020 17:00 06.04		06.04.2020 17:00	
	Analyzed:	06.04.2020	19:44	06.04.2020	19:51	06.04.2020	19:58	06.04.2020	20:05	06.04.2020	20:12 06.04.2020		20:19			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL			
Chloride		197	10.1	183	10.1	178	10.0	191	10.0	106	10.0	108	9.98			
TPH By SW8015 Mod	Extracted:	06.04.2020	17:30	06.04.2020	17:30	06.04.2020	17:30	06.04.2020	17:30	06.04.2020	17:30	06.04.2020	17:30			
	Analyzed:	06.05.2020	10:55	06.05.2020	11:16	06.05.2020	11:36	06.05.2020	11:57	06.05.2020	10:55	06.05.2020	11:16			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL			
Gasoline Range Hydrocarbons		< 50.3	50.3	< 50.2	50.2	< 50.2	50.2	<49.9	49.9	< 50.2	50.2	< 50.0	50.0			
Diesel Range Organics		<50.3	50.3	< 50.2	50.2	< 50.2	50.2	<49.9	49.9	< 50.2	50.2	< 50.0	50.0			
Motor Oil Range Hydrocarbons (MRO)		<50.3	50.3	< 50.2	50.2	< 50.2	50.2	<49.9	49.9	<50.2	50.2	< 50.0	50.0			
Total TPH		<50.3	50.3	< 50.2	50.2	< 50.2	50.2	<49.9	49.9	< 50.2	50.2	< 50.0	50.0			

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 - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Jessica Kramer

Jessica Kramer Project Manager



Certificate of Analysis Summary 663532

COG Operating LLC, Artesia, NM

Project Name: Pygmy 27 St. 1

Project Id: Contact:

Sheldon Hitchcock

Project Location: Lea, NM

Date Received in Lab: Thu 06.04.2020 16:25

Project Manager: Jessica Kramer

Report Date: 06.05.2020 16:37

	Lab Id:	663532-0	07	663532-0	08	663532-0	009		
Analysis Requested	Field Id:	B-17		B-18		B-19			
Analysis Requesicu	Depth:	4- ft		4- ft		4- ft			
	Matrix:	SOIL		SOIL		SOIL			
	Sampled:	06.04.2020	14:12	06.04.2020	14:14	06.04.2020	14:16		
BTEX by EPA 8021B	Extracted:	06.04.2020	17:30	06.04.2020	17:30	06.04.2020	17:30		
	Analyzed:	06.05.2020	00:28	06.05.2020 (00:48	06.05.2020	01:08		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Benzene		< 0.00201	0.00201	< 0.00202	0.00202	< 0.00202	0.00202		
Toluene		< 0.00201	0.00201	< 0.00202	0.00202	< 0.00202	0.00202		
Ethylbenzene		< 0.00201	0.00201	< 0.00202	0.00202	< 0.00202	0.00202		
m,p-Xylenes		< 0.00402	0.00402	< 0.00403	0.00403	< 0.00403	0.00403		
o-Xylene		< 0.00201	0.00201	< 0.00202	0.00202	< 0.00202	0.00202		
Total Xylenes		< 0.00201	0.00201	< 0.00202	0.00202	< 0.00202	0.00202		
Total BTEX		< 0.00201	0.00201	< 0.00202	0.00202	< 0.00202	0.00202		
Chloride by EPA 300	Extracted:	06.04.2020	17:00	06.04.2020	17:00	06.04.2020	17:00		
	Analyzed:	06.04.2020	20:54	06.04.2020	21:01	06.04.2020	21:08		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Chloride		111	10.0	105	10.1	105	10.0		
TPH By SW8015 Mod	Extracted:	06.04.2020	17:30	06.04.2020	17:30	06.04.2020	17:30		
	Analyzed:	alyzed: 06.05.2020 15:02 06.05.2020 11:57 06.05.2020 12:13		12:18					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Gasoline Range Hydrocarbons		< 50.1	50.1	<50.2	50.2	< 50.2	50.2		
Diesel Range Organics		< 50.1	50.1	<50.2	50.2	< 50.2	50.2		
Motor Oil Range Hydrocarbons (MRO)		< 50.1	50.1	<50.2	50.2	< 50.2	50.2		
Total TPH		< 50.1	50.1	< 50.2	50.2	< 50.2	50.2		

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 - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Jessica Vramer



Analytical Report 663532

for

COG Operating LLC

Project Manager: Sheldon Hitchcock

Pygmy 27 St. 1

06.05.2020

Collected By: Client

1089 N Canal Street Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-20-32), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054) Oklahoma (2019-058), North Carolina (681), Arkansas (20-035-0)

> Xenco-Dallas (EPA Lab Code: TX01468): Texas (TX104704295-19-23), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-17)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-22)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-7)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



06.05.2020

Project Manager: Sheldon Hitchcock

COG Operating LLC 2407 Pecos Avenue Artesia, NM 88210

Reference: XENCO Report No(s): 663532

Pygmy 27 St. 1

Project Address: Lea, NM

Sheldon Hitchcock:

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) 663532. 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. 663532 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,

Jessica Kramer

Project Manager

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Sample Cross Reference 663532

COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
B-11	S	06.04.2020 14:00	4 ft	663532-001
B-12	S	06.04.2020 14:02	4 ft	663532-002
B-13	S	06.04.2020 14:04	4 ft	663532-003
B-14	S	06.04.2020 14:06	4 ft	663532-004
B-15	S	06.04.2020 14:08	4 ft	663532-005
B-16	S	06.04.2020 14:10	4 ft	663532-006
B-17	S	06.04.2020 14:12	4 ft	663532-007
B-18	S	06.04.2020 14:14	4 ft	663532-008
B-19	S	06.04.2020 14:16	4 ft	663532-009

CASE NARRATIVE

Client Name: COG Operating LLC

Project Name: Pygmy 27 St. 1

Project ID: Report Date: 06.05.2020 Work Order Number(s): 663532 Date Received: 06.04.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id: **B-11**

Matrix:

Soil

Date Received:06.04.2020 16:25

Lab Sample Id: 663532-001

Date Collected: 06.04.2020 14:00

Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P % Moisture:

Tech: Analyst: MAB

MAB

Date Prep: 06.04.2020 17:00

Basis:

Wet Weight

Seq Number: 3128048

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	197	10.1	mg/kg	06.04.2020 19:44		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

% Moisture:

Tech:
Analyst:

DTH DTH

Date Prep: 06.04.2020 17:30

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<50.3	50.3		mg/kg	06.05.2020 10:55	U	1
Diesel Range Organics	C10C28DRO	< 50.3	50.3		mg/kg	06.05.2020 10:55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.3	50.3		mg/kg	06.05.2020 10:55	U	1
Total TPH	PHC635	<50.3	50.3		mg/kg	06.05.2020 10:55	U	1
Surrogate	(Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	1	111-85-3	110	%	70-135	06.05.2020 10:55		
o-Terphenyl	8	84-15-1	114	%	70-135	06.05.2020 10:55		



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id: B-11

Lab Sample Id: 663532-001

Soil

Matrix:

Date Received:06.04.2020 16:25

Date Collected: 06.04.2020 14:00

Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A % Moisture:

Tech:

MAB

MAB Analyst:

Date Prep: 06.04.2020 17:30 Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	06.04.2020 22:25	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	06.04.2020 22:25	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	06.04.2020 22:25	U	1
m,p-Xylenes	179601-23-1	< 0.00400	0.00400		mg/kg	06.04.2020 22:25	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	06.04.2020 22:25	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	06.04.2020 22:25	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	06.04.2020 22:25	U	1
Surrogate	C	as Number	% Recovery	Units	Limits	Analysis Date	Flag	
4.50	4.				5 0.400	0 - 0 + 2020 22 22		

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	99	%	70-130	06.04.2020 22:25	
1,4-Difluorobenzene	540-36-3	109	%	70-130	06.04.2020 22:25	



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id: B-12 Matrix:

Date Received:06.04.2020 16:25

Lab Sample Id: 663532-002

Soil Date Collected: 06.04.2020 14:02

Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech:

MAB

% Moisture:

Analyst:

MAB

Date Prep: 06.04.2020 17:00 Basis:

Wet Weight

Seq Number: 3128048

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	183	10.1	mg/kg	06.04.2020 19:51		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech:

DTH

% Moisture:

Analyst: DTH

06.04.2020 17:30 Date Prep:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	< 50.2	50.2		mg/kg	06.05.2020 11:16	U	1
Diesel Range Organics	C10C28DRO	< 50.2	50.2		mg/kg	06.05.2020 11:16	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.2	50.2		mg/kg	06.05.2020 11:16	U	1
Total TPH	PHC635	< 50.2	50.2		mg/kg	06.05.2020 11:16	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	114	%	70-135	06.05.2020 11:16		
o-Terphenyl		84-15-1	117	%	70-135	06.05.2020 11:16		



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id: B-12

Matrix: Soil

Date Received:06.04.2020 16:25

Lab Sample Id: 663532-002

Date Collected: 06.04.2020 14:02

06.04.2020 17:30

Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: Analyst: MAB MAB

Date Prep:

% Moistur

% Moisture: Basis:

Wet Weight

Parameter	Cas Number	r Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199		mg/kg	06.04.2020 22:46	U	1
Toluene	108-88-3	< 0.00199	0.00199		mg/kg	06.04.2020 22:46	U	1
Ethylbenzene	100-41-4	< 0.00199	0.00199		mg/kg	06.04.2020 22:46	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398		mg/kg	06.04.2020 22:46	U	1
o-Xylene	95-47-6	< 0.00199	0.00199		mg/kg	06.04.2020 22:46	U	1
Total Xylenes	1330-20-7	< 0.00199	0.00199		mg/kg	06.04.2020 22:46	U	1
Total BTEX		< 0.00199	0.00199		mg/kg	06.04.2020 22:46	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	112	%	70-130	06.04.2020 22:46		
4-Bromofluorobenzene		460-00-4	99	%	70-130	06.04.2020 22:46		



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id: B-13 Matrix: Soil Date Received:06.04.2020 16:25

Lab Sample Id: 663532-003

Date Collected: 06.04.2020 14:04

Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech:

MAB

% Moisture:

Analyst:

MAB

Date Prep: 06.04.2020 17:00 Basis:

Wet Weight

Seq Number: 3128048

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	178	10.0	mg/kg	06.04.2020 19:58		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

% Moisture:

Tech: Analyst: DTH DTH

06.04.2020 17:30 Date Prep:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<50.2	50.2		mg/kg	06.05.2020 11:36	U	1
Diesel Range Organics	C10C28DRO	< 50.2	50.2		mg/kg	06.05.2020 11:36	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.2	50.2		mg/kg	06.05.2020 11:36	U	1
Total TPH	PHC635	<50.2	50.2		mg/kg	06.05.2020 11:36	U	1
Surrogate	C	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	F
1-Chlorooctane	111-85-3	117	%	70-135	06.05.2020 11:36	
o-Terphenyl	84-15-1	120	%	70-135	06.05.2020 11:36	



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id: B-13 Matrix:

Date Prep:

Date Received:06.04.2020 16:25

Lab Sample Id: 663532-003

Soil Date Collected: 06.04.2020 14:04

Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech:

MAB

% Moisture:

70-130

Analyst:

MAB

06.04.2020 17:30

Basis:

06.04.2020 23:06

Wet Weight

Seq Number: 3128056

4-Bromofluorobenzene

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00202	0.00202		mg/kg	06.04.2020 23:06	U	1
Toluene	108-88-3	< 0.00202	0.00202		mg/kg	06.04.2020 23:06	U	1
Ethylbenzene	100-41-4	< 0.00202	0.00202		mg/kg	06.04.2020 23:06	U	1
m,p-Xylenes	179601-23-1	< 0.00403	0.00403		mg/kg	06.04.2020 23:06	U	1
o-Xylene	95-47-6	< 0.00202	0.00202		mg/kg	06.04.2020 23:06	U	1
Total Xylenes	1330-20-7	< 0.00202	0.00202		mg/kg	06.04.2020 23:06	U	1
Total BTEX		< 0.00202	0.00202		mg/kg	06.04.2020 23:06	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1.4-Difluorobenzene		540-36-3	110	%	70-130	06.04.2020 23:06		

97

460-00-4



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id: B-14 Matrix:

Date Received:06.04.2020 16:25

Lab Sample Id: 663532-004

Soil Date Collected: 06.04.2020 14:06

Sample Depth: 4 ft

Prep Method: E300P

Analytical Method: Chloride by EPA 300

% Moisture:

Tech: Analyst: MAB MAB

Date Prep:

06.04.2020 17:00 Basis:

Wet Weight

Seq Number: 3128048

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	191	10.0	mg/kg	06.04.2020 20:05		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

% Moisture:

Tech: Analyst: DTH DTH

Date Prep:

06.04.2020 17:30

Basis:

Wet Weight

Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
PHC610	<49.9	49.9		mg/kg	06.05.2020 11:57	U	1
C10C28DRO	<49.9	49.9		mg/kg	06.05.2020 11:57	U	1
PHCG2835	<49.9	49.9		mg/kg	06.05.2020 11:57	U	1
PHC635	<49.9	49.9		mg/kg	06.05.2020 11:57	U	1
(Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
	PHC610 C10C28DRO PHCG2835 PHC635	PHC610 <49.9 C10C28DRO <49.9 PHCG2835 <49.9	PHC610 <49.9 49.9 C10C28DRO <49.9 49.9 PHCG2835 <49.9 49.9 PHC635 <49.9 49.9	PHC610	PHC610	PHC610	PHC610

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	112	%	70-135	06.05.2020 11:57
o-Terphenyl	84-15-1	118	%	70-135	06.05.2020 11:57



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id: B-14

Matrix:

Soil

Date Received:06.04.2020 16:25

Lab Sample Id: 663532-004

Date Collected: 06.04.2020 14:06

Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech:

MAB

% Moisture:

Analyst: MAB

Date Prep:

06.04.2020 17:30

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	06.04.2020 23:26	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	06.04.2020 23:26	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	06.04.2020 23:26	U	1
m,p-Xylenes	179601-23-1	< 0.00400	0.00400		mg/kg	06.04.2020 23:26	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	06.04.2020 23:26	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	06.04.2020 23:26	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	06.04.2020 23:26	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	101	%	70-130	06.04.2020 23:26		
1,4-Difluorobenzene		540-36-3	111	%	70-130	06.04.2020 23:26		



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id: B-15 Matrix:

Soil

Date Received:06.04.2020 16:25

Lab Sample Id: 663532-005

Date Collected: 06.04.2020 14:08

Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P % Moisture:

Tech:

MAB

06.04.2020 17:00

Wet Weight

Analyst:

Parameter

MAB

Seq Number: 3128048

Date Prep:

Date Prep:

Result

Cas Number

Basis:

Flag

Dil

Analysis Date Chloride 16887-00-6 106 10.0 mg/kg 06.04.2020 20:12 1

RL

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech:

DTH

06.04.2020 17:30

Units

% Moisture:

Basis:

Wet Weight

Analyst: DTH

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	< 50.2	50.2		mg/kg	06.05.2020 10:55	U	1
Diesel Range Organics	C10C28DRO	< 50.2	50.2		mg/kg	06.05.2020 10:55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.2	50.2		mg/kg	06.05.2020 10:55	U	1
Total TPH	PHC635	< 50.2	50.2		mg/kg	06.05.2020 10:55	U	1
Surrogate	C	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	
1-Chlorooctane	111-85-3	126	%	70-135	06.05.2020 10:55	
o-Terphenyl	84-15-1	119	%	70-135	06.05.2020 10:55	



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id: B-15

Matrix: Soil

Date Prep:

Date Received:06.04.2020 16:25

Lab Sample Id: 663532-005

Date Collected: 06.04.2020 14:08

Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech:

MAB

06.04.2020 17:30

% Moisture:

Basis:

Wet Weight

Analyst: MAB

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00198	0.00198	mg/kg	06.04.2020 23:47	U	1
Toluene	108-88-3	< 0.00198	0.00198	mg/kg	06.04.2020 23:47	U	1
Ethylbenzene	100-41-4	< 0.00198	0.00198	mg/kg	06.04.2020 23:47	U	1
m,p-Xylenes	179601-23-1	< 0.00396	0.00396	mg/kg	06.04.2020 23:47	U	1
o-Xylene	95-47-6	< 0.00198	0.00198	mg/kg	06.04.2020 23:47	U	1
Total Xylenes	1330-20-7	< 0.00198	0.00198	mg/kg	06.04.2020 23:47	U	1
Total BTEX		< 0.00198	0.00198	mg/kg	06.04.2020 23:47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	99	%	70-130	06.04.2020 23:47	
1,4-Difluorobenzene	540-36-3	110	%	70-130	06.04.2020 23:47	



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id: B-16

Matrix:

Soil

Date Received:06.04.2020 16:25

Lab Sample Id: 663532-006

Date Collected: 06.04.2020 14:10

Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech:

MAB

% Moisture:

Analyst: MAB

Date Prep:

06.04.2020 17:00

Basis:

Wet Weight

Seq Number: 3128048

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	108	9.98	mg/kg	06.04.2020 20:19		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech:

DTH

% Moisture:

Analyst: DTH

Date Prep: 06.04.2020 17:30

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	< 50.0	50.0		mg/kg	06.05.2020 11:16	U	1
Diesel Range Organics	C10C28DRO	< 50.0	50.0		mg/kg	06.05.2020 11:16	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.0	50.0		mg/kg	06.05.2020 11:16	U	1
Total TPH	PHC635	< 50.0	50.0		mg/kg	06.05.2020 11:16	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	112	%	70-135	06.05.2020 11:16		
o-Terphenyl		84-15-1	106	%	70-135	06.05.2020 11:16		



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id: **B-16**

Matrix: Soil

Date Received:06.04.2020 16:25

Lab Sample Id: 663532-006

Date Collected: 06.04.2020 14:10

Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A % Moisture:

Tech: Analyst: MAB MAB

Date Prep:

06.04.2020 17:30

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00202	0.00202		mg/kg	06.05.2020 00:07	U	1
Toluene	108-88-3	< 0.00202	0.00202		mg/kg	06.05.2020 00:07	U	1
Ethylbenzene	100-41-4	< 0.00202	0.00202		mg/kg	06.05.2020 00:07	U	1
m,p-Xylenes	179601-23-1	< 0.00403	0.00403		mg/kg	06.05.2020 00:07	U	1
o-Xylene	95-47-6	< 0.00202	0.00202		mg/kg	06.05.2020 00:07	U	1
Total Xylenes	1330-20-7	< 0.00202	0.00202		mg/kg	06.05.2020 00:07	U	1
Total BTEX		< 0.00202	0.00202		mg/kg	06.05.2020 00:07	U	1
Surrogate	Ca	s Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	97	%	70-130	06.05.2020 00:07	
1,4-Difluorobenzene	540-36-3	111	%	70-130	06.05.2020 00:07	



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id: B-17

Matrix:

Date Prep:

Date Received:06.04.2020 16:25

Lab Sample Id: 663532-007

Soil Date Collected: 06.04.2020 14:12

Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P % Moisture:

Tech: Analyst: MAB

MAB

06.04.2020 17:00

Basis:

Wet Weight

Seq Number: 3128048

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	111	10.0	mg/kg	06.04.2020 20:54		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech:

DTH

% Moisture:

Analyst:

DTH

06.04.2020 17:30 Date Prep:

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	< 50.1	50.1		mg/kg	06.05.2020 15:02	U	1
Diesel Range Organics	C10C28DRO	< 50.1	50.1		mg/kg	06.05.2020 15:02	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.1	50.1		mg/kg	06.05.2020 15:02	U	1
Total TPH	PHC635	<50.1	50.1		mg/kg	06.05.2020 15:02	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	99	%	70-135	06.05.2020 15:02		
o-Terphenyl	8	84-15-1	87	%	70-135	06.05.2020 15:02		



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id: B-17

3-17

Matrix: Soil

Date Received:06.04.2020 16:25

Lab Sample Id: 663532-007

Date Collected: 06.04.2020 14:12

Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A % Moisture:

Tech: Analyst: MAB

MAB

Date Prep: 06.04.2020 17:30

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00201	0.00201		mg/kg	06.05.2020 00:28	U	1
Toluene	108-88-3	< 0.00201	0.00201		mg/kg	06.05.2020 00:28	U	1
Ethylbenzene	100-41-4	< 0.00201	0.00201		mg/kg	06.05.2020 00:28	U	1
m,p-Xylenes	179601-23-1	< 0.00402	0.00402		mg/kg	06.05.2020 00:28	U	1
o-Xylene	95-47-6	< 0.00201	0.00201		mg/kg	06.05.2020 00:28	U	1
Total Xylenes	1330-20-7	< 0.00201	0.00201		mg/kg	06.05.2020 00:28	U	1
Total BTEX		< 0.00201	0.00201		mg/kg	06.05.2020 00:28	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	110	%	70-130	06.05.2020 00:28	
4-Bromofluorobenzene	460-00-4	97	%	70-130	06.05.2020 00:28	



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id: B-18 Lab Sample Id: 663532-008

Soil Date Collected: 06.04.2020 14:14 Date Received:06.04.2020 16:25

Sample Depth: 4 ft

Prep Method: E300P

% Moisture:

Basis: Wet Weight

MAB Analyst: Seq Number: 3128048

Tech:

Result **Parameter** Cas Number RLUnits **Analysis Date** Dil Flag Chloride 16887-00-6 105 10.1 mg/kg 06.04.2020 21:01 1

Matrix:

Date Prep:

Analytical Method: TPH By SW8015 Mod

Analytical Method: Chloride by EPA 300

MAB

DTH

Analyst: DTH

Tech:

Date Prep:

06.04.2020 17:30

06.04.2020 17:00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	< 50.2	50.2		mg/kg	06.05.2020 11:57	U	1
Diesel Range Organics	C10C28DRO	< 50.2	50.2		mg/kg	06.05.2020 11:57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.2	50.2		mg/kg	06.05.2020 11:57	U	1
Total TPH	PHC635	<50.2	50.2		mg/kg	06.05.2020 11:57	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	123	%	70-135	06.05.2020 11:57		
o-Terphenyl		84-15-1	118	%	70-135	06.05.2020 11:57		



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id: B-18 Matrix: Soil Date Received:06.04.2020 16:25

Lab Sample Id: 663532-008

Date Collected: 06.04.2020 14:14

Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech:

MAB

% Moisture:

Analyst:

MAB

Date Prep: 06.04.2020 17:30 Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00202	0.00202		mg/kg	06.05.2020 00:48	U	1
Toluene	108-88-3	< 0.00202	0.00202		mg/kg	06.05.2020 00:48	U	1
Ethylbenzene	100-41-4	< 0.00202	0.00202		mg/kg	06.05.2020 00:48	U	1
m,p-Xylenes	179601-23-1	< 0.00403	0.00403		mg/kg	06.05.2020 00:48	U	1
o-Xylene	95-47-6	< 0.00202	0.00202		mg/kg	06.05.2020 00:48	U	1
Total Xylenes	1330-20-7	< 0.00202	0.00202		mg/kg	06.05.2020 00:48	U	1
Total BTEX		< 0.00202	0.00202		mg/kg	06.05.2020 00:48	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	98	%	70-130	06.05.2020 00:48		
1,4-Difluorobenzene		540-36-3	111	%	70-130	06.05.2020 00:48		



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id: B-19

Matrix: Soil Date Received:06.04.2020 16:25

Lab Sample Id: 663532-009

Date Collected: 06.04.2020 14:16

Sample Depth: 4 ft

Prep Method: E300P

Analytical Method: Chloride by EPA 300

Tech:

MAB

MAB Analyst:

Date Prep:

06.04.2020 17:00

Basis:

% Moisture:

Wet Weight

Seq Number: 3128048

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	105	10.0	mg/kg	06.04.2020 21:08		1

Analytical Method: TPH By SW8015 Mod

DTH Tech:

Analyst: DTH

06.04.2020 17:30 Date Prep:

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<50.2	50.2		mg/kg	06.05.2020 12:18	U	1
Diesel Range Organics	C10C28DRO	< 50.2	50.2		mg/kg	06.05.2020 12:18	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.2	50.2		mg/kg	06.05.2020 12:18	U	1
Total TPH	PHC635	< 50.2	50.2		mg/kg	06.05.2020 12:18	U	1
Surrogate	C	as Number	% Recovery	Units	Limits	Analysis Date	Flag	



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id: B-19 Lab Sample Id: 663532-009

Matrix:

Soil

Date Received:06.04.2020 16:25

Date Collected: 06.04.2020 14:16

Sample Depth: 4 ft

Prep Method: SW5035A

% Moisture:

Analytical Method: BTEX by EPA 8021B

Tech:

MAB

Analyst:

Seq Number: 3128056

MAB

Date Prep:

06.04.2020 17:30

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00202	0.00202	mg/kg	06.05.2020 01:08	U	1
Toluene	108-88-3	< 0.00202	0.00202	mg/kg	06.05.2020 01:08	U	1
Ethylbenzene	100-41-4	< 0.00202	0.00202	mg/kg	06.05.2020 01:08	U	1
m,p-Xylenes	179601-23-1	< 0.00403	0.00403	mg/kg	06.05.2020 01:08	U	1
o-Xylene	95-47-6	< 0.00202	0.00202	mg/kg	06.05.2020 01:08	U	1
Total Xylenes	1330-20-7	< 0.00202	0.00202	mg/kg	06.05.2020 01:08	U	1
Total BTEX		< 0.00202	0.00202	mg/kg	06.05.2020 01:08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	96	%	70-130	06.05.2020 01:08	
1,4-Difluorobenzene	540-36-3	110	%	70-130	06.05.2020 01:08	

Flagging Criteria

- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- RPD exceeded lab control limits.
- The target analyte was positively identified below the quantitation limit and above the detection limit.
- Analyte was not detected.
- 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.

ND Not Detected.

RLReporting 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

DLMethod Detection Limit

NC Non-Calculable

SMP Client Sample

BLK

Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample

BKSD/LCSD Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD

Method Duplicate/Sample Duplicate

MS

Matrix Spike

MSD: Matrix Spike Duplicate

- + 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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Flag

Flag

Flag

QC Summary 663532



COG Operating LLC

Pygmy 27 St. 1

E300P Analytical Method: Chloride by EPA 300 Prep Method: Seg Number: 3128048 Matrix: Solid Date Prep: 06.04.2020 LCS Sample Id: 7704822-1-BKS LCSD Sample Id: 7704822-1-BSD MB Sample Id: 7704822-1-BLK LCS RPD MB Spike LCS Limits %RPD Units Analysis LCSD LCSD **Parameter** Result Amount Result %Rec Result %Rec Limit Date Chloride <10.0 250 252 101 252 90-110 0 20 06.04.2020 18:06 101 mg/kg

E300P Analytical Method: Chloride by EPA 300 Prep Method: Seq Number: 3128048 Matrix: Soil Date Prep: 06.04.2020 663487-001 S 663487-001 MS Sample Id: MSD Sample Id: 663487-001 SD Parent Sample Id: Parent Spike MS MS MSD MSD Limits %RPD RPD Units Analysis **Parameter** Flag Result Amount Result %Rec Result %Rec Limit Date 06.04.2020 18:27 Chloride 126 200 319 97 319 97 90-110 0 20 mg/kg

E300P Analytical Method: Chloride by EPA 300 Prep Method: 3128048 Seq Number: Matrix: Soil Date Prep: 06.04.2020 MS Sample Id: 663532-006 S MSD Sample Id: 663532-006 SD Parent Sample Id: 663532-006 Spike **RPD Parent** MS MS %RPD Units MSD **MSD** Limite Analysis Flag **Parameter** Result Result Limit Date Amount %Rec Result %Rec Chloride 108 20 06.04.2020 20:26 199 294 93 292 93 90-110 mg/kg

SW8015P Analytical Method: TPH By SW8015 Mod Prep Method: 3128082 Matrix: Solid Seq Number: Date Prep: 06.04.2020 MB Sample Id: 7704842-1-BLK LCS Sample Id: 7704842-1-BKS LCSD Sample Id: 7704842-1-BSD RPD MB Spike LCS LCS LCSD LCSD Limits %RPD Units Analysis **Parameter** Result Limit Date Result Amount %Rec %Rec Result 06.04.2020 14:13 Gasoline Range Hydrocarbons 916 92 35

06.04.2020 14:13 997 100 985 99 70-135 35 Diesel Range Organics < 50.0 1000 1 mg/kg LCS MBMB LCS LCSD Limits Units Analysis LCSD **Surrogate** %Rec %Rec Flag Date Flag %Rec Flag 06.04.2020 14:13 1-Chlorooctane 106 111 110 70-135 % 06.04.2020 14:13 o-Terphenyl 112 121 106 70-135 %

921

92

70-135

SW8015P Analytical Method: TPH By SW8015 Mod Prep Method: Seq Number: 3128108 Matrix: Solid Date Prep: 06.04.2020 LCS Sample Id: 7704860-1-BKS LCSD Sample Id: 7704860-1-BSD MB Sample Id: 7704860-1-BLK

MB Spike LCS LCS Limits %RPD RPD Analysis LCSD LCSD Units **Parameter** Limit Result Amount Result %Rec Date Result %Rec 06.04.2020 17:22 1000 992 99 1020 70-135 35 Gasoline Range Hydrocarbons < 50.0 102 3 mg/kg 06.04.2020 17:22 70-135 Diesel Range Organics < 50.0 1000 1130 113 1100 110 3 35 mg/kg

MB MB LCS LCS LCSD Units Analysis LCSD Limits **Surrogate** Flag Date %Rec Flag %Rec %Rec Flag 06.04.2020 17:22 1-Chlorooctane 97 118 122 70-135 % 06.04.2020 17:22 o-Terphenyl 96 106 111 70-135 %

MS/MSD Percent Recovery Relative Percent Difference LCS/LCSD Recovery Log Difference

[D] = 100*(C-A) / BRPD = 200* | (C-E) / (C+E) | [D] = 100 * (C) / [B]

< 50.0

1000

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample = Parent Result = MS/LCS Result

= MSD/LCSD Result

MS = Matrix Spike B = Spike Added D = MSD/LCSD % Rec

mg/kg

QC Summary 663532



COG Operating LLC

Pygmy 27 St. 1

Analytical Method: TPH By SW8015 Mod

Seq Number:

3128082

Matrix: Solid

SW8015P Prep Method:

Units

Date Prep: 06.04.2020

MB Sample Id: 7704842-1-BLK

Parameter

MBResult

< 50.0

Analysis Date

06.04.2020 13:52 mg/kg

Analytical Method: TPH By SW8015 Mod

Seq Number:

Parameter

3128108

Matrix: Solid

MB Sample Id: 7704860-1-BLK

SW8015P Prep Method:

> Date Prep: 06.04.2020

MB Result Units

Analysis Flag Date

Flag

Motor Oil Range Hydrocarbons (MRO)

Motor Oil Range Hydrocarbons (MRO)

< 50.0

06.04.2020 13:52 mg/kg

Analytical Method: TPH By SW8015 Mod

Seq Number:

3128082

Matrix: Soil

SW8015P Prep Method:

06.04.2020

Parent Sample Id:

663490-002

MS Sample Id: 663490-002 S

MSD Sample Id: 663490-002 SD

Date Prep:

Spike %RPD **RPD** MS MS Units Parent MSD **MSD** Limits Analysis Flag **Parameter** Result Limit Date Result Amount %Rec Result %Rec Gasoline Range Hydrocarbons <49.9 998 109 35 06.04.2020 15:17 1090 1100 110 70-135 1 mg/kg Diesel Range Organics <49.9 998 1270 127 1260 70-135 35 mg/kg 06.04.2020 15:17 126 1

MS MS **MSD** Limits Units Analysis MSD **Surrogate** Flag Flag %Rec %Rec Date 06.04.2020 15:17 1-Chlorooctane 120 122 70 - 135% o-Terphenyl 114 117 70-135 % 06.04.2020 15:17

Analytical Method: TPH By SW8015 Mod

Seq Number:

3128108

Matrix: Soil

Prep Method:

SW8015P

663490-001

663490-001 S MS Sample Id:

Date Prep:

06.04.2020

Parent Sample Id:

MSD Sample Id: 663490-001 SD

Flag

%RPD RPD **Parent** Spike MS MS **MSD MSD** Limits Units Analysis **Parameter** Result %Rec Limit Date Result Amount Result %Rec 35 06.05.2020 10:14 Gasoline Range Hydrocarbons < 50.2 1000 1260 126 1300 130 70-135 3 mg/kg 06.05.2020 10:14 < 50.2 119 70-135 3 Diesel Range Organics 1000 1150 115 1190 35 mg/kg

MS MS **MSD** Limits Units Analysis **MSD Surrogate** %Rec Flag %Rec Flag Date 06.05.2020 10:14 1-Chlorooctane 130 126 70-135 % 06.05.2020 10:14 o-Terphenyl 117 123 70-135 %

QC Summary 663532



COG Operating LLC

Pygmy 27 St. 1

Analytical Method:BTEX by EPA 8021BPrep Method:SW5035ASeq Number:3128056Matrix:SolidDate Prep:06.04.2020MB Sample Id:7704782-1-BLKLCS Sample Id:7704782-1-BKSLCSD Sample Id:7704782-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	< 0.00200	0.100	0.111	111	0.119	119	70-130	7	35	mg/kg	06.04.2020 15:17	
Toluene	< 0.00200	0.100	0.104	104	0.113	113	70-130	8	35	mg/kg	06.04.2020 15:17	
Ethylbenzene	< 0.00200	0.100	0.0981	98	0.105	105	71-129	7	35	mg/kg	06.04.2020 15:17	
m,p-Xylenes	< 0.00400	0.200	0.198	99	0.217	109	70-135	9	35	mg/kg	06.04.2020 15:17	
o-Xylene	< 0.00200	0.100	0.102	102	0.109	109	71-133	7	35	mg/kg	06.04.2020 15:17	
Surrogate	MB %Rec	MB Flag			LCS Flag	LCSI %Re			imits	Units	Analysis Date	
1,4-Difluorobenzene	111		1	06		106	: 	70	-130	%	06.04.2020 15:17	
4-Bromofluorobenzene	94		8	39		90		70	-130	%	06.04.2020 15:17	

Analytical Method: BTEX by EPA 8021B

 Seq Number:
 3128056
 Matrix:
 Soil
 Date Prep:
 06.04.2020

 Parent Sample Id:
 663406-002
 MS Sample Id:
 663406-002 S
 MSD Sample Id:
 663406-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	< 0.00200	0.0998	0.120	120	0.128	128	70-130	6	35	mg/kg	06.04.2020 15:58	
Toluene	< 0.00200	0.0998	0.113	113	0.121	121	70-130	7	35	mg/kg	06.04.2020 15:58	
Ethylbenzene	< 0.00200	0.0998	0.106	106	0.114	114	71-129	7	35	mg/kg	06.04.2020 15:58	
m,p-Xylenes	< 0.00399	0.200	0.214	107	0.231	115	70-135	8	35	mg/kg	06.04.2020 15:58	
o-Xylene	< 0.00200	0.0998	0.107	107	0.116	116	71-133	8	35	mg/kg	06.04.2020 15:58	

Surrogate	MS %Rec	MS Flag	MSD %Rec	Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	109		108		70-130	%	06.04.2020 15:58
4-Bromofluorobenzene	91		95		70-130	%	06.04.2020 15:58

SW5035A

Prep Method:

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: COG Operating LLC

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

Date/ Time Received: 06.04.2020 04.25.00 PM

Temperature Measuring device used: T-NM-007

Work Order #: 663532

Sample Re	ceipt Checklist	Comments
#1 *Temperature of cooler(s)?	4.2	
#2 *Shipping container in good condition?	Yes	
#3 *Samples received on ice?	Yes	
#4 *Custody Seals intact on shipping container/ cooler?	Yes	
#5 Custody Seals intact on sample bottles?	Yes	
#6*Custody Seals Signed and dated?	Yes	
#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	Samples received in bulk containers.
#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	

٠N	lust	he	comp	leted	for	after-	hours	delive	rv of	samples	nrior to	o placino	ı in th	e refria	erator
14	ıusı	υc	CUIID	ICICU	101	aitei-	าเบนเธ	uelive		Sallibles		J DIACILIC	4 111 111	e remu	si alvi

Analyst:

PH Device/Lot#:

Checklist completed by:

Date: 06.04.2020

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 06.05.2020



Certificate of Analysis Summary 663802

COG Operating LLC, Artesia, NM

Project Name: Pygmy 27 St. 1

Project Id: Contact:

Project Location:

Sheldon Hitchcock

Lea, NM

Date Received in Lab: Tue 06.09.2020 07:45

Report Date: 06.10.2020 15:53

Project Manager: Jessica Kramer

	Lab Id:	663802-0	001	663802-0	02	663802-0	003	663802-	004	663802-0	005	663802-0	006
Analysis Requested	Field Id:	B- 20		B- 21		B- 22		B- 23		B- 24		B- 25	
Anaiysis Requesieu	Depth:												
	Matrix:	SOIL		SOIL		SOIL	,	SOIL		SOIL	,	SOIL	
	Sampled:	06.08.2020	14:30	06.08.2020	14:32	06.08.2020	14:34	06.08.2020	14:36	06.08.2020	14:38	06.08.2020	14:40
BTEX by EPA 8021B	Extracted:	06.09.2020	13:30	06.09.2020	13:30	06.09.2020	13:30	06.09.2020	13:30	06.09.2020	13:30	06.09.2020	13:30
	Analyzed:	06.09.2020	13:50	06.09.2020	14:10	06.09.2020	14:31	06.09.2020	14:51	06.09.2020	15:12	06.09.2020	15:32
	Units/RL:	mg/kg	RL										
Benzene		< 0.00202	0.00202	< 0.00202	0.00202	< 0.00202	0.00202	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00202	0.00202
Toluene		< 0.00202	0.00202	< 0.00202	0.00202	< 0.00202	0.00202	< 0.00200	0.00200	<0.00200	0.00200	< 0.00202	0.00202
Ethylbenzene		< 0.00202	0.00202	< 0.00202	0.00202	< 0.00202	0.00202	< 0.00200	0.00200	<0.00200	0.00200	< 0.00202	0.00202
m,p-Xylenes		< 0.00403	0.00403	< 0.00403	0.00403	< 0.00403	0.00403	< 0.00400	0.00400	< 0.00399	0.00399	< 0.00403	0.00403
o-Xylene		< 0.00202	0.00202	< 0.00202	0.00202	< 0.00202	0.00202	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00202	0.00202
Total Xylenes		< 0.00202	0.00202	< 0.00202	0.00202	< 0.00202	0.00202	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00202	0.00202
Total BTEX		< 0.00202	0.00202	< 0.00202	0.00202	< 0.00202	0.00202	< 0.00200	0.00200	<0.00200	0.00200	< 0.00202	0.00202
Chloride by EPA 300	Extracted:	06.09.2020	11:00	06.09.2020	11:00	06.09.2020	11:00	06.09.2020	11:00	06.09.2020	11:00	06.09.2020	11:00
	Analyzed:	06.09.2020	12:02	06.09.2020	12:19	06.09.2020	12:25	06.09.2020	12:31	06.09.2020	12:36	06.09.2020	12:54
	Units/RL:	mg/kg	RL										
Chloride		205	10.0	206	9.96	208	10.1	208	10.1	573	10.1	417	10.1
TPH By SW8015 Mod	Extracted:	06.09.2020	10:30	06.09.2020	10:30	06.09.2020	10:30	06.09.2020	10:30	06.09.2020	10:30	06.09.2020	10:30
	Analyzed:	06.09.2020	12:28	06.09.2020	13:30	06.09.2020	13:51	06.09.2020	14:11	06.09.2020	14:32	06.09.2020	14:52
	Units/RL:	mg/kg	RL										
Gasoline Range Hydrocarbons		<50.3	50.3	< 50.2	50.2	< 50.2	50.2	< 50.2	50.2	<49.8	49.8	< 50.2	50.2
Diesel Range Organics		< 50.3	50.3	< 50.2	50.2	< 50.2	50.2	< 50.2	50.2	<49.8	49.8	< 50.2	50.2
Motor Oil Range Hydrocarbons (MRO)		< 50.3	50.3	< 50.2	50.2	< 50.2	50.2	< 50.2	50.2	<49.8	49.8	< 50.2	50.2
Total TPH		< 50.3	50.3	< 50.2	50.2	< 50.2	50.2	<50.2	50.2	<49.8	49.8	< 50.2	50.2

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 - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Jessica Vramer

Jessica Kramer Project Manager



Certificate of Analysis Summary 663802

COG Operating LLC, Artesia, NM

Project Name: Pygmy 27 St. 1

Project Id: Contact:

Sheldon Hitchcock

Project Location:

Lea, NM

Date Received in Lab: Tue 06.09.2020 07:45

Report Date: 06.10.2020 15:53

Project Manager: Jessica Kramer

	Lab Id:	663802-0	07	663802-0	08		
Analysis Requested	Field Id:	B- 26		B- 27			
Analysis Requesieu	Depth:						
	Matrix:	SOIL		SOIL			
	Sampled:	06.08.2020	14:42	06.08.2020	14:44		
BTEX by EPA 8021B	Extracted:	06.09.2020	13:30	06.09.2020	13:30		
	Analyzed:	06.09.2020	15:53	** ** **	**		
	Units/RL:	mg/kg	RL	mg/kg	RL		
Benzene		< 0.00200	0.00200	< 0.00201	0.00201		
Toluene		< 0.00200	0.00200	< 0.00201	0.00201		
Ethylbenzene			0.00200	< 0.00201	0.00201		
m,p-Xylenes			0.00401	< 0.00402	0.00402		
o-Xylene			0.00200		0.00201		
Total Xylenes			0.00200	< 0.00201	0.00201		
Total BTEX		< 0.00200	0.00200	< 0.00201	0.00201		
Chloride by EPA 300	Extracted:	06.09.2020	11:00	06.09.2020	11:00		
	Analyzed:	06.09.2020	12:59	06.09.2020	13:05		
	Units/RL:	mg/kg	RL	mg/kg	RL		
Chloride		215	9.98	238	9.92		
TPH By SW8015 Mod	Extracted:	06.09.2020	10:30	06.09.2020	10:30		
	Analyzed:	06.09.2020	15:13	06.09.2020	15:33		
	Units/RL:	mg/kg	RL	mg/kg	RL		
Gasoline Range Hydrocarbons		< 50.1	50.1	< 50.1	50.1		
Diesel Range Organics		< 50.1	50.1	< 50.1	50.1		
Motor Oil Range Hydrocarbons (MRO)		< 50.1	50.1	< 50.1	50.1		
Total TPH		< 50.1	50.1	< 50.1	50.1		

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 - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Jessica Kramer
Project Manager



Analytical Report 663802

for

COG Operating LLC

Project Manager: Sheldon Hitchcock

Pygmy 27 St. 1

06.10.2020

Collected By: Client

1089 N Canal Street Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-20-32), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054) Oklahoma (2019-058), North Carolina (681), Arkansas (20-035-0)

> Xenco-Dallas (EPA Lab Code: TX01468): Texas (TX104704295-19-23), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-17)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-22)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-7)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



06.10.2020

Project Manager: Sheldon Hitchcock

COG Operating LLC 2407 Pecos Avenue Artesia, NM 88210

Reference: XENCO Report No(s): 663802

Pygmy 27 St. 1

Project Address: Lea, NM

Sheldon Hitchcock:

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) 663802. 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. 663802 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,

Jessica Kramer

Project Manager

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico



Sample Cross Reference 663802

COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
B- 20	S	06.08.2020 14:30		663802-001
B- 21	S	06.08.2020 14:32		663802-002
B- 22	S	06.08.2020 14:34		663802-003
B- 23	S	06.08.2020 14:36		663802-004
B- 24	S	06.08.2020 14:38		663802-005
B- 25	S	06.08.2020 14:40		663802-006
B- 26	S	06.08.2020 14:42		663802-007
B- 27	S	06.08.2020 14:44		663802-008

CASE NARRATIVE

Client Name: COG Operating LLC

Project Name: Pygmy 27 St. 1

Project ID: Report Date: 06.10.2020 Work Order Number(s): 663802 Date Received: 06.09.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id:

B- 20

Analytical Method: Chloride by EPA 300

Matrix:

Soil

Date Received:06.09.2020 07:45

Lab Sample Id: 663802-001

Date Collected: 06.08.2020 14:30

Prep Method: E300P

% Moisture:

Tech: Analyst: MAB

MAB

Date Prep:

06.09.2020 11:00

Basis:

Wet Weight

Seq Number: 3128439

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	205	10.0	mg/kg	06.09.2020 12:02		1

Analytical Method: TPH By SW8015 Mod

DTH

Tech:

Analyst: DTH Date Prep:

06.09.2020 10:30

Prep Method: SW8015P

% Moisture:

Basis:

Wet Weight

Parameter	Cas Number	r Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<50.3	50.3		mg/kg	06.09.2020 12:28	U	1
Diesel Range Organics	C10C28DRO	<50.3	50.3		mg/kg	06.09.2020 12:28	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.3	50.3		mg/kg	06.09.2020 12:28	U	1
Total TPH	PHC635	<50.3	50.3		mg/kg	06.09.2020 12:28	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	120	%	70-135	06.09.2020 12:28		
o-Terphenyl		84-15-1	109	%	70-135	06.09.2020 12:28		



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id:

B- 20

Matrix:

Date Received:06.09.2020 07:45

Lab Sample Id: 663802-001

Soil Date Collected: 06.08.2020 14:30

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

% Moisture:

Tech: Analyst: MAB MAB

Date Prep:

06.09.2020 13:30

Basis:

Wet Weight

Parameter	Cas Number	r Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00202	0.00202		mg/kg	06.09.2020 13:50	U	1
Toluene	108-88-3	< 0.00202	0.00202		mg/kg	06.09.2020 13:50	U	1
Ethylbenzene	100-41-4	< 0.00202	0.00202		mg/kg	06.09.2020 13:50	U	1
m,p-Xylenes	179601-23-1	< 0.00403	0.00403		mg/kg	06.09.2020 13:50	U	1
o-Xylene	95-47-6	< 0.00202	0.00202		mg/kg	06.09.2020 13:50	U	1
Total Xylenes	1330-20-7	< 0.00202	0.00202		mg/kg	06.09.2020 13:50	U	1
Total BTEX		< 0.00202	0.00202		mg/kg	06.09.2020 13:50	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	96	%	70-130	06.09.2020 13:50		
1,4-Difluorobenzene		540-36-3	111	%	70-130	06.09.2020 13:50		



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id:

B- 21

Analytical Method: Chloride by EPA 300

Matrix:

Date Received:06.09.2020 07:45

Lab Sample Id: 663802-002

Soil Date Collected: 06.08.2020 14:32

Prep Method: E300P

Tech:

MAB

MAB Analyst:

Date Prep:

06.09.2020 11:00

Basis:

% Moisture:

Wet Weight

Seq Number: 3128439

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	206	9.96	mg/kg	06.09.2020 12:19		1

Analytical Method: TPH By SW8015 Mod

DTH

Analyst: DTH

Tech:

06.09.2020 10:30 Date Prep:

Prep Method: SW8015P % Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	< 50.2	50.2		mg/kg	06.09.2020 13:30	U	1
Diesel Range Organics	C10C28DRO	< 50.2	50.2		mg/kg	06.09.2020 13:30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.2	50.2		mg/kg	06.09.2020 13:30	U	1
Total TPH	PHC635	<50.2	50.2		mg/kg	06.09.2020 13:30	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	118	%	70-135	06.09.2020 13:30		
o-Terphenyl		84-15-1	105	%	70-135	06.09.2020 13:30		



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id: B- 21

Analytical Method: BTEX by EPA 8021B

Matrix:

Date Received:06.09.2020 07:45

Lab Sample Id: 663802-002

Soil Date Collected: 06.08.2020 14:32

Prep Method: SW5035A

% Moisture:

Tech: Analyst: MAB

MAB

Date Prep:

06.09.2020 13:30

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00202	0.00202		mg/kg	06.09.2020 14:10	U	1
Toluene	108-88-3	< 0.00202	0.00202		mg/kg	06.09.2020 14:10	U	1
Ethylbenzene	100-41-4	< 0.00202	0.00202		mg/kg	06.09.2020 14:10	U	1
m,p-Xylenes	179601-23-1	< 0.00403	0.00403		mg/kg	06.09.2020 14:10	U	1
o-Xylene	95-47-6	< 0.00202	0.00202		mg/kg	06.09.2020 14:10	U	1
Total Xylenes	1330-20-7	< 0.00202	0.00202		mg/kg	06.09.2020 14:10	U	1
Total BTEX		< 0.00202	0.00202		mg/kg	06.09.2020 14:10	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	95	%	70-130	06.09.2020 14:10		
1,4-Difluorobenzene		540-36-3	110	%	70-130	06.09.2020 14:10		



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id:

B- 22

Analytical Method: Chloride by EPA 300

Matrix:

Soil

Date Received:06.09.2020 07:45

Lab Sample Id: 663802-003

Date Collected: 06.08.2020 14:34

Prep Method: E300P

% Moisture:

Tech:

MAB

MAB Analyst:

Date Prep:

06.09.2020 11:00

Basis:

Wet Weight

Seq Number: 3128439

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	208	10.1	mg/kg	06.09.2020 12:25		1

Analytical Method: TPH By SW8015 Mod

DTH

Analyst: DTH

Tech:

Date Prep:

06.09.2020 10:30

Prep Method: SW8015P

% Moisture:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	< 50.2	50.2		mg/kg	06.09.2020 13:51	U	1
Diesel Range Organics	C10C28DRO	< 50.2	50.2		mg/kg	06.09.2020 13:51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.2	50.2		mg/kg	06.09.2020 13:51	U	1
Total TPH	PHC635	< 50.2	50.2		mg/kg	06.09.2020 13:51	U	1
Surrogate	(Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	114	%	70-135	06.09.2020 13:51
o-Terphenyl	84-15-1	103	%	70-135	06.09.2020 13:51



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id:

B- 22

Matrix:

Date Received:06.09.2020 07:45

Lab Sample Id: 663802-003

Soil Date Collected: 06.08.2020 14:34

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech:

MAB

% Moisture:

MAB Analyst:

Date Prep: 06.09.2020 13:30 Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00202	0.00202		mg/kg	06.09.2020 14:31	U	1
Toluene	108-88-3	< 0.00202	0.00202		mg/kg	06.09.2020 14:31	U	1
Ethylbenzene	100-41-4	< 0.00202	0.00202		mg/kg	06.09.2020 14:31	U	1
m,p-Xylenes	179601-23-1	< 0.00403	0.00403		mg/kg	06.09.2020 14:31	U	1
o-Xylene	95-47-6	< 0.00202	0.00202		mg/kg	06.09.2020 14:31	U	1
Total Xylenes	1330-20-7	< 0.00202	0.00202		mg/kg	06.09.2020 14:31	U	1
Total BTEX		< 0.00202	0.00202		mg/kg	06.09.2020 14:31	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	96	%	70-130	06.09.2020 14:31		
1.4-Difluorobenzene		540-36-3	111	%	70-130	06.09.2020 14:31		



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id:

B-23

Matrix: Soil Date Received:06.09.2020 07:45

Lab Sample Id: 663802-004

Date Collected: 06.08.2020 14:36

Prep Method: E300P

Analysis Date

06.09.2020 12:31

Tech:

Parameter

Chloride

MAB

% Moisture:

Analyst:

MAB

Analytical Method: Chloride by EPA 300

Date Prep:

208

Result

Cas Number

16887-00-6

06.09.2020 11:00

Basis:

Wet Weight

Seq Number: 3128439

RL

10.1

Units

mg/kg

Flag

Dil

1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech:

DTH

% Moisture:

Analyst: DTH

06.09.2020 10:30 Date Prep:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	< 50.2	50.2		mg/kg	06.09.2020 14:11	U	1
Diesel Range Organics	C10C28DRO	< 50.2	50.2		mg/kg	06.09.2020 14:11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.2	50.2		mg/kg	06.09.2020 14:11	U	1
Total TPH	PHC635	< 50.2	50.2		mg/kg	06.09.2020 14:11	U	1
Surrogate	C	as Number (% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	
1-Chlorooctane	111-85-3	113	%	70-135	06.09.2020 14:11	
o-Terphenyl	84-15-1	101	%	70-135	06.09.2020 14:11	



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id:

B- 23

Analytical Method: BTEX by EPA 8021B

Matrix:

Date Received:06.09.2020 07:45

Lab Sample Id: 663802-004

Soil Date Collected: 06.08.2020 14:36

Prep Method: SW5035A

% Moisture:

Tech: Analyst: MAB

MAB

Date Prep:

06.09.2020 13:30

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	06.09.2020 14:51	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	06.09.2020 14:51	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	06.09.2020 14:51	U	1
m,p-Xylenes	179601-23-1	< 0.00400	0.00400		mg/kg	06.09.2020 14:51	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	06.09.2020 14:51	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	06.09.2020 14:51	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	06.09.2020 14:51	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	110	%	70-130	06.09.2020 14:51		
4-Bromofluorobenzene		460-00-4	96	%	70-130	06.09.2020 14:51		



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id:

B- 24

Analytical Method: Chloride by EPA 300

Matrix:

Soil

Date Received:06.09.2020 07:45

Lab Sample Id: 663802-005

Date Collected: 06.08.2020 14:38

Prep Method: E300P

% Moisture:

Tech:

MAB

Analyst:

MAB

Date Prep:

06.09.2020 11:00

Basis:

Wet Weight

Seq Number: 3128439

Result **Parameter** Cas Number RLUnits **Analysis Date** Dil Flag Chloride 16887-00-6 573 10.1 mg/kg 06.09.2020 12:36 1

Analytical Method: TPH By SW8015 Mod

111-85-3

84-15-1

Prep Method: SW8015P

06.09.2020 14:32

06.09.2020 14:32

% Moisture:

Tech:

DTH

Analyst: DTH

06.09.2020 10:30 Date Prep:

Basis:

70-135

70-135

Wet Weight

Seq Number: 3128404

1-Chlorooctane

o-Terphenyl

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<49.8	49.8		mg/kg	06.09.2020 14:32	U	1
Diesel Range Organics	C10C28DRO	<49.8	49.8		mg/kg	06.09.2020 14:32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8		mg/kg	06.09.2020 14:32	U	1
Total TPH	PHC635	<49.8	49.8		mg/kg	06.09.2020 14:32	U	1
Surrogate	(Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

117

102



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id: B- 24

Matrix:

Date Received:06.09.2020 07:45

Lab Sample Id: 663802-005

Matrix: Soil
Date Collected: 06.08.2020 14:38

Prep Method: SW5035A

06.09.2020 15:12

% Moisture:

Tech: Analyst: MAB

Analytical Method: BTEX by EPA 8021B

MAB

MAB

Date Prep: 0

06.09.2020 13:30

Basis:

70-130

Wet Weight

Seq Number: 3128511

4-Bromofluorobenzene

Parameter	Cas Number	Result	\mathbf{RL}		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	06.09.2020 15:12	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	06.09.2020 15:12	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	06.09.2020 15:12	U	1
m,p-Xylenes	179601-23-1	< 0.00399	0.00399		mg/kg	06.09.2020 15:12	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	06.09.2020 15:12	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	06.09.2020 15:12	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	06.09.2020 15:12	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	112	%	70-130	06.09.2020 15:12		

98

460-00-4



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id:

B- 25

Matrix:

Date Received:06.09.2020 07:45

Lab Sample Id: 663802-006

Soil Date Collected: 06.08.2020 14:40

Prep Method: E300P

% Moisture:

Tech:

MAB

Analytical Method: Chloride by EPA 300

MAB Analyst:

Date Prep:

06.09.2020 11:00

Basis:

Wet Weight

Seq Number: 3128439

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	417	10.1	mg/kg	06.09.2020 12:54		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

% Moisture:

Tech: Analyst: DTH DTH

Date Prep:

06.09.2020 10:30

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<50.2	50.2		mg/kg	06.09.2020 14:52	U	1
Diesel Range Organics	C10C28DRO	< 50.2	50.2		mg/kg	06.09.2020 14:52	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.2	50.2		mg/kg	06.09.2020 14:52	U	1
Total TPH	PHC635	<50.2	50.2		mg/kg	06.09.2020 14:52	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	114	%	70-135	06.09.2020 14:52		
o-Terphenyl		84-15-1	101	%	70-135	06.09.2020 14:52		



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id:

B- 25

Matrix:

Soil

Date Received:06.09.2020 07:45

Lab Sample Id: 663802-006

Date Collected: 06.08.2020 14:40

% Moisture:

Prep Method: SW5035A

Tech: Analyst: MAB

MAB

Analytical Method: BTEX by EPA 8021B

Date Prep:

06.09.2020 13:30

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00202	0.00202		mg/kg	06.09.2020 15:32	U	1
Toluene	108-88-3	< 0.00202	0.00202		mg/kg	06.09.2020 15:32	U	1
Ethylbenzene	100-41-4	< 0.00202	0.00202		mg/kg	06.09.2020 15:32	U	1
m,p-Xylenes	179601-23-1	< 0.00403	0.00403		mg/kg	06.09.2020 15:32	U	1
o-Xylene	95-47-6	< 0.00202	0.00202		mg/kg	06.09.2020 15:32	U	1
Total Xylenes	1330-20-7	< 0.00202	0.00202		mg/kg	06.09.2020 15:32	U	1
Total BTEX		< 0.00202	0.00202		mg/kg	06.09.2020 15:32	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	96	%	70-130	06.09.2020 15:32		
1,4-Difluorobenzene		540-36-3	108	%	70-130	06.09.2020 15:32		



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id: B- 26

Matrix:

Soil

Date Received:06.09.2020 07:45

Lab Sample Id: 663802-007

Date Collected: 06.08.2020 14:42

Prep Method: E300P

Tech:

Analytical Method: Chloride by EPA 300

MAB

% Moisture:

Analyst:

MAB

Date Prep:

06.09.2020 11:00

Basis:

Wet Weight

Seq Number: 3128439

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	215	9.98	mg/kg	06.09.2020 12:59		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

% Moisture:

Tech: Analyst: DTH DTH

06.09.2020 10:30 Date Prep:

Basis:

Wet Weight

Parameter	Cas Number	r Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	< 50.1	50.1		mg/kg	06.09.2020 15:13	U	1
Diesel Range Organics	C10C28DRO	< 50.1	50.1		mg/kg	06.09.2020 15:13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.1	50.1		mg/kg	06.09.2020 15:13	U	1
Total TPH	PHC635	<50.1	50.1		mg/kg	06.09.2020 15:13	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	116	%	70-135	06.09.2020 15:13		
o-Terphenyl		84-15-1	103	%	70-135	06.09.2020 15:13		



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id:

B- 26

Matrix:

Date Received:06.09.2020 07:45

Lab Sample Id: 663802-007

Soil Date Collected: 06.08.2020 14:42

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech:

MAB

% Moisture:

Analyst:

MAB

Date Prep: 06.09.2020 13:30 Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	06.09.2020 15:53	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	06.09.2020 15:53	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	06.09.2020 15:53	U	1
m,p-Xylenes	179601-23-1	< 0.00401	0.00401		mg/kg	06.09.2020 15:53	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	06.09.2020 15:53	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	06.09.2020 15:53	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	06.09.2020 15:53	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	110	%	70-130	06.09.2020 15:53		
4-Bromofluorobenzene		460-00-4	99	%	70-130	06.09.2020 15:53		



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id: B- 27

Matrix:

Soil

Date Received:06.09.2020 07:45

Lab Sample Id: 663802-008

Date Collected: 06.08.2020 14:44

Prep Method: E300P

% Moisture:

Tech: MAB

MAB MAB

Analytical Method: Chloride by EPA 300

Date Prep:

06.09.2020 11:00

Basis:

Wet Weight

Seq Number: 3128439

Analyst:

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	238	9.92	mg/kg	06.09.2020 13:05		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

% Moisture:

Tech: Analyst: DTH DTH

Date Prep: 06.09.2020 10:30

Basis:

Wet Weight

Parameter	Cas Number	r Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	< 50.1	50.1		mg/kg	06.09.2020 15:33	U	1
Diesel Range Organics	C10C28DRO	< 50.1	50.1		mg/kg	06.09.2020 15:33	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.1	50.1		mg/kg	06.09.2020 15:33	U	1
Total TPH	PHC635	<50.1	50.1		mg/kg	06.09.2020 15:33	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	118	%	70-135	06.09.2020 15:33		
o-Terphenyl		84-15-1	105	%	70-135	06.09.2020 15:33		



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id:

B- 27

Analytical Method: BTEX by EPA 8021B

Matrix:

Date Received:06.09.2020 07:45

Lab Sample Id: 663802-008

Soil Date Collected: 06.08.2020 14:44

Prep Method: SW5035A

% Moisture:

Tech: Analyst: MAB

MAB

Date Prep:

06.09.2020 13:30

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00201	0.00201		mg/kg	06.09.2020 13:29	U	1
Toluene	108-88-3	< 0.00201	0.00201		mg/kg	06.09.2020 13:29	U	1
Ethylbenzene	100-41-4	< 0.00201	0.00201		mg/kg	06.09.2020 13:29	U	1
m,p-Xylenes	179601-23-1	< 0.00402	0.00402		mg/kg	06.09.2020 13:29	U	1
o-Xylene	95-47-6	< 0.00201	0.00201		mg/kg	06.09.2020 13:29	U	1
Total Xylenes	1330-20-7	< 0.00201	0.00201		mg/kg	06.09.2020 13:29	U	1
Total BTEX		< 0.00201	0.00201		mg/kg	06.09.2020 13:29	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	100	%	70-130	06.09.2020 13:29		
1,4-Difluorobenzene		540-36-3	110	%	70-130	06.09.2020 13:29		



Flagging Criteria

- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- RPD exceeded lab control limits.
- The target analyte was positively identified below the quantitation limit and above the detection limit.
- Analyte was not detected.
- 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.

ND Not Detected.

RLReporting 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

DLMethod Detection Limit

NC Non-Calculable

SMP Client Sample

BLK

Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample

BKSD/LCSD Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD

Method Duplicate/Sample Duplicate

MS

Matrix Spike

MSD: Matrix Spike Duplicate

- + NELAC certification not offered for this compound.
- (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

QC Summary 663802



COG Operating LLC

Pygmy 27 St. 1

Analytical Method: Chloride by EPA 300

Seq Number: 3128439

7705093-1-BLK

Matrix: Solid LCS Sample Id: 7705093-1-BKS

E300P Prep Method:

Date Prep: 06.09.2020 LCSD Sample Id: 7705093-1-BSD

LCS RPD MB Spike LCS Limits %RPD LCSD LCSD **Parameter**

387

MB Sample Id:

Result %Rec %Rec

Units Limit

Analysis Date

Flag

Result Amount Result Chloride <10.0 250 251 100 253 90-110 20 06.09.2020 11:50 101 1 mg/kg

Analytical Method: Chloride by EPA 300

Seq Number:

3128439

Matrix: Soil

Prep Method: Date Prep: 06.09.2020

20

E300P

Parent Sample Id:

663802-001

663802-001 S MS Sample Id:

MSD Sample Id: 663802-001 SD

Parent Spike MS MS MSD MSD Limits %RPD RPD Units Analysis **Parameter** Result Amount Result %Rec Result %Rec Limit

388

257

1060

Chloride

205 201 91

91

90-110 0

Flag Date

Analytical Method: Chloride by EPA 300

Seq Number:

3128439

Matrix: Soil

0

2

E300P

Prep Method: Date Prep: 06.09.2020

mg/kg

Parent Sample Id:

663803-003

MS Sample Id: 663803-003 S

95

MSD Sample Id: 663803-003 SD

06.09.2020 11:47

06.09.2020 12:07

Spike **RPD Parent** MS MS %RPD Units MSD **MSD** Limits Analysis Flag **Parameter** Result Result Limit Date Amount %Rec Result %Rec

Chloride

66.8 200

< 50.0

1000

95

90-110

70-135

106

20 mg/kg 06.09.2020 13:28

Flag

Analytical Method: TPH By SW8015 Mod

Seq Number:

Diesel Range Organics

3128404

Matrix: Solid

1080

257

Prep Method:

35

SW8015P

Date Prep: 06.09.2020 MB Sample Id: 7705057-1-BLK LCS Sample Id: 7705057-1-BKS LCSD Sample Id: 7705057-1-BSD

RPD MB Spike LCS LCS LCSD LCSD Limits %RPD Units Analysis **Parameter** Result Limit Date Result Amount %Rec Result %Rec 06.09.2020 11:47 35 Gasoline Range Hydrocarbons < 50.0 1000 1090 109 1080 108 70-135 mg/kg 1

108

LCS MBMB LCS LCSD Limits Units Analysis LCSD **Surrogate** %Rec Flag %Rec Flag Flag Date %Rec 06.09.2020 11:47 1-Chlorooctane 104 115 129 70-135 % 06.09.2020 11:47 o-Terphenyl 92 96 94 70-135 %

Analytical Method: TPH By SW8015 Mod

Prep Method:

SW8015P

Seq Number:

3128404

Matrix: Solid MB Sample Id: 7705057-1-BLK Date Prep:

06.09.2020

Parameter

MBResult

Analysis Date

Flag

Motor Oil Range Hydrocarbons (MRO)

< 50.0

mg/kg

Units

mg/kg

06.09.2020 11:27

MS/MSD Percent Recovery Relative Percent Difference LCS/LCSD Recovery Log Difference

[D] = 100*(C-A) / BRPD = 200* | (C-E) / (C+E) | [D] = 100 * (C) / [B] Log Diff. = Log(Sample Duplicate) - Log(Original Sample) LCS = Laboratory Control Sample = Parent Result = MS/LCS Result = MSD/LCSD Result

MS = Matrix Spike B = Spike AddedD = MSD/LCSD % Rec

Flag

Flag

QC Summary 663802



COG Operating LLC

Pygmy 27 St. 1

Analytical Method: TPH By SW8015 Mod

3128404 Seq Number:

Parent Sample Id:

663802-001

Matrix: Soil MS Sample Id: 663802-001 S

SW8015P Prep Method:

Date Prep: 06.09.2020

MSD Sample Id: 663802-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	
Gasoline Range Hydrocarbons	< 50.1	1000	1060	106	1080	108	70-135	2	35	mg/kg	06.09.2020 12:49	
Diesel Range Organics	< 50.1	1000	1050	105	1090	109	70-135	4	35	mg/kg	06.09.2020 12:49	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	128		133		70-135	%	06.09.2020 12:49
o-Terphenyl	107		114		70-135	%	06.09.2020 12:49

Analytical Method: BTEX by EPA 8021B

Seq Number: 3128511

Matrix: Solid

Prep Method:

SW5035A

7705083-1-BSD

Date Prep: 06.09.2020

7705083-1-BLK LCS Sample Id: 7705083-1-BKS LCSD Sample Id: MB Sample Id:

RPD MB Spike LCS LCS LCSD LCSD Limits %RPD Units Analysis **Parameter** Result Amount Result %Rec Result %Rec Limit Date 06.09.2020 11:27 Benzene < 0.00200 0.100 0.107 107 0.107 70-130 0 35 107 mg/kg 06.09.2020 11:27 Toluene < 0.00200 0.100 0.100 100 0.101 101 70-130 1 35 mg/kg 06.09.2020 11:27 Ethylbenzene < 0.00200 0.100 0.0932 93 0.0944 94 71-129 1 35 mg/kg 0.200 70-135 06.09.2020 11:27 m,p-Xylenes < 0.00400 0.191 96 0.194 2 35 mg/kg 0.0992 71-133 06.09.2020 11:27 o-Xylene < 0.00200 0.100 0.0980 98 99 35 1 mg/kg

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	110		105		107		70-130	%	06.09.2020 11:27
4-Bromofluorobenzene	95		91		92		70-130	%	06.09.2020 11:27

Analytical Method: BTEX by EPA 8021B

Seq Number: 3128511 Parent Sample Id:

663802-001

Matrix: Soil

MS Sample Id: 663802-001 S

Prep Method:

SW5035A

Date Prep: 06.09.2020

MSD Sample Id: 663802-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	< 0.00200	0.100	0.0917	92	0.112	112	70-130	20	35	mg/kg	06.09.2020 12:49	
Toluene	< 0.00200	0.100	0.0875	88	0.106	106	70-130	19	35	mg/kg	06.09.2020 12:49	
Ethylbenzene	< 0.00200	0.100	0.0829	83	0.101	101	71-129	20	35	mg/kg	06.09.2020 12:49	
m,p-Xylenes	< 0.00401	0.200	0.173	87	0.208	104	70-135	18	35	mg/kg	06.09.2020 12:49	
o-Xylene	< 0.00200	0.100	0.0851	85	0.103	103	71-133	19	35	mg/kg	06.09.2020 12:49	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	106		108		70-130	%	06.09.2020 12:49
4-Bromofluorobenzene	96		92		70-130	%	06.09.2020 12:49

	D: 8/2/2	quisned by:	SALVA MANUS	quished by:	1 1	50			B	8	B	B	LAB #			Comments:		state) L	Py	Client Name:	0	
	Date: Time:	Date: Time:	20	Date: Time:		-27		- 24	~ 23	. 22	- 21	- 20	SAMPLE IDENTIFICATION			Xonco	Sheldon Hitchcock	CAINM	Yom Y 27 St. 1	COG-Artesia	ONCHO	e 2
ORIGINAL COPY	Received by:	Received by:		Received by:	,		2	8	2	-			DATE	1 5	2	Sampler Name:		Project#:		Site Manager:		
ОРУ			10		2.2	242		2:38	2:36			2:30	WATER							Sh		
	Date:	Date:	005/20/9/	Date:						_	•	X	HCL HNO ₃	MAIRIX	7	Sheldon Hitchcock				Sheldon Hitchcock	One Concho Center/600/Illinois Avenue/Midland, Texas Tel (432) 683-7443	
	Time:	Time:		Time:							_ †	×	ICE	METHOD	ESERVATIVE	chcock				cock	er/600/Illinois d, Texas 3-7443	
(c)		Ç,	N		-						-	2	# CONTAINE	/(G)ra								
(Circle) HAND DELIVERED	3.2°C	Sample Temperature	LAB USE ONLY		-	-					-	r	TPH 8015M BTEX 8021B Chloride		RO - DRO -	MRO)			_ _ 	n n		
ERED FEDEX				REM																ANA		
UPS	Rush Charge	RUSH: Same Day		REMARKS:																ANALYSIS REQUEST		
Tracking #:	Rush Charges Authorized Special Report Limits or TRRP Report	ne Day (4)																		QUEST		- age
	RP Report	48 hr 72 hr																				-
		hr											Hold									2

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: COG Operating LLC

Work Order #: 663802

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

Date/ Time Received: 06.09.2020 07.45.00 AM

Temperature Measuring device used: T-NM-007

	Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?		3.2	
#2 *Shipping container in good condition?		Yes	
#3 *Samples received on ice?		Yes	
#4 *Custody Seals intact on shipping conta	iner/ cooler?	Yes	
#5 Custody Seals intact on sample bottles?		Yes	
#6*Custody Seals Signed and dated?		Yes	
#7 *Chain of Custody present?		Yes	
#8 Any missing/extra samples?		No	
#9 Chain of Custody signed when relinquish	hed/ received?	Yes	
#10 Chain of Custody agrees with sample I	abels/matrix?	Yes	
#11 Container label(s) legible and intact?		Yes	
#12 Samples in proper container/ bottle?		Yes	Samples received in bulk containers.
#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 headsp	pace?	N/A	

Analyst:

PH Device/Lot#:

Checklist completed by: Elizabeth McClellan

Date: 06.09.2020

Checklist reviewed by: Jessica Vramer

Date: 06.10.2020

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



Certificate of Analysis Summary 663803

COG Operating LLC, Artesia, NM

Project Name: Pygmy 27 St. 1

Project Id: Contact:

Sheldon Hitchcock

Project Location:

Lea, NM

Date Received in Lab: Tue 06.09.2020 07:45

Report Date: 06.10.2020 15:54

Project Manager: Jessica Kramer

	Lab Id:	663803-0	01	663803-0	02	663803-0	003	663803-0	004		
Analysis Requested	Field Id:	SW-7		SW-8		SW-9		SW-10			
Anaiysis Requesiea	Depth:										
	Matrix:	SOIL		SOIL		SOIL		SOIL	,		
	Sampled:	06.08.2020	15:00	06.08.2020	15:04	06.08.2020	15:08	06.08.2020	15:15		
BTEX by EPA 8021B	Extracted:	06.09.2020	13:30	06.09.2020	13:30	06.09.2020	13:30	06.09.2020	13:30		
	Analyzed:	06.09.2020	16:33	06.09.2020	16:54	06.09.2020	17:55	06.09.2020	18:16		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Benzene		< 0.00201	0.00201	< 0.00201	0.00201	< 0.00199	0.00199	< 0.00201	0.00201		
Toluene		< 0.00201	0.00201	< 0.00201	0.00201	< 0.00199	0.00199	< 0.00201	0.00201		
Ethylbenzene		< 0.00201	0.00201	< 0.00201	0.00201	< 0.00199	0.00199	< 0.00201	0.00201		
m,p-Xylenes		< 0.00402	0.00402	< 0.00402	0.00402	< 0.00398	0.00398	< 0.00402	0.00402		
o-Xylene		< 0.00201	0.00201	< 0.00201	0.00201	< 0.00199	0.00199	< 0.00201	0.00201		
Total Xylenes		< 0.00201	0.00201	< 0.00201	0.00201	< 0.00199	0.00199	< 0.00201	0.00201		
Total BTEX		< 0.00201	0.00201	<0.00201 0.00201		< 0.00199	0.00199	< 0.00201	0.00201		
Chloride by EPA 300	Extracted:	06.09.2020	11:00	06.09.2020	11:00	06.09.2020 11:00		06.09.2020	11:00		
	Analyzed:	06.09.2020	13:11	06.09.2020	13:17	06.09.2020	13:23	06.09.2020	13:40		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Chloride		88.0	10.0	107	10.1	66.8	9.96	88.0	9.94		
TPH By SW8015 Mod	Extracted:	06.09.2020	10:30	06.09.2020	10:30	06.09.2020	10:30	06.09.2020	10:30		
	Analyzed:	06.09.2020	15:54	06.09.2020	16:15	06.09.2020	16:56	06.09.2020	17:16		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Gasoline Range Hydrocarbons		<50.3	50.3	< 50.2	50.2	< 50.1	50.1	< 50.2	50.2		
Diesel Range Organics		<50.3	50.3	< 50.2	50.2	< 50.1	50.1	< 50.2	50.2		
Motor Oil Range Hydrocarbons (MRO)		<50.3	50.3	< 50.2	50.2	< 50.1	50.1	< 50.2	50.2		
Total TPH		< 50.3	50.3	< 50.2	50.2	< 50.1	50.1	< 50.2	50.2		

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 - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Jessica Kramer

Jessica Kramer Project Manager



Analytical Report 663803

for

COG Operating LLC

Project Manager: Sheldon Hitchcock

Pygmy 27 St. 1

06.10.2020

Collected By: Client

1089 N Canal Street Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-20-32), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054) Oklahoma (2019-058), North Carolina (681), Arkansas (20-035-0)

> Xenco-Dallas (EPA Lab Code: TX01468): Texas (TX104704295-19-23), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-17)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-22)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-7)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



06.10.2020

Project Manager: Sheldon Hitchcock

COG Operating LLC 2407 Pecos Avenue Artesia, NM 88210

Reference: XENCO Report No(s): 663803

Pygmy 27 St. 1

Project Address: Lea, NM

Sheldon Hitchcock:

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) 663803. 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. 663803 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,

Jessica Kramer

Project Manager

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico



Sample Cross Reference 663803

COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id	Matrix	Date Collected Sample Depth	Lab Sample Id
SW-7	S	06.08.2020 15:00	663803-001
SW-8	S	06.08.2020 15:04	663803-002
SW-9	S	06.08.2020 15:08	663803-003
SW-10	S	06.08.2020 15:15	663803-004

CASE NARRATIVE

Client Name: COG Operating LLC

Project Name: Pygmy 27 St. 1

Project ID: Report Date: 06.10.2020 Work Order Number(s): 663803 Date Received: 06.09.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id: **SW-7** Matrix:

Date Received:06.09.2020 07:45

Lab Sample Id: 663803-001

Soil Date Collected: 06.08.2020 15:00

Prep Method: E300P

Tech:

MAB

Analytical Method: Chloride by EPA 300

% Moisture:

Analyst:

MAB

Date Prep:

06.09.2020 11:00

Basis:

Wet Weight

Seq Number: 3128439

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	88.0	10.0	mg/kg	06.09.2020 13:11		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

% Moisture:

Tech: Analyst: DTH DTH

Date Prep:

06.09.2020 10:30

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<50.3	50.3		mg/kg	06.09.2020 15:54	U	1
Diesel Range Organics	C10C28DRO	< 50.3	50.3		mg/kg	06.09.2020 15:54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.3	50.3		mg/kg	06.09.2020 15:54	U	1
Total TPH	PHC635	< 50.3	50.3		mg/kg	06.09.2020 15:54	U	1
Surrogate	C	as Number	% Recovery	Units	Limits	Analysis Date	Flag	



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id: **SW-7**

Matrix: Soil Date Received:06.09.2020 07:45

Lab Sample Id: 663803-001

Date Collected: 06.08.2020 15:00

Prep Method: SW5035A

% Moisture:

Tech:

MAB

Analytical Method: BTEX by EPA 8021B

Analyst: MAB Date Prep:

06.09.2020 13:30

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00201	0.00201		mg/kg	06.09.2020 16:33	U	1
Toluene	108-88-3	< 0.00201	0.00201		mg/kg	06.09.2020 16:33	U	1
Ethylbenzene	100-41-4	< 0.00201	0.00201		mg/kg	06.09.2020 16:33	U	1
m,p-Xylenes	179601-23-1	< 0.00402	0.00402		mg/kg	06.09.2020 16:33	U	1
o-Xylene	95-47-6	< 0.00201	0.00201		mg/kg	06.09.2020 16:33	U	1
Total Xylenes	1330-20-7	< 0.00201	0.00201		mg/kg	06.09.2020 16:33	U	1
Total BTEX		< 0.00201	0.00201		mg/kg	06.09.2020 16:33	U	1
Surrogate	(Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1.4-Diffuorobenzene	5	40-36-3	100	0/2	70-130	06 09 2020 16:33		

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	109	%	70-130	06.09.2020 16:33	
4-Bromofluorobenzene	460-00-4	99	%	70-130	06.09.2020 16:33	



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id: SW-8

Matrix:

Soil

Date Received:06.09.2020 07:45

Lab Sample Id: 663803-002

Date Collected: 06.08.2020 15:04

Prep Method: E300P

T Tep Wiet

% Moisture:

% Moisture:

Analyst: MAB Seq Number: 3128439

Tech:

Date Prep:

06.09.2020 11:00

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	107	10.1	mg/kg	06.09.2020 13:17		1

Analytical Method: TPH By SW8015 Mod

Analytical Method: Chloride by EPA 300

MAB

Prep Method: SW8015P

% Moisture:

Tech: Analyst: DTH DTH

Date Prep: 06.09.2020 10:30

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	< 50.2	50.2		mg/kg	06.09.2020 16:15	U	1
Diesel Range Organics	C10C28DRO	< 50.2	50.2		mg/kg	06.09.2020 16:15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.2	50.2		mg/kg	06.09.2020 16:15	U	1
Total TPH	PHC635	<50.2	50.2		mg/kg	06.09.2020 16:15	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	118	%	70-135	06.09.2020 16:15		
o-Terphenyl		84-15-1	104	%	70-135	06.09.2020 16:15		



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id:

SW-8

Analytical Method: BTEX by EPA 8021B

Matrix:

Soil

Date Received:06.09.2020 07:45

Lab Sample Id: 663803-002

Date Collected: 06.08.2020 15:04

% Moisture:

Prep Method: SW5035A

Tech:

MAB

MAB Analyst:

Date Prep:

06.09.2020 13:30

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00201	0.00201		mg/kg	06.09.2020 16:54	U	1
Toluene	108-88-3	< 0.00201	0.00201		mg/kg	06.09.2020 16:54	U	1
Ethylbenzene	100-41-4	< 0.00201	0.00201		mg/kg	06.09.2020 16:54	U	1
m,p-Xylenes	179601-23-1	< 0.00402	0.00402		mg/kg	06.09.2020 16:54	U	1
o-Xylene	95-47-6	< 0.00201	0.00201		mg/kg	06.09.2020 16:54	U	1
Total Xylenes	1330-20-7	< 0.00201	0.00201		mg/kg	06.09.2020 16:54	U	1
Total BTEX		< 0.00201	0.00201		mg/kg	06.09.2020 16:54	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	101	%	70-130	06.09.2020 16:54		
1,4-Difluorobenzene		540-36-3	110	%	70-130	06.09.2020 16:54		



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id: **SW-9** Matrix:

Date Received:06.09.2020 07:45

Lab Sample Id: 663803-003

Soil Date Collected: 06.08.2020 15:08

Prep Method: E300P

Analytical Method: Chloride by EPA 300

% Moisture:

Tech:

MAB MAB

Analyst: Seq Number: 3128439 Date Prep:

06.09.2020 11:00

Basis:

Wet Weight

Result **Parameter** Cas Number RLUnits **Analysis Date** Dil Flag Chloride 16887-00-6 66.8 9.96 mg/kg 06.09.2020 13:23 1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

06.09.2020 16:56

Tech:

DTH

% Moisture:

Analyst: DTH

o-Terphenyl

06.09.2020 10:30 Date Prep:

Basis:

70-135

Wet Weight

Seq Number: 3128404

Parameter	Cas Number	r Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<50.1	50.1		mg/kg	06.09.2020 16:56	U	1
Diesel Range Organics	C10C28DRO	< 50.1	50.1		mg/kg	06.09.2020 16:56	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.1	50.1		mg/kg	06.09.2020 16:56	U	1
Total TPH	PHC635	<50.1	50.1		mg/kg	06.09.2020 16:56	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	116	%	70-135	06.09.2020 16:56		

102

84-15-1



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id: SW-9

W-9

Matrix: Soil

Date Received:06.09.2020 07:45

Lab Sample Id: 663803-003

Date Collected: 06.08.2020 15:08

Prep Method: SW5035A

% Moisture:

Tech: MAB

Analyst:

MAB

Analytical Method: BTEX by EPA 8021B

Date Prep:

06.09.2020 13:30

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199		mg/kg	06.09.2020 17:55	U	1
Toluene	108-88-3	< 0.00199	0.00199		mg/kg	06.09.2020 17:55	U	1
Ethylbenzene	100-41-4	< 0.00199	0.00199		mg/kg	06.09.2020 17:55	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398		mg/kg	06.09.2020 17:55	U	1
o-Xylene	95-47-6	< 0.00199	0.00199		mg/kg	06.09.2020 17:55	U	1
Total Xylenes	1330-20-7	< 0.00199	0.00199		mg/kg	06.09.2020 17:55	U	1
Total BTEX		< 0.00199	0.00199		mg/kg	06.09.2020 17:55	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	98	%	70-130	06.09.2020 17:55		
1,4-Difluorobenzene		540-36-3	110	%	70-130	06.09.2020 17:55		



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id: SW-10

Matrix:

Soil

Date Received:06.09.2020 07:45

Lab Sample Id: 663803-004

Date Collected: 06.08.2020 15:15

Prep Method: E300P

% Moisture:

Tech: Analyst: MAB

Analytical Method: Chloride by EPA 300

MAB

Date Prep:

06.09.2020 11:00

Basis:

Wet Weight

Seq Number: 3128439

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	88.0	9.94	mg/kg	06.09.2020 13:40		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

% Moisture:

Tech:
Analyst:

DTH DTH

Date Prep:

06.09.2020 10:30

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	< 50.2	50.2		mg/kg	06.09.2020 17:16	U	1
Diesel Range Organics	C10C28DRO	< 50.2	50.2		mg/kg	06.09.2020 17:16	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.2	50.2		mg/kg	06.09.2020 17:16	U	1
Total TPH	PHC635	<50.2	50.2		mg/kg	06.09.2020 17:16	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	118	%	70-135	06.09.2020 17:16		
o-Terphenyl		84-15-1	105	%	70-135	06.09.2020 17:16		



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id: SW-10

Matrix:

Soil

Date Received:06.09.2020 07:45

Lab Sample Id: 663803-004

Date Collected: 06.08.2020 15:15

Prep Method: SW5035A

% Moisture:

Tech: Analyst: MAB MAB

Analytical Method: BTEX by EPA 8021B

Date Prep:

06.09.2020 13:30

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00201	0.00201		mg/kg	06.09.2020 18:16	U	1
Toluene	108-88-3	< 0.00201	0.00201		mg/kg	06.09.2020 18:16	U	1
Ethylbenzene	100-41-4	< 0.00201	0.00201		mg/kg	06.09.2020 18:16	U	1
m,p-Xylenes	179601-23-1	< 0.00402	0.00402		mg/kg	06.09.2020 18:16	U	1
o-Xylene	95-47-6	< 0.00201	0.00201		mg/kg	06.09.2020 18:16	U	1
Total Xylenes	1330-20-7	< 0.00201	0.00201		mg/kg	06.09.2020 18:16	U	1
Total BTEX		< 0.00201	0.00201		mg/kg	06.09.2020 18:16	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	97	%	70-130	06.09.2020 18:16		
1,4-Difluorobenzene	:	540-36-3	111	%	70-130	06.09.2020 18:16		



Flagging Criteria

- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- RPD exceeded lab control limits.
- The target analyte was positively identified below the quantitation limit and above the detection limit.
- Analyte was not detected.
- 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.

ND Not Detected.

RLReporting 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

DLMethod Detection Limit

NC Non-Calculable

SMP Client Sample

BLK

Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample

BKSD/LCSD Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate MS

Matrix Spike

MSD: Matrix Spike Duplicate

- + NELAC certification not offered for this compound.
- * (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

QC Summary 663803



COG Operating LLC

Pygmy 27 St. 1

Analytical Method: Chloride by EPA 300

Seq Number: 3128439

Matrix: Solid

LCSD

253

E300P Prep Method:

Date Prep: 06.09.2020

MB Sample Id:

7705093-1-BLK

LCS Sample Id: 7705093-1-BKS LCSD Sample Id: 7705093-1-BSD

Parameter

Chloride

MB Spike Result Amount <10.0 250

LCS LCS Result %Rec

251

LCSD Result %Rec

101

Limits %RPD

1

RPD Units Limit mg/kg Analysis Flag Date

06.09.2020 11:50

Analytical Method: Chloride by EPA 300

3128439

Matrix: Soil

100

90-110

Prep Method: Date Prep: 06.09.2020

20

RPD

E300P

Seq Number: Parent Sample Id:

663802-001

663802-001 S MS Sample Id:

MSD Sample Id:

663802-001 SD

Parameter

Chloride

Parent Spike Result Amount 205 201

MS MS Result %Rec 387 91

MSD Result 388

MSD Limits %Rec 91

90-110

%RPD Limit 20 0

Units Analysis

Flag Date 06.09.2020 12:07

Analytical Method: Chloride by EPA 300

Seq Number:

3128439

Prep Method:

0

E300P

Date Prep: 06.09.2020

Parent Sample Id:

663803-003

Matrix: Soil MS Sample Id: 663803-003 S

MSD Sample Id: 663803-003 SD

mg/kg

mg/kg

Parameter

Spike **Parent** Result Amount 66.8 200

MS MS Result %Rec 95

257

MSD Result

257

MSD %Rec 95

Limits

90-110

RPD %RPD Limit Units

Analysis Flag Date

06.09.2020 13:28

Chloride

Analytical Method: TPH By SW8015 Mod

Seq Number:

3128404

Matrix: Solid

Prep Method: Date Prep:

20

SW8015P

06.09.2020

MB Sample Id:

7705057-1-BLK

LCS Sample Id: 7705057-1-BKS LCSD Sample Id: 7705057-1-BSD

RPD MB Spike LCS LCS LCSD LCSD Limits %RPD Units Analysis **Parameter** Result Limit Date Result Amount %Rec %Rec Result 06.09.2020 11:47 Gasoline Range Hydrocarbons 35 < 50.0 1000 1090 109 1080 108 70-135 mg/kg 1 06.09.2020 11:47 70-135 2 35 Diesel Range Organics < 50.0 1000 1080 108 1060 106 mg/kg

LCS MBMB LCS LCSD Limits Units Analysis LCSD **Surrogate** %Rec Flag %Rec Flag Flag Date %Rec 06.09.2020 11:47 1-Chlorooctane 104 115 129 70-135 % 06.09.2020 11:47 o-Terphenyl 92 96 94 70-135 %

Analytical Method: TPH By SW8015 Mod

Prep Method:

SW8015P

Seq Number:

3128404

Matrix: Solid

Date Prep:

06.09.2020

Parameter

MBResult

MB Sample Id: 7705057-1-BLK

Units

Flag

Flag

Motor Oil Range Hydrocarbons (MRO)

< 50.0

mg/kg

Date 06.09.2020 11:27

Analysis

QC Summary 663803



COG Operating LLC

Pygmy 27 St. 1

Analytical Method: TPH By SW8015 Mod

Seg Number: 3128404

Parent Sample Id:

663802-001

Matrix: Soil MS Sample Id: 663802-001 S

SW8015P Prep Method:

Date Prep: 06.09.2020

MSD Sample Id: 663802-001 SD

RPD **Parent** Spike MS MS Limits %RPD Units Analysis MSD **MSD** Flag **Parameter** Result Amount Result %Rec Result %Rec Limit Date < 50.1 1000 1060 106 35 06.09.2020 12:49 Gasoline Range Hydrocarbons 1080 108 70-135 2 mg/kg

06.09.2020 12:49 Diesel Range Organics < 50.1 1000 1050 105 1090 70-135 4 35 mg/kg 109

MS MS MSD Limits Units Analysis MSD **Surrogate** Flag Flag Date %Rec %Rec 06.09.2020 12:49 1-Chlorooctane 128 133 70-135 % 06.09.2020 12:49 o-Terphenyl 107 114 70-135 %

Analytical Method: BTEX by EPA 8021B

Matrix: Solid

Prep Method:

SW5035A

Flag

Flag

3128511 Seq Number: Date Prep: 06.09.2020 LCS Sample Id: 7705083-1-BKS LCSD Sample Id: 7705083-1-BSD MB Sample Id: 7705083-1-BLK

MB Spike LCS LCS LCSD Limits %RPD **RPD** Units Analysis LCSD **Parameter** Result Amount Result %Rec Result %Rec Limit Date 06.09.2020 11:27 < 0.00200 0.100 0.107 107 0.107 70-130 0 35 Benzene 107 mg/kg 06.09.2020 11:27 Toluene < 0.00200 0.100 0.100 100 0.101 101 70-130 1 35 mg/kg 06.09.2020 11:27 Ethylbenzene 0.100 0.0932 93 0.0944 94 71-129 35 < 0.00200 1 mg/kg 06.09.2020 11:27 m,p-Xylenes < 0.00400 0.200 0.191 96 0.194 97 70-135 2 35 mg/kg 06.09.2020 11:27 < 0.00200 0.100 0.0980 98 0.0992 71-133 35 o-Xylene 99 mg/kg

Limits MB MB LCS LCS LCSD Units LCSD Analysis Surrogate %Rec Flag %Rec Flag Flag Date %Rec 06.09.2020 11:27 1,4-Difluorobenzene 110 105 107 70-130 % 06.09.2020 11:27 70-130 % 4-Bromofluorobenzene 95 91 92

Analytical Method: BTEX by EPA 8021B

Seg Number:

3128511

Matrix: Soil

Prep Method: Date Prep:

SW5035A

06.09.2020

663802-001 MS Sample Id: 663802-001 S MSD Sample Id: 663802-001 SD Parent Sample Id: **RPD**

Parent Spike MS MS MSD **MSD** Limits %RPD Units Analysis **Parameter** Limit Date Result Amount Result %Rec %Rec Result 06.09.2020 12:49 < 0.00200 0.100 0.0917 92 0.112 70-130 20 35 Benzene 112 mg/kg 06.09.2020 12:49 88 70-130 35 Toluene < 0.00200 0.100 0.0875 0.106 106 19 mg/kg Ethylbenzene < 0.00200 0.100 0.0829 83 101 71-129 20 35 06.09.2020 12:49 0.101 mg/kg 35 06.09.2020 12:49 m,p-Xylenes < 0.00401 0.200 0.173 87 0.208 104 70-135 18 mg/kg < 0.00200 0.100 0.0851 85 0.103 71-133 19 35 06.09.2020 12:49 o-Xylene 103 mg/kg

MS MS **MSD MSD** Limits Units Analysis Surrogate Flag Flag Date %Rec %Rec 06.09.2020 12:49 1,4-Difluorobenzene 106 108 70-130 % 06.09.2020 12:49 4-Bromofluorobenzene 96 92 70-130 %

tory:
Client Name: Client Name: COG-Artesia Project Location: (county., state) Leq, NM Invoice to: Sheldon Hitchcock Receiving Laboratory: Comments: Comments: SAMPLE IDENTIFICATION LAB # LAB USE
Site Manager: Project #: Sampler Name: SAMPLING
One Concho Center/600/Illinois Avenue/Midland, Texas Tel (432) 683-7443 Sheldon Hitchcock Sheldon Hitchcock PRESERVATIV MATRIX PRESERVATIV METHOD MATRIX PRESERVATIV
PRESERVATIVE PRESERVATIVE PRESERVATIVE DOMPOSITE/(G))rab
PH 8015M (GRO - DRO - MRO) EX 8021B Ioride
ANALYSIS REQUEST Circle or Specify Method No.)

Page 17 of 18

Final 1.000

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: COG Operating LLC

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

Date/ Time Received: 06.09.2020 07.45.00 AM

Temperature Measuring device used: T-NM-007

Work Order #: 663803

Sample Receipt Checklist Comments 3.2 #1 *Temperature of cooler(s)? #2 *Shipping container in good condition? Yes #3 *Samples received on ice? Yes #4 *Custody Seals intact on shipping container/ cooler? Yes #5 Custody Seals intact on sample bottles? Yes Yes #6*Custody Seals Signed and dated? #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 Samples received in bulk containers. Yes #13 Samples properly preserved? #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 N/A #18 Water VOC samples have zero headspace?

Must be	completed for	or after-hours	delivery of	samples prior	to placing in	the refrigerator
MINST DE	completed i	ui aitei-iiuuis	uciivei v Oi	Sallibles billor	lu biaciliu ili	LITE FEITIGET ALVI

Analyst:

PH Device/Lot#:

Checklist completed by: Elizabeth McClellan

Date: 06.09.2020

Checklist reviewed by: Jessica Wanner

Date: 06.10.2020



Certificate of Analysis Summary 664229

COG Operating LLC, Artesia, NM

Project Name: Pygmy 27 1St.

Project Id: Contact:

Project Location:

Sheldon Hitchcock

Lea, NM

Date Received in Lab: Thu 06.11.2020 13:40

Report Date: 06.12.2020 13:45

Project Manager: Jessica Kramer

	Lab Id:	664229-0	01	664229-0	02	664229-0	003	664229-0	004		
Analysis Requested	Field Id:	SW-11		SW-12		SW-13		SW-14			
Analysis Requesieu	Depth:										
	Matrix:	SOIL		SOIL		SOIL		SOIL			
	Sampled:	06.11.2020	10:20	06.11.2020 10:22		06.11.2020	10:24	06.11.2020	10:26		
BTEX by EPA 8021B	Extracted:	06.11.2020	17:37	06.11.2020	17:37	06.11.2020	17:37	06.12.2020	08:01		
	Analyzed:	06.12.2020	06:23	06.12.2020	06:44	06.12.2020	07:04	06.12.2020	11:50		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Benzene			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	< 0.00199	0.00199	< 0.00200	0.00200	< 0.00200	0.00200		
m,p-Xylenes		< 0.00402	0.00402	< 0.00398	0.00398	< 0.00400	0.00400	< 0.00401	0.00401		
o-Xylene			0.00201	< 0.00199	0.00199	< 0.00200	0.00200	< 0.00200	0.00200		
Total Xylenes			0.00201	< 0.00199	0.00199	< 0.00200	0.00200	< 0.00200	0.00200		
Total BTEX		< 0.00201	0.00201	< 0.00199	0.00199	< 0.00200	0.00200	< 0.00200	0.00200		
Chloride by EPA 300	Extracted:	06.11.2020	17:54	06.11.2020	17:54	06.11.2020	17:54	06.11.2020	17:54		
	Analyzed:	06.12.2020	01:37	06.12.2020	00:34	06.12.2020	00:41	06.12.2020	00:48		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Chloride		776	9.96	190	10.0	53.7	10.1	354	10.0		
TPH by SW8015 Mod	Extracted:	06.11.2020	17:20	06.11.2020	17:20	06.11.2020	17:20	06.11.2020	17:20		
	Analyzed:	06.12.2020	02:04	06.12.2020	03:05	06.12.2020	03:26	06.12.2020	03:46		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Gasoline Range Hydrocarbons (GRO)		<49.8	49.8	<49.8	49.8	< 50.2	50.2	< 50.2	50.2		
Diesel Range Organics (DRO)		<49.8	49.8	<49.8	49.8	< 50.2	50.2	< 50.2	50.2		
Motor Oil Range Hydrocarbons (MRO)		<49.8	49.8	<49.8	49.8	< 50.2	50.2	< 50.2	50.2		
Total TPH		<49.8	49.8	<49.8	49.8	< 50.2	50.2	< 50.2	50.2		

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 - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Jessica Vramer



Analytical Report 664229

for

COG Operating LLC

Project Manager: Sheldon Hitchcock

Pygmy 27 1St.

06.12.2020

Collected By: Client

1089 N Canal Street Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-20-32), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054) Oklahoma (2019-058), North Carolina (681), Arkansas (20-035-0)

> Xenco-Dallas (EPA Lab Code: TX01468): Texas (TX104704295-19-23), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-17)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-22)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-7)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



06.12.2020

Project Manager: Sheldon Hitchcock

COG Operating LLC 2407 Pecos Avenue Artesia, NM 88210

Reference: XENCO Report No(s): 664229

Pygmy 27 1St.

Project Address: Lea, NM

Sheldon Hitchcock:

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) 664229. 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. 664229 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,

Jessica Kramer

Project Manager

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico



Sample Cross Reference 664229

COG Operating LLC, Artesia, NM

Pygmy 27 1St.

Sample Id	Matrix	Date Collected Sample Depth	Lab Sample Id
SW-11	S	06.11.2020 10:20	664229-001
SW-12	S	06.11.2020 10:22	664229-002
SW-13	S	06.11.2020 10:24	664229-003
SW-14	S	06.11.2020 10:26	664229-004

CASE NARRATIVE

Client Name: COG Operating LLC

Project Name: Pygmy 27 1St.

Project ID: Report Date: 06.12.2020 Work Order Number(s): 664229 Date Received: 06.11.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



COG Operating LLC, Artesia, NM

Pygmy 27 1St.

Sample Id: **SW-11** Matrix:

Date Received:06.11.2020 13:40

Lab Sample Id: 664229-001

Soil Date Collected: 06.11.2020 10:20

Prep Method: E300P

% Moisture:

Tech:

MAB

Analytical Method: Chloride by EPA 300

Basis:

Wet Weight

Analyst:

MAB

Date Prep: 06.11.2020 17:54

Seq Number: 3128751

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	776	9.96	mg/kg	06.12.2020 01:37		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

% Moisture:

Tech: Analyst: DTH DTH

06.11.2020 17:20 Date Prep:

Basis:

Wet Weight

Parameter	Cas Numbe	r Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8		mg/kg	06.12.2020 02:04	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8		mg/kg	06.12.2020 02:04	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8		mg/kg	06.12.2020 02:04	U	1
Total TPH	PHC635	<49.8	49.8		mg/kg	06.12.2020 02:04	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	85	%	70-135	06.12.2020 02:04		
o-Terphenyl		84-15-1	79	%	70-135	06.12.2020 02:04		



COG Operating LLC, Artesia, NM

Pygmy 27 1St.

Sample Id: SW-11

Matrix:

Date Received:06.11.2020 13:40

Lab Sample Id: 664229-001

Matrix: Soil
Date Collected: 06.11.2020 10:20

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech:

MAB

% Moisture:

Analyst: MAB

Date Prep:

06.11.2020 17:37 Basis:

Wet Weight

Parameter	Cas Numbe	r Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00201	0.00201		mg/kg	06.12.2020 06:23	U	1
Toluene	108-88-3	< 0.00201	0.00201		mg/kg	06.12.2020 06:23	U	1
Ethylbenzene	100-41-4	< 0.00201	0.00201		mg/kg	06.12.2020 06:23	U	1
m,p-Xylenes	179601-23-1	< 0.00402	0.00402		mg/kg	06.12.2020 06:23	U	1
o-Xylene	95-47-6	< 0.00201	0.00201		mg/kg	06.12.2020 06:23	U	1
Total Xylenes	1330-20-7	< 0.00201	0.00201		mg/kg	06.12.2020 06:23	U	1
Total BTEX		< 0.00201	0.00201		mg/kg	06.12.2020 06:23	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	110	%	70-130	06.12.2020 06:23		
4-Bromofluorobenzene		460-00-4	100	%	70-130	06.12.2020 06:23		



COG Operating LLC, Artesia, NM

Pygmy 27 1St.

Sample Id: SW-12

Matrix: Soil Date Received:06.11.2020 13:40

Lab Sample Id: 664229-002

Date Collected: 06.11.2020 10:22

Prep Method: E300P

% Moisture:

Tech: Analyst: MAB

MAB

Analytical Method: Chloride by EPA 300

Date Prep:

06.11.2020 17:54

Basis:

Wet Weight

Seq Number: 3128751

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	190	10.0	mg/kg	06.12.2020 00:34		1

Analytical Method: TPH by SW8015 Mod

DTH

Tech:

Analyst:

DTH

Date Prep:

06.11.2020 17:20

Prep Method: SW8015P

% Moisture:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8		mg/kg	06.12.2020 03:05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8		mg/kg	06.12.2020 03:05	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8		mg/kg	06.12.2020 03:05	U	1
Total TPH	PHC635	<49.8	49.8		mg/kg	06.12.2020 03:05	U	1
Surrogate	(Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	



COG Operating LLC, Artesia, NM

Pygmy 27 1St.

Sample Id: SW-12

Matrix: Soil Date Received:06.11.2020 13:40

Lab Sample Id: 664229-002

Date Collected: 06.11.2020 10:22

Prep Method: SW5035A

06.12.2020 06:44

% Moisture:

Tech:

MAB

Analytical Method: BTEX by EPA 8021B

MAB Analyst:

Date Prep:

06.11.2020 17:37

Basis:

70-130

Wet Weight

Seq Number: 3128754

1,4-Difluorobenzene

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199		mg/kg	06.12.2020 06:44	U	1
Toluene	108-88-3	< 0.00199	0.00199		mg/kg	06.12.2020 06:44	U	1
Ethylbenzene	100-41-4	< 0.00199	0.00199		mg/kg	06.12.2020 06:44	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398		mg/kg	06.12.2020 06:44	U	1
o-Xylene	95-47-6	< 0.00199	0.00199		mg/kg	06.12.2020 06:44	U	1
Total Xylenes	1330-20-7	< 0.00199	0.00199		mg/kg	06.12.2020 06:44	U	1
Total BTEX		< 0.00199	0.00199		mg/kg	06.12.2020 06:44	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	4	460-00-4	97	%	70-130	06.12.2020 06:44		

110

540-36-3



COG Operating LLC, Artesia, NM

Pygmy 27 1St.

Sample Id: SW-13

Matrix:

Result

53.7

Soil

Date Received:06.11.2020 13:40

Lab Sample Id: 664229-003

Date Collected: 06.11.2020 10:24

Prep Method: E300P

Analysis Date

06.12.2020 00:41

% Moisture:

Tech:

MAB MAB

Analytical Method: Chloride by EPA 300

Data

Cas Number

16887-00-6

) 17.54 D-

Units

mg/kg

Wet Weight

Analyst:

Parameter

Chloride

Seq Number: 3128751

Date Prep: 06.11.2020 17:54

RL

10.1

Basis:

Flag

Dil

1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

% Moisture:

Tech: Analyst: DTH DTH

Date Prep:

06.11.2020 17:20

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	< 50.2	50.2		mg/kg	06.12.2020 03:26	U	1
Diesel Range Organics (DRO)	C10C28DRO	< 50.2	50.2		mg/kg	06.12.2020 03:26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.2	50.2		mg/kg	06.12.2020 03:26	U	1
Total TPH	PHC635	< 50.2	50.2		mg/kg	06.12.2020 03:26	U	1
Surrogate	C	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	81	%	70-135	06.12.2020 03:26
o-Terphenyl	84-15-1	75	%	70-135	06.12.2020 03:26



COG Operating LLC, Artesia, NM

Pygmy 27 1St.

Sample Id: SW-13 Matrix:

Soil

Date Received:06.11.2020 13:40

Lab Sample Id: 664229-003

Date Collected: 06.11.2020 10:24

Prep Method: SW5035A

% Moisture:

Tech:

MAB

Analytical Method: BTEX by EPA 8021B

Analyst:

MAB

Date Prep:

06.11.2020 17:37

Basis:

Wet Weight

Parameter	Cas Number	Result	\mathbf{RL}		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	06.12.2020 07:04	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	06.12.2020 07:04	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	06.12.2020 07:04	U	1
m,p-Xylenes	179601-23-1	< 0.00400	0.00400		mg/kg	06.12.2020 07:04	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	06.12.2020 07:04	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	06.12.2020 07:04	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	06.12.2020 07:04	U	1
Surrogate	C	as Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	100	%	70-130	06.12.2020 07:04	
1,4-Difluorobenzene	540-36-3	113	%	70-130	06.12.2020 07:04	



COG Operating LLC, Artesia, NM

Pygmy 27 1St.

Sample Id: **SW-14** Matrix:

Result

Cas Number

16887-00-6

Soil

Date Received:06.11.2020 13:40

Lab Sample Id: 664229-004

Date Collected: 06.11.2020 10:26

Prep Method: E300P

Analysis Date

06.12.2020 00:48

Tech:

MAB

Analytical Method: Chloride by EPA 300

% Moisture:

Analyst:

MAB

Basis:

Units

mg/kg

Wet Weight

Parameter

Chloride

Seq Number: 3128751

Date Prep: 06.11.2020 17:54

RL

10.0

Flag

Dil

1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: Analyst: DTH DTH

Date Prep:

354

06.11.2020 17:20

Basis:

% Moisture:

Wet Weight

Parameter	Cas Number	Result	Result RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	< 50.2	50.2		mg/kg	06.12.2020 03:46	U	1
Diesel Range Organics (DRO)	C10C28DRO	< 50.2	50.2		mg/kg	06.12.2020 03:46	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.2	50.2		mg/kg	06.12.2020 03:46	U	1
Total TPH	PHC635	<50.2	50.2		mg/kg	06.12.2020 03:46	U	1
Surrogate	C	as Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	80	%	70-135	06.12.2020 03:46
o-Terphenyl	84-15-1	75	%	70-135	06.12.2020 03:46



COG Operating LLC, Artesia, NM

Pygmy 27 1St.

Sample Id: SW-14 Matrix:

Date Received:06.11.2020 13:40

Lab Sample Id: 664229-004

Soil Date Collected: 06.11.2020 10:26

Prep Method: SW5035A

% Moisture:

Tech: Analyst: MAB

MAB

Analytical Method: BTEX by EPA 8021B

Date Prep:

 $06.12.2020\ 08:01$

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	06.12.2020 11:50	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	06.12.2020 11:50	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	06.12.2020 11:50	U	1
m,p-Xylenes	179601-23-1	< 0.00401	0.00401		mg/kg	06.12.2020 11:50	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	06.12.2020 11:50	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	06.12.2020 11:50	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	06.12.2020 11:50	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	98	%	70-130	06.12.2020 11:50		
1,4-Difluorobenzene		540-36-3	108	%	70-130	06.12.2020 11:50		



Flagging Criteria

- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- RPD exceeded lab control limits.
- The target analyte was positively identified below the quantitation limit and above the detection limit.
- Analyte was not detected.
- 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.

ND Not Detected.

RLReporting 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

DLMethod Detection Limit

NC Non-Calculable

SMP Client Sample

BLK

Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample

BKSD/LCSD Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD

Method Duplicate/Sample Duplicate

MS

Matrix Spike

MSD: Matrix Spike Duplicate

- + NELAC certification not offered for this compound.
- (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation



QC Summary 664229

COG Operating LLC

Pygmy 27 1St. E300P Analytical Method: Chloride by EPA 300 Prep Method: Seq Number: 3128751 Matrix: Solid Date Prep: 06.11.2020 7705319-1-BLK LCS Sample Id: 7705319-1-BKS LCSD Sample Id: 7705319-1-BSD MB Sample Id: LCS RPD MB Spike LCS Limits %RPD Units Analysis LCSD LCSD Flag **Parameter** Result Amount Result %Rec Result %Rec Limit Date Chloride <10.0 250 242 97 99 90-110 20 06.11.2020 23:59 248 2 mg/kg E300P Analytical Method: Chloride by EPA 300 Prep Method: Seq Number: 3128751 Matrix: Soil Date Prep: 06.11.2020 664229-001 S 664229-001 MS Sample Id: MSD Sample Id: 664229-001 SD Parent Sample Id: Parent Spike MS MS MSD MSD Limits %RPD RPD Units Analysis **Parameter** Flag Result Amount Result %Rec Result %Rec Limit Date 959 20 06.12.2020 01:44 Chloride 776 201 91 958 91 90-110 0 mg/kg SW8015P Analytical Method: TPH by SW8015 Mod Prep Method: Seq Number: 3128765 Matrix: Solid Date Prep: 06.11.2020 LCS Sample Id: 7705322-1-BKS LCSD Sample Id: 7705322-1-BSD MB Sample Id: 7705322-1-BLK Spike **RPD** MB LCS LCS %RPD Units LCSD LCSD Limits Analysis Flag **Parameter** Result %Rec Limit Date Result Amount Result %Rec Gasoline Range Hydrocarbons (GRO) 971 97 976 35 06.12.2020 01:22 < 50.0 1000 98 70-135 1 mg/kg Diesel Range Organics (DRO) < 50.0 1000 1020 102 1020 102 70-135 0 35 06.12.2020 01:22 mg/kg MB MB LCS LCS LCSD Limits Units Analysis LCSD **Surrogate** Flag Flag Flag %Rec %Rec %Rec Date 06.12.2020 01:22 1-Chlorooctane 95 107 105 70-135 % o-Terphenyl 97 99 96 70-135 % 06.12.2020 01:22 Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P Seq Number: 3128765 Matrix: Solid Date Prep: 06.11.2020 MB Sample Id: 7705322-1-BLK MB Units Analysis Flag **Parameter** Result Date Motor Oil Range Hydrocarbons (MRO) 06.12.2020 01:02 < 50.0 mg/kg SW8015P Analytical Method: TPH by SW8015 Mod Prep Method:

 Analytical Method:
 TPH by SW8015 Mod
 Prep Method:
 SW8015P

 Seq Number:
 3128765
 Matrix:
 Soil
 Date Prep:
 06.11.2020

 Parent Sample Id:
 664229-001
 MS Sample Id:
 664229-001 S
 MSD Sample Id:
 664229-001 SD

Spike MS MS Limits %RPD RPD Units Analysis Parent MSD MSD **Parameter** Limit Result Amount Result %Rec %Rec Date Result Gasoline Range Hydrocarbons (GRO) 06.12.2020 02:25 989 <49.8 996 1050 105 99 35 70-135 6 mg/kg 06.12.2020 02:25 Diesel Range Organics (DRO) 1010 70-135 <49.8 996 1080 108 101 7 35 mg/kg

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Limits Flag	Units	Analysis Date
1-Chlorooctane	104		97	70-135	%	06.12.2020 02:25
o-Terphenyl	87		81	70-135	%	06.12.2020 02:25

MS/MSD Percent Recovery Relative Percent Difference LCS/LCSD Recovery Log Difference [D] = 100*(C-A) / B RPD = 200* | (C-E) / (C+E) | [D] = 100 * (C) / [B]

[D] = 100 * (C) / [B] Log Diff. = Log(Sample Duplicate) - Log(Original Sample) LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result

= MSD/LCSD Result

MS = Matrix Spike B = Spike Added D = MSD/LCSD % Rec Flag

Flag

Flag



COG Operating LLC

664229

Pygmy 27 1St.

Analytical Method:BTEX by EPA 8021BPrep Method:SW5035ASeq Number:3128754Matrix:SolidDate Prep:06.11.2020MB Sample Id:7705311-1-BLKLCS Sample Id:7705311-1-BKSLCSD Sample Id:7705311-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	< 0.00200	0.100	0.107	107	0.112	112	70-130	5	35	mg/kg	06.11.2020 23:35	
Toluene	< 0.00200	0.100	0.101	101	0.105	105	70-130	4	35	mg/kg	06.11.2020 23:35	
Ethylbenzene	< 0.00200	0.100	0.0958	96	0.0985	99	71-129	3	35	mg/kg	06.11.2020 23:35	
m,p-Xylenes	< 0.00400	0.200	0.195	98	0.201	101	70-135	3	35	mg/kg	06.11.2020 23:35	
o-Xylene	< 0.00200	0.100	0.0992	99	0.103	103	71-133	4	35	mg/kg	06.11.2020 23:35	
Surrogate	MB %Rec	MB Flag			LCS Flag	LCSI %Re			imits	Units	Analysis Date	
1,4-Difluorobenzene	110		1	06		106		70	-130	%	06.11.2020 23:35	
4-Bromofluorobenzene	94		9	1		91		70	-130	%	06.11.2020 23:35	

Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A

 Seq Number:
 3128788
 Matrix:
 Solid
 Date Prep:
 06.12.2020

 MB Sample Id:
 7705312-1-BLK
 LCS Sample Id:
 7705312-1-BKS
 LCSD Sample Id:
 7705312-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date
Benzene	< 0.00200	0.100	0.105	105	0.109	109	70-130	4	35	mg/kg	06.12.2020 10:08
Toluene	< 0.00200	0.100	0.0998	100	0.104	104	70-130	4	35	mg/kg	06.12.2020 10:08
Ethylbenzene	< 0.00200	0.100	0.0920	92	0.0972	97	71-129	5	35	mg/kg	06.12.2020 10:08
m,p-Xylenes	< 0.00400	0.200	0.189	95	0.197	99	70-135	4	35	mg/kg	06.12.2020 10:08
o-Xylene	< 0.00200	0.100	0.0969	97	0.101	101	71-133	4	35	mg/kg	06.12.2020 10:08

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	110		107		109		70-130	%	06.12.2020 10:08
4-Bromofluorobenzene	96		93		92		70-130	%	06.12.2020 10:08

Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A

 Seq Number:
 3128754
 Matrix:
 Soil
 Date Prep:
 06.11.2020

 Parent Sample Id:
 664204-015
 MS Sample Id:
 664204-015 S
 MSD Sample Id:
 664204-015 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date
Benzene	< 0.00202	0.101	0.0976	97	0.104	103	70-130	6	35	mg/kg	06.12.2020 00:16
Toluene	< 0.00202	0.101	0.0940	93	0.101	100	70-130	7	35	mg/kg	06.12.2020 00:16
Ethylbenzene	< 0.00202	0.101	0.0872	86	0.0947	94	71-129	8	35	mg/kg	06.12.2020 00:16
m,p-Xylenes	< 0.00403	0.202	0.180	89	0.194	96	70-135	7	35	mg/kg	06.12.2020 00:16
o-Xylene	< 0.00202	0.101	0.0912	90	0.0994	98	71-133	9	35	mg/kg	06.12.2020 00:16

Surrogate	MS MS %Rec Flag	MSD %Rec	MSD L Flag	imits	Units	Analysis Date
1,4-Difluorobenzene	107	107	70)-130	%	06.12.2020 00:16
4-Bromofluorobenzene	94	94	70)-130	%	06.12.2020 00:16

06.12.2020 10:49

QC Summary 664229



COG Operating LLC

Pygmy 27 1St.

90

Analytical Method: BTEX by EPA 8021B

Seq Number: 3128788

4-Bromofluorobenzene

Matrix: Soil

95

Prep Method: SW5035A

70-130

Date Prep: 06.12.2020

Parent Sample Id:	664229-004		MS Sar	MS Sample Id: 664229-004 S					MSD Sample Id: 664229-004 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	0.101	101	0.0996	99	70-130	1	35	mg/kg	06.12.2020 10:49		
Toluene	< 0.00199	0.0996	0.0962	97	0.0950	94	70-130	1	35	mg/kg	06.12.2020 10:49		
Ethylbenzene	< 0.00199	0.0996	0.0905	91	0.0887	88	71-129	2	35	mg/kg	06.12.2020 10:49		
m,p-Xylenes	< 0.00398	0.199	0.184	92	0.181	90	70-135	2	35	mg/kg	06.12.2020 10:49		
o-Xylene	< 0.00199	0.0996	0.0928	93	0.0910	90	71-133	2	35	mg/kg	06.12.2020 10:49		
Surrogate				IS Rec	MS Flag	MSD %Re			imits	Units	Analysis Date		
1,4-Difluorobenzene			1	07		107	•	70	-130	%	06.12.2020 10:49		

d by OCI	78/3/20	8:4 8. New	Relinquished by:	O AM			C			(LABUSE)	LAB#		Comments:	Receiving Laboratory:	Invoice to:	state)	rroject Name:	Client Name:	Na Pa	29 Analysis Red
	Date:	1 13:40 Date: Time:	Date: Time:			5V-14	SD - 13	5V-12	50-11		SAMPLE IDENTIFICATION			son: X cm CO	Sheldon Hitchcock	Lca, NM	Pyony 27 St. 1	COG-Artesia	ONCHO	29 Analysis Request of Chain of Custody Record
ORIGINAL CORY	Received by:	Received by:	Received by:			92:01 11/0	6/11 10:24	22:01 113	6/11 10/20	DATE TIME	YEAR: 2020	SAMPLING		Sampler Name:		Project#:		Site Manager:		
		6/11/20 13:	Date: Time:			*	× ×	Y	X X	WATER SOIL HCL HNO ₃ ICE	~	MATRIX PRESERVATIVE METHOD		Sheldon Hitchcock				Sheldon Hitchcock	One Concho Center/600/Illinois Avenue/Midland, Texas Tel (432) 683-7443	
	Sample Temperature	13:40 LAB USE ONLY				- c X X X	- ^ × ×			# CONT (C)ompo TPH 86 BTEX 8	015M 021B	RS	DRO - M	MRO)						
DELIVERED PEDEX UPS Tracking #	<u>.</u> 1	E ONLY ARUSH: Same Day (24 hg) 48 hr	REMARKS:			3	7		7									ANALYSIS REQUEST (Circle or Specify Method No.)		Pageo
l on		72 hr																		of .

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: COG Operating LLC

Work Order #: 664229

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

Date/ Time Received: 06.11.2020 01.40.00 PM

Temperature Measuring device used: T-NM-007

Sar	nple Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	2.6	
#2 *Shipping container in good condition?	Yes	
#3 *Samples received on ice?	Yes	
#4 *Custody Seals intact on shipping container/	cooler? Yes	
#5 Custody Seals intact on sample bottles?	Yes	
#6*Custody Seals Signed and dated?	Yes	
#7 *Chain of Custody present?	Yes	
#8 Any missing/extra samples?	No	
#9 Chain of Custody signed when relinquished/ r	eceived? 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	Samples received in bulk containers.
#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 deliver	v of samples prior t	o placing in the	refrigerator
Must be combleted for	alter-mours acriver	V OI SAIIIDIGS DITOI I	o biacilia ili tile	i eli idei atoi

Analyst:

PH Device/Lot#:

Checklist completed by:

Elizabeth McClellan

Date: 06.11.2020

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 06.12.2020



Certificate of Analysis Summary 664231

COG Operating LLC, Artesia, NM

Project Name: Pygmy 27 St. 1

Project Id: Contact:

Sheldon Hitchcock

Project Location:

Lea, NM

Date Received in Lab: Thu 06.11.2020 13:40

Report Date: 06.12.2020 12:41

Project Manager: Jessica Kramer

	Lab Id:	664231-0	001	664231-0	02	664231-0	003	664231-0	004	
Analysis Requested	Field Id:	B-28		B-29		B-30		B-31		
Analysis Requested	Depth:									
	Matrix:	SOIL	,	SOIL		SOIL	,	SOIL		
	Sampled:	06.11.2020	10:00	06.11.2020	10:05	06.11.2020	10:10	06.11.2020	10:15	
BTEX by EPA 8021B	Extracted:	06.11.2020	17:37	06.11.2020	17:37	06.11.2020	17:37	06.11.2020	17:37	
	Analyzed:	06.12.2020	07:24	06.12.2020	07:45	06.12.2020	08:05	06.12.2020	08:26	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	
Benzene		< 0.00201	0.00201	< 0.00198	0.00198	< 0.00200	0.00200	< 0.00198	0.00198	
Toluene		< 0.00201	0.00201	< 0.00198	0.00198	< 0.00200	0.00200	< 0.00198	0.00198	
Ethylbenzene		< 0.00201	0.00201	< 0.00198	0.00198	< 0.00200	0.00200	< 0.00198	0.00198	
m,p-Xylenes		< 0.00402	0.00402	< 0.00397	0.00397	< 0.00399	0.00399	< 0.00397	0.00397	
o-Xylene		< 0.00201	0.00201	< 0.00198	0.00198	< 0.00200	0.00200	< 0.00198	0.00198	
Total Xylenes		< 0.00201	0.00201	< 0.00198	0.00198	< 0.00200	0.00200	< 0.00198	0.00198	
Total BTEX		< 0.00201	0.00201	< 0.00198	0.00198	< 0.00200	0.00200	< 0.00198	0.00198	
Chloride by EPA 300	Extracted:	06.11.2020	17:54	06.11.2020	17:54	06.11.2020	17:54	06.11.2020	17:54	
	Analyzed:	06.12.2020	00:55	06.12.2020	01:16	06.12.2020	01:23	06.12.2020	01:30	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	
Chloride		296	10.0	208	9.92	272	9.96	221	10.1	
TPH By SW8015 Mod	Extracted:	06.11.2020	17:20	06.11.2020	17:20	06.11.2020	17:20	06.11.2020	17:20	
	Analyzed:	06.12.2020	04:07	06.12.2020	04:27	06.12.2020	04:48	06.12.2020	05:09	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	
Gasoline Range Hydrocarbons		< 50.2	50.2	<49.8	49.8	<49.8	49.8	<49.9	49.9	
Diesel Range Organics		< 50.2	50.2	<49.8	49.8	<49.8	49.8	<49.9	49.9	
Motor Oil Range Hydrocarbons (MRO)		< 50.2	50.2	<49.8	49.8	<49.8	49.8	<49.9	49.9	
Total TPH		< 50.2	50.2	<49.8	49.8	<49.8	49.8	<49.9	49.9	

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.

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Jessica Kramer



Analytical Report 664231

for

COG Operating LLC

Project Manager: Sheldon Hitchcock

Pygmy 27 St. 1

06.12.2020

Collected By: Client

1089 N Canal Street Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-20-32), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054) Oklahoma (2019-058), North Carolina (681), Arkansas (20-035-0)

> Xenco-Dallas (EPA Lab Code: TX01468): Texas (TX104704295-19-23), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-17)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-22)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-7)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



06.12.2020

Project Manager: Sheldon Hitchcock

COG Operating LLC 2407 Pecos Avenue Artesia, NM 88210

Reference: XENCO Report No(s): 664231

Pygmy 27 St. 1

Project Address: Lea, NM

Sheldon Hitchcock:

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) 664231. 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. 664231 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,

Jessica Kramer

Project Manager

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico



Sample Cross Reference 664231

COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id	Matrix	Date Collected Sample Depth	Lab Sample Id
B-28	S	06.11.2020 10:00	664231-001
B-29	S	06.11.2020 10:05	664231-002
B-30	S	06.11.2020 10:10	664231-003
B-31	S	06.11.2020 10:15	664231-004

CASE NARRATIVE

Client Name: COG Operating LLC

Project Name: Pygmy 27 St. 1

Project ID: Report Date: 06.12.2020 Work Order Number(s): 664231 Date Received: 06.11.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id: B-28

Matrix:

Date Received:06.11.2020 13:40

Lab Sample Id: 664231-001

Soil Date Collected: 06.11.2020 10:00

Prep Method: E300P

Analytical Method: Chloride by EPA 300

% Moisture:

Tech:

MAB MAB

Date Prep:

06.11.2020 17:54

Basis:

Wet Weight

Analyst:

Seq Number: 3128751

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	296	10.0	mg/kg	06.12.2020 00:55		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

% Moisture:

Tech: Analyst: DTH

DTH

Date Prep:

06.11.2020 17:20

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<50.2	50.2		mg/kg	06.12.2020 04:07	U	1
Diesel Range Organics	C10C28DRO	< 50.2	50.2		mg/kg	06.12.2020 04:07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.2	50.2		mg/kg	06.12.2020 04:07	U	1
Total TPH	PHC635	<50.2	50.2		mg/kg	06.12.2020 04:07	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	82	%	70-135	06.12.2020 04:07		
o-Terphenyl		84-15-1	73	%	70-135	06.12.2020 04:07		



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id: B-28 Matrix:

Date Received:06.11.2020 13:40

Lab Sample Id: 664231-001

Soil Date Collected: 06.11.2020 10:00

Prep Method: SW5035A

% Moisture:

Tech:

Analyst:

MAB MAB

Analytical Method: BTEX by EPA 8021B

Date Prep:

06.11.2020 17:37

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00201	0.00201		mg/kg	06.12.2020 07:24	U	1
Toluene	108-88-3	< 0.00201	0.00201		mg/kg	06.12.2020 07:24	U	1
Ethylbenzene	100-41-4	< 0.00201	0.00201		mg/kg	06.12.2020 07:24	U	1
m,p-Xylenes	179601-23-1	< 0.00402	0.00402		mg/kg	06.12.2020 07:24	U	1
o-Xylene	95-47-6	< 0.00201	0.00201		mg/kg	06.12.2020 07:24	U	1
Total Xylenes	1330-20-7	< 0.00201	0.00201		mg/kg	06.12.2020 07:24	U	1
Total BTEX		< 0.00201	0.00201		mg/kg	06.12.2020 07:24	U	1
Surrogate	Ca	s Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	94	%	70-130	06.12.2020 07:24	
1,4-Difluorobenzene	540-36-3	109	%	70-130	06.12.2020 07:24	



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id: B-29

Matrix:

Soil

Date Received:06.11.2020 13:40

Lab Sample Id: 664231-002

Date Collected: 06.11.2020 10:05

Prep Method: E300P

% Moisture:

Tech:

MAB

Analytical Method: Chloride by EPA 300

Analyst:

MAB

Date Prep:

06.11.2020 17:54

Basis:

Wet Weight

Seq Number: 3128751

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	208	9.92	mg/kg	06.12.2020 01:16		1

Analytical Method: TPH By SW8015 Mod

DTH

Tech:

Analyst: DTH

Date Prep:

06.11.2020 17:20

% Moisture:

Prep Method: SW8015P

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<49.8	49.8		mg/kg	06.12.2020 04:27	U	1
Diesel Range Organics	C10C28DRO	<49.8	49.8		mg/kg	06.12.2020 04:27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8		mg/kg	06.12.2020 04:27	U	1
Total TPH	PHC635	<49.8	49.8		mg/kg	06.12.2020 04:27	U	1
Surrogate	C	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	79	%	70-135	06.12.2020 04:27
o-Terphenyl	84-15-1	72	%	70-135	06.12.2020 04:27



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id:

B-29

Matrix:

Date Received:06.11.2020 13:40

Lab Sample Id: 664231-002

Soil Date Collected: 06.11.2020 10:05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech:

MAB

% Moisture:

MAB Analyst:

Date Prep:

06.11.2020 17:37

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00198	0.00198		mg/kg	06.12.2020 07:45	U	1
Toluene	108-88-3	< 0.00198	0.00198		mg/kg	06.12.2020 07:45	U	1
Ethylbenzene	100-41-4	< 0.00198	0.00198		mg/kg	06.12.2020 07:45	U	1
m,p-Xylenes	179601-23-1	< 0.00397	0.00397		mg/kg	06.12.2020 07:45	U	1
o-Xylene	95-47-6	< 0.00198	0.00198		mg/kg	06.12.2020 07:45	U	1
Total Xylenes	1330-20-7	< 0.00198	0.00198		mg/kg	06.12.2020 07:45	U	1
Total BTEX		< 0.00198	0.00198		mg/kg	06.12.2020 07:45	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	97	%	70-130	06.12.2020 07:45		
1,4-Difluorobenzene		540-36-3	110	%	70-130	06.12.2020 07:45		



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id:

B-30

Analytical Method: Chloride by EPA 300

Matrix:

Date Received:06.11.2020 13:40

Lab Sample Id: 664231-003

Soil Date Collected: 06.11.2020 10:10

Prep Method: E300P

% Moisture:

Tech:

MAB

MAB Analyst:

Date Prep:

06.11.2020 17:54

Basis:

Wet Weight

Seq Number: 3128751

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	272	9.96	mg/kg	06.12.2020 01:23		1

Analytical Method: TPH By SW8015 Mod

DTH

Analyst: DTH

Tech:

Date Prep:

06.11.2020 17:20

Prep Method: SW8015P % Moisture:

Basis: Wet Weight

Seq Number:	3128765

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<49.8	49.8		mg/kg	06.12.2020 04:48	U	1
Diesel Range Organics	C10C28DRO	<49.8	49.8		mg/kg	06.12.2020 04:48	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8		mg/kg	06.12.2020 04:48	U	1
Total TPH	PHC635	<49.8	49.8		mg/kg	06.12.2020 04:48	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	1	111-85-3	77	%	70-135	06.12.2020 04:48		
o-Terphenyl	8	84-15-1	73	%	70-135	06.12.2020 04:48		



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id: B-30

Date Collected: 06.11.2020 10:10

Matrix:

Date Received:06.11.2020 13:40

Lab Sample Id: 664231-003

Soil

Prep Method: SW5035A

% Moisture:

Tech: MAB

Analyst:

Seq Number: 3128754

MAB

Analytical Method: BTEX by EPA 8021B

Date Prep: 06.11.2020 17:37 Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200	mg/kg	06.12.2020 08:05	U	1
Toluene	108-88-3	< 0.00200	0.00200	mg/kg	06.12.2020 08:05	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200	mg/kg	06.12.2020 08:05	U	1
m,p-Xylenes	179601-23-1	< 0.00399	0.00399	mg/kg	06.12.2020 08:05	U	1
o-Xylene	95-47-6	< 0.00200	0.00200	mg/kg	06.12.2020 08:05	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200	mg/kg	06.12.2020 08:05	U	1
Total BTEX		< 0.00200	0.00200	mg/kg	06.12.2020 08:05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	113	%	70-130	06.12.2020 08:05	
4-Bromofluorobenzene	460-00-4	101	%	70-130	06.12.2020 08:05	



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id: B-31 Matrix:

Soil

Date Received:06.11.2020 13:40

Lab Sample Id: 664231-004

Date Collected: 06.11.2020 10:15

Prep Method: E300P

% Moisture:

Tech: Analyst: MAB

Analytical Method: Chloride by EPA 300

MAB

Date Prep:

06.11.2020 17:54

Basis:

Wet Weight

Seq Number: 3128751

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	221	10.1	mg/kg	06.12.2020 01:30		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

% Moisture:

Tech: Analyst: DTH DTH

Date Prep:

06.11.2020 17:20

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<49.9	49.9		mg/kg	06.12.2020 05:09	U	1
Diesel Range Organics	C10C28DRO	<49.9	49.9		mg/kg	06.12.2020 05:09	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9		mg/kg	06.12.2020 05:09	U	1
Total TPH	PHC635	<49.9	49.9		mg/kg	06.12.2020 05:09	U	1
Surrogate	C	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4 611		44.07.0			50 405	0 < 12 2020 0 7 00		



COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id: B-31 Matrix:

Date Received:06.11.2020 13:40

Lab Sample Id: 664231-004

Soil Date Collected: 06.11.2020 10:15

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

% Moisture:

Tech: MAB Analyst:

MAB

Date Prep: 06.11.2020 17:37 Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00198	0.00198		mg/kg	06.12.2020 08:26	U	1
Toluene	108-88-3	< 0.00198	0.00198		mg/kg	06.12.2020 08:26	U	1
Ethylbenzene	100-41-4	< 0.00198	0.00198		mg/kg	06.12.2020 08:26	U	1
m,p-Xylenes	179601-23-1	< 0.00397	0.00397		mg/kg	06.12.2020 08:26	U	1
o-Xylene	95-47-6	< 0.00198	0.00198		mg/kg	06.12.2020 08:26	U	1
Total Xylenes	1330-20-7	< 0.00198	0.00198		mg/kg	06.12.2020 08:26	U	1
Total BTEX		< 0.00198	0.00198		mg/kg	06.12.2020 08:26	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	4	460-00-4	100	%	70-130	06.12.2020 08:26		
1,4-Difluorobenzene		540-36-3	111	%	70-130	06.12.2020 08:26		



Flagging Criteria

- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- RPD exceeded lab control limits.
- The target analyte was positively identified below the quantitation limit and above the detection limit.
- Analyte was not detected.
- 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.

ND Not Detected.

RLReporting 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

DLMethod Detection Limit

NC Non-Calculable

SMP Client Sample

BLK

Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample

BKSD/LCSD Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD

Method Duplicate/Sample Duplicate

MS

Matrix Spike

MSD: Matrix Spike Duplicate

- + NELAC certification not offered for this compound.
- * (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

Flag

Flag

Flag

Flag

QC Summary 664231

COG Operating LLC

Pygmy 27 St. 1

Analytical Method: Chloride by EPA 300

E300P Prep Method:

Seg Number: 3128751 Matrix: Solid Date Prep: 06.11.2020 7705319-1-BLK LCS Sample Id: 7705319-1-BKS LCSD Sample Id: 7705319-1-BSD MB Sample Id:

LCS RPD MB Spike LCS Limits %RPD Units Analysis LCSD LCSD **Parameter** Result Amount Result %Rec Result %Rec Limit Date Chloride <10.0 250 242 97 248 99 90-110 20 06.11.2020 23:59 2 mg/kg

Analytical Method: Chloride by EPA 300

E300P Prep Method: Seq Number: 3128751 Matrix: Soil Date Prep: 06.11.2020

664229-001 S 664229-001 MS Sample Id: MSD Sample Id: 664229-001 SD Parent Sample Id:

Parent Spike MS MS MSD MSD Limits %RPD RPD Units Analysis **Parameter** Flag Result Amount Result %Rec %Rec Limit Date Result 959 20 06.12.2020 01:44 Chloride 776 201 91 958 91 90-110 0 mg/kg

Analytical Method: TPH By SW8015 Mod

SW8015P Prep Method: Seq Number: 3128765 Matrix: Solid Date Prep: 06.11.2020

LCS Sample Id: 7705322-1-BKS LCSD Sample Id: 7705322-1-BSD MB Sample Id: 7705322-1-BLK

Spike %RPD **RPD** MR LCS LCS Units LCSD LCSD Limits Analysis **Parameter** Result %Rec Limit Date Result Amount Result %Rec 06.12.2020 01:22 Gasoline Range Hydrocarbons 971 97 976 35 < 50.0 1000 98 70-135 1 mg/kg Diesel Range Organics < 50.0 1000 1020 102 1020 102 70-135 0 35 06.12.2020 01:22 mg/kg

MB MB LCS LCS LCSD Limits Units Analysis LCSD **Surrogate** Flag Flag Flag %Rec %Rec %Rec Date 06.12.2020 01:22 1-Chlorooctane 95 107 105 70-135 % o-Terphenyl 97 99 96 70-135 % 06.12.2020 01:22

Analytical Method: TPH By SW8015 Mod

Prep Method: Seq Number: 3128765 Matrix: Solid Date Prep: 06.11.2020

MB Sample Id: 7705322-1-BLK

MB

1080

Result Date

06.12.2020 01:02 Motor Oil Range Hydrocarbons (MRO) < 50.0 mg/kg

Analytical Method: TPH By SW8015 Mod

Seq Number: 3128765 Matrix: Soil Date Prep: 06.11.2020

MS Sample Id: 664229-001 S MSD Sample Id: 664229-001 SD Parent Sample Id: 664229-001

Spike MS MS %RPD RPD Units Analysis Parent MSD MSD Limits **Parameter** Limit Result Amount Result %Rec Date Result %Rec 06.12.2020 02:25 Gasoline Range Hydrocarbons 989 <49.8 996 1050 105 99 35 mg/kg 70-135 6

108

1010

MS MS **MSD** Units Analysis MSD Limits **Surrogate** Flag Date %Rec Flag %Rec 06.12.2020 02:25 1-Chlorooctane 104 97 70-135 % 06.12.2020 02:25 o-Terphenyl 87 81 70-135 %

MS/MSD Percent Recovery Relative Percent Difference LCS/LCSD Recovery Log Difference

Diesel Range Organics

Parameter

[D] = 100*(C-A) / BRPD = 200* | (C-E) / (C+E) | [D] = 100 * (C) / [B]

996

<49.8

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample = Parent Result = MS/LCS Result

= MSD/LCSD Result

7

70-135

101

MS = Matrix Spike B = Spike Added D = MSD/LCSD % Rec

SW8015P

SW8015P

Analysis

06.12.2020 02:25

Units

mg/kg

Prep Method:

35

4-Bromofluorobenzene

94

06.11.2020 23:35

QC Summary 664231



COG Operating LLC

Pygmy 27 St. 1

91

70-130

%

Analytical Method: BTEX by EPA 8021B SW5035A Prep Method: Seq Number: 3128754 Matrix: Solid Date Prep: 06.11.2020

LCS Sample Id: 7705311-1-BKS LCSD Sample Id: 7705311-1-BSD MB Sample Id: 7705311-1-BLK

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	< 0.00200	0.100	0.107	107	0.112	112	70-130	5	35	mg/kg	06.11.2020 23:35	
Toluene	< 0.00200	0.100	0.101	101	0.105	105	70-130	4	35	mg/kg	06.11.2020 23:35	
Ethylbenzene	< 0.00200	0.100	0.0958	96	0.0985	99	71-129	3	35	mg/kg	06.11.2020 23:35	
m,p-Xylenes	< 0.00400	0.200	0.195	98	0.201	101	70-135	3	35	mg/kg	06.11.2020 23:35	
o-Xylene	< 0.00200	0.100	0.0992	99	0.103	103	71-133	4	35	mg/kg	06.11.2020 23:35	
Surrogate	MB %Rec	MB Flag			LCS Flag	LCSI %Re			imits	Units	Analysis Date	
1,4-Difluorobenzene	110		10	06		106		70)-130	%	06.11.2020 23:35	

SW5035A Analytical Method: BTEX by EPA 8021B Prep Method:

91

Seq Number: 3128754 Matrix: Soil Date Prep: 06.11.2020 MS Sample Id: 664204-015 S MSD Sample Id: 664204-015 SD Parent Sample Id: 664204-015

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	< 0.00202	0.101	0.0976	97	0.104	103	70-130	6	35	mg/kg	06.12.2020 00:16	
Toluene	< 0.00202	0.101	0.0940	93	0.101	100	70-130	7	35	mg/kg	06.12.2020 00:16	
Ethylbenzene	< 0.00202	0.101	0.0872	86	0.0947	94	71-129	8	35	mg/kg	06.12.2020 00:16	
m,p-Xylenes	< 0.00403	0.202	0.180	89	0.194	96	70-135	7	35	mg/kg	06.12.2020 00:16	
o-Xylene	< 0.00202	0.101	0.0912	90	0.0994	98	71-133	9	35	mg/kg	06.12.2020 00:16	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		107		70-130	%	06.12.2020 00:16
4-Bromofluorobenzene	94		94		70-130	%	06.12.2020 00:16

AvenueMidant Texas Tel (432) 683-7443 Sheldon Hitchcock PRESERVATIVE METHOD Date: Time: Date: Time: Date: Time:
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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: COG Operating LLC

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

Date/ Time Received: 06.11.2020 01.40.00 PM

Temperature Measuring device used: T-NM-007

Work Order #: 664231

	Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?		2.6	
#2 *Shipping container in good condition?		Yes	
#3 *Samples received on ice?		Yes	
#4 *Custody Seals intact on shipping contai	ner/ cooler?	Yes	
#5 Custody Seals intact on sample bottles?		Yes	
#6*Custody Seals Signed and dated?		Yes	
#7 *Chain of Custody present?		Yes	
#8 Any missing/extra samples?		No	
#9 Chain of Custody signed when relinquish	ned/ received?	Yes	
#10 Chain of Custody agrees with sample la	abels/matrix?	Yes	
#11 Container label(s) legible and intact?		Yes	
#12 Samples in proper container/ bottle?		Yes	Samples received in bulk containers.
#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 headsp	ace?	N/A	

Must be completed	for after-hours	delivery of	camples prior to	nlacina in th	a refrigerator
wust be combleted	for after-mours	delivery of	Samples prior to) biacing in th	e remuerator

Analyst:

PH Device/Lot#:

Checklist completed by:

Date: <u>06.11.2020</u>

Checklist reviewed by:

Date: 06.12.2020

eurofins Environment Testing

Certificate of Analysis Summary 664446

COG Operating LLC, Artesia, NM

Project Name: Pygmy 27 St. 1

Project Id: Contact:

Project Location:

Sheldon Hitchcock

Lea, Nm

Date Received in Lab: Mon 06.15.2020 11:48 **Report Date:** 07.29.2020 13:22

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	664446-001			
	Field Id:	SW-11			
	Depth:				
	Matrix:	SOIL			
	Sampled:	06.15.2020 10:08			
Chloride by EPA 300	Extracted:	06.15.2020 14:50			
	Analyzed:	** ** ** **			
	Units/RL:	mg/kg RL			
Chloride		163 9.90			

BRL - Below Reporting Limit

Jessica Weamer

Analytical Report 664446

for

COG Operating LLC

Project Manager: Sheldon Hitchcock

Pygmy 27 St. 1

07.29.2020

Collected By: Client

1089 N Canal Street Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-20-36), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054) Oklahoma (2019-058), North Carolina (681), Arkansas (20-035-0)

> Xenco-Dallas (EPA Lab Code: TX01468): Texas (T104704295-20-25), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-17)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-22)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-7)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



07.29.2020

Project Manager: Sheldon Hitchcock

COG Operating LLC 2407 Pecos Avenue Artesia, NM 88210

Reference: Eurofins Xenco, LLC Report No(s): 664446

Pygmy 27 St. 1

Project Address: Lea, Nm

Sheldon Hitchcock:

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 Eurofins Xenco, LLC Report Number(s) 664446. 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 Eurofins Xenco, LLC. 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. 664446 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 Eurofins Xenco, LLC to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Jessica Kramer

Jessica Veramer

Project Manager

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Sample Cross Reference 664446

COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id Matrix Date Collected Sample Depth Lab Sample Id
SW-11 S 06.15.2020 10:08 664446-001

Xenco

CASE NARRATIVE

Client Name: COG Operating LLC

Project Name: Pygmy 27 St. 1

Project ID: Report Date: 07.29.2020 Work Order Number(s): 664446 Date Received: 06.15.2020

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Xenco

Certificate of Analytical Results 664446

COG Operating LLC, Artesia, NM

Pygmy 27 St. 1

Sample Id: SW-11 Matrix:

Soil

Date Received:06.15.2020 11:48

Lab Sample Id: 664446-001

Analytical Method: Chloride by EPA 300

Date Collected: 06.15.2020 10:08

Prep Method: E300P

Tech: MAB

% Moisture:

MAB Analyst:

Date Prep:

06.15.2020 14:50

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	163	9.90	mg/kg	06.15.2020 14:02		1



Flagging Criteria

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

BRL Below Reporting Limit. **ND** Not Detected.

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

SMP Client Sample BLK Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample BKSD/LCSD Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate MS Matrix Spike MSD: Matrix Spike Duplicate

- + NELAC certification not offered for this compound.
- * (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

^{**} Surrogate recovered outside laboratory control limit.

QC Summary 664446



COG Operating LLC

Pygmy 27 St. 1

Analytical Method: Chloride by EPA 300

3129015 Seq Number: Matrix: Solid

E300P Prep Method:

Date Prep: 06.15.2020

MB Sample Id: 7705472-1-BLK LCS Sample Id: 7705472-1-BKS

LCSD Sample Id: 7705472-1-BSD

LCS %RPD RPD MB Spike LCS LCSD LCSD Limits Units Analysis Flag **Parameter** Limit Result Amount Result %Rec Result %Rec Date Chloride <10.0 250 246 98 254 102 90-110 3 20 06.15.2020 14:51 mg/kg

Analytical Method: Chloride by EPA 300

Seq Number:

E300P Prep Method: 3129015 Date Prep: 06.15.2020 Matrix: Soil

MS Sample Id: 664446-001 S MSD Sample Id: 664446-001 SD Parent Sample Id: 664446-001

Parent Spike MS MS MSD **MSD** Limits %RPD RPD Units Analysis **Parameter** Flag Result Amount Result %Rec Result %Rec Limit Date 20 06.15.2020 15:12 Chloride 163 199 374 106 374 106 90-110 0 mg/kg

Hold

Final 1.001

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APPENDIX D











