

December 4, 2019

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

Jim Amos Bureau of Land Management, CFO 620 E. Green Street Carlsbad, NM 88220

Closure Report Jazzbass 34 Federal #003H API#: 30-025-27916 RP#: 1RP-5555 DOR: June 8, 2019 GPS: 32.080757 -103.355432 Unit Letter O, Section 34, Township 25 South, Range 35 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 Jazzbass 34 Federal #003H. The release was located in Unit Letter O, Section 34, Township 25 South and Range 35 East in Lea County, New Mexico. More specifically the latitude and longitude for the release are 32.080757 North and -103.355432 West.

BACKGROUND

The release was discovered on June 6, 2019 and a C-141 initial report was submitted to the New Mexico Oil Conservation Division (NMOCD) and the Bureau of Land Management (BLM). A flowline failure resulted in a release of approximately eight (8) barrels (bbls) of produced water. The fluid impacted the pasture adjacent to the lease road.

GROUNDWATER AND REGULATORY FRAMEWORK

According to the United States Geological Survey (USGS) groundwater in the project vicinity is approximately two-hundred and thirty (230) 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 is 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	>100 feet

Delineation and Closure Criteria:

Recommended Remedial Action Levels (RRALs)		
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 a depth of four (4) feet BGS.
- All of the excavated material was hauled to an NMOCD approved solid waste disposal facility.
- Confirmation soil samples were taken from bottom and sidewalls of the excavation per NMAC 19.15.29.
- The site was backfilled with clean "like" material and contoured to match the surrounding terrain.

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. Approximately two-hundred and ninety-six (296) cubic yards of material was removed and hauled to an NMOCD approved solid waste disposal facility. Once excavated, soil samples were collected from the sidewalls to confirm the removal of impacted soil greater than 600 mg/kg of chlorides. The backfill material was non-contaminated 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 BLM #2 seed mixture once proper seasonal conditions exist.

CLOSURE REQUEST

COG Operating, LLC respectfully requests that the New Mexico Oil Conservation Division and the Bureau of Land Management grant closure approval for the Boone 16 State Com #002H incident that occurred on June 8, 2019.

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

Sincerely,

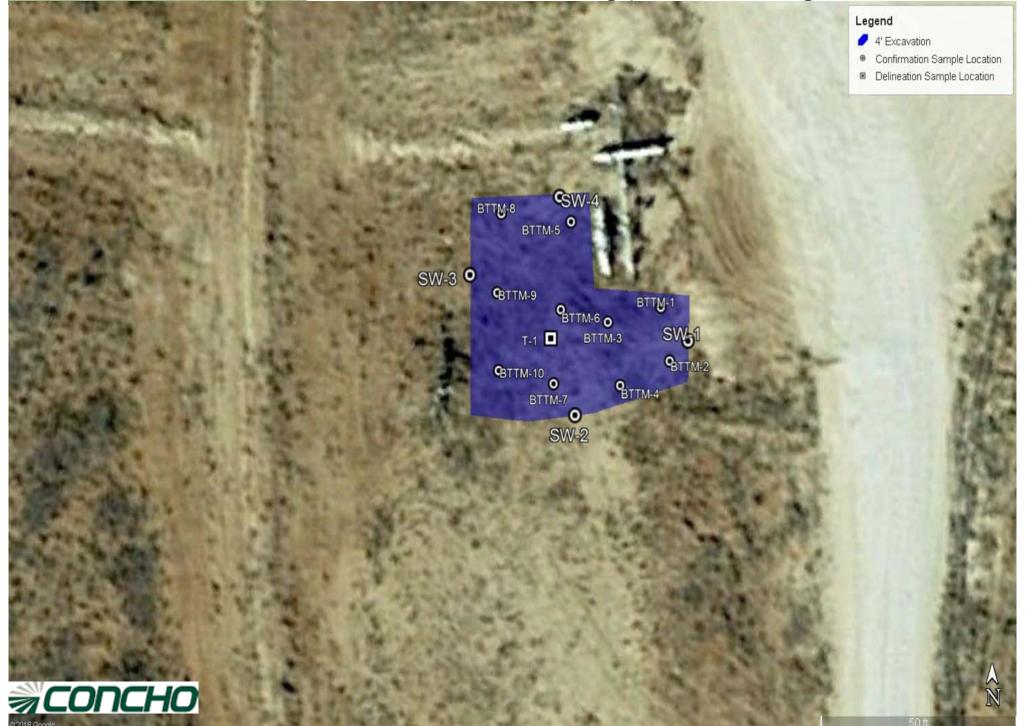
Sheldon Jutan

Sheldon L. Hitchcock HSE Coordinator slhitchcock@concho.com

FIGURES

June 8, 201

Jazzbass 34 Federal #003H



TABLES

Table 1 COG Operating LLC. Jazzbass 34 Federal #003H Lea County, New Mexico

Sample Sample Sample Data Soil Status		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	(mg/kg)
NMOCD RRAL L	imits (mg/kg)				-	-	-	2,500	-	-	1,000	10	50	20,000
SW-1	N/A	8/30/2019	Х		<25.0	<25.0	<25.0					<0.001	<0.001	334
SW-2	N/A	8/30/2019	Х		<25.0	<25.0	<25.0					<0.001	<0.001	<10.0
SW-3	N/A	8/30/2019	Х		<25.0	<25.0	<25.0					<0.001	<0.001	232
SW-4	N/A	8/30/2019	Х		<25.0	<25.0	<25.0					<0.001	<0.001	<10.0
BTTM-1	4	8/30/2019	Х		<25.0	<25.0	<25.0					<0.001	<0.001	4260
BTTM-2	4	8/30/2019	Х		<25.0	<25.0	<25.0					<0.001	<0.001	4160
BTTM-3	4	8/30/2019	Х		<25.0	<25.0	<25.0					<0.001	<0.001	4320
BTTM-4	4	8/30/2019	Х		<25.0	41.2	<25.0					<0.001	<0.001	5880
BTTM-5	4	8/30/2019	Х		<25.0	103	<25.0					<0.001	<0.001	5810
BTTM-6	4	8/30/2019	Х		<25.0	167	<25.0					<0.001	<0.001	3140
BTTM-7	4	8/30/2019	Х		<25.0	157	<25.0					<0.001	<0.001	2,900
BTTM-8	4	8/30/2019	Х		<25.0	141	<25.0					<0.001	<0.001	3,740
BTTM-9	4	8/30/2019	Х		<25.0	89.8	<25.0					<0.001	<0.001	3,370
BTTM-10	4	8/30/2019	Х		<25.0	166	<25.0					<0.001	<0.001	3,300
T-1	6	8/30/2019	Х		<25.0	<25.0	<25.0					<0.001	<0.001	370

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

)

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party	OGRID
Contact Name	Contact Telephone
Contact email	Incident # (assigned by OCD)
Contact mailing address	

Location of Release Source

(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Site Type
Date Release Discovered	API# (if applicable)

Unit Letter	Section	Township	Range	County

Surface Owner: State Federal Tribal Private (Name: _

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	Yes No
Condensate	Volume Released (bbls)	Volume Recovered (bbls)
Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)
Cause of Release		
Cause of Release		

Page 2

State of New Mexico Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC?	If YES, for what reason(s) does the responsible party consider this a major release?
Yes No	
If YES, was immediate n	otice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

The source of the release has been stopped.

The impacted area has been secured to protect human health and the environment.

Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.

All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation 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 containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

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

Printed Name:	Title:
Signature: Sheldon Jutan	Date:
email:	Telephone:
OCD Only	
Received by:	Date:

Form C-141 Page 3 State of New Mexico Oil Conservation Division

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?	🗌 Yes 🗌 No
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)?	🗌 Yes 🗌 No
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 vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

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 1/2-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.

Form C-141	State of New Mexico	Incident ID
Page 4	Oil Conservation Division	District RP
		Facility ID
		Application ID
regulations all operators are r public health or the environm failed to adequately investiga addition, OCD acceptance of and/or regulations. Printed Name: Signature:	required to report and/or file certain release notific nent. The acceptance of a C-141 report by the OC ate and remediate contamination that pose a threat a C-141 report does not relieve the operator of re	st of my knowledge and understand that pursuant to OCD rules and cations and perform corrective actions for releases which may endanger D does not relieve the operator of liability should their operations have to groundwater, surface water, human health or the environment. In sponsibility for compliance with any other federal, state, or local laws Title: Date: Felephone:
OCD Only Received by:		Date:

Form C-141 Page 5 State of New Mexico Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Remediation Plan

<u>Remediation Plan Checklist</u> : 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 point Estimated volume of material to be remediated Closure criteria is to Table 1 specifications subject to 19.15.29.1 Proposed schedule for remediation (note if remediation plan time) 	2(C)(4) NMAC
<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 pr deconstruction.	roduction 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	n, 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 guitan	Date:
email:	Telephone:
OCD Only	
Received by:	Date:
Approved Approved with Attached Conditions of	Approval Denied Deferral Approved
Signature:	Date:

State of New Mexico Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Closure

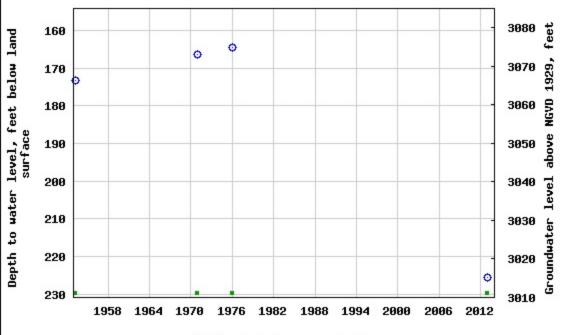
The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled 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.

<u>Closure Report Attachment Checklist</u> : Each of the following in	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 certaid may endanger public health or the environment. The acceptance of should their operations have failed to adequately investigate and re- human 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 co- accordance with 19.15.29.13 NMAC including notification to the O- Printed Name:	ations. The responsible party acknowledges they must substantially onditions that existed prior to the release or their final land use in
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

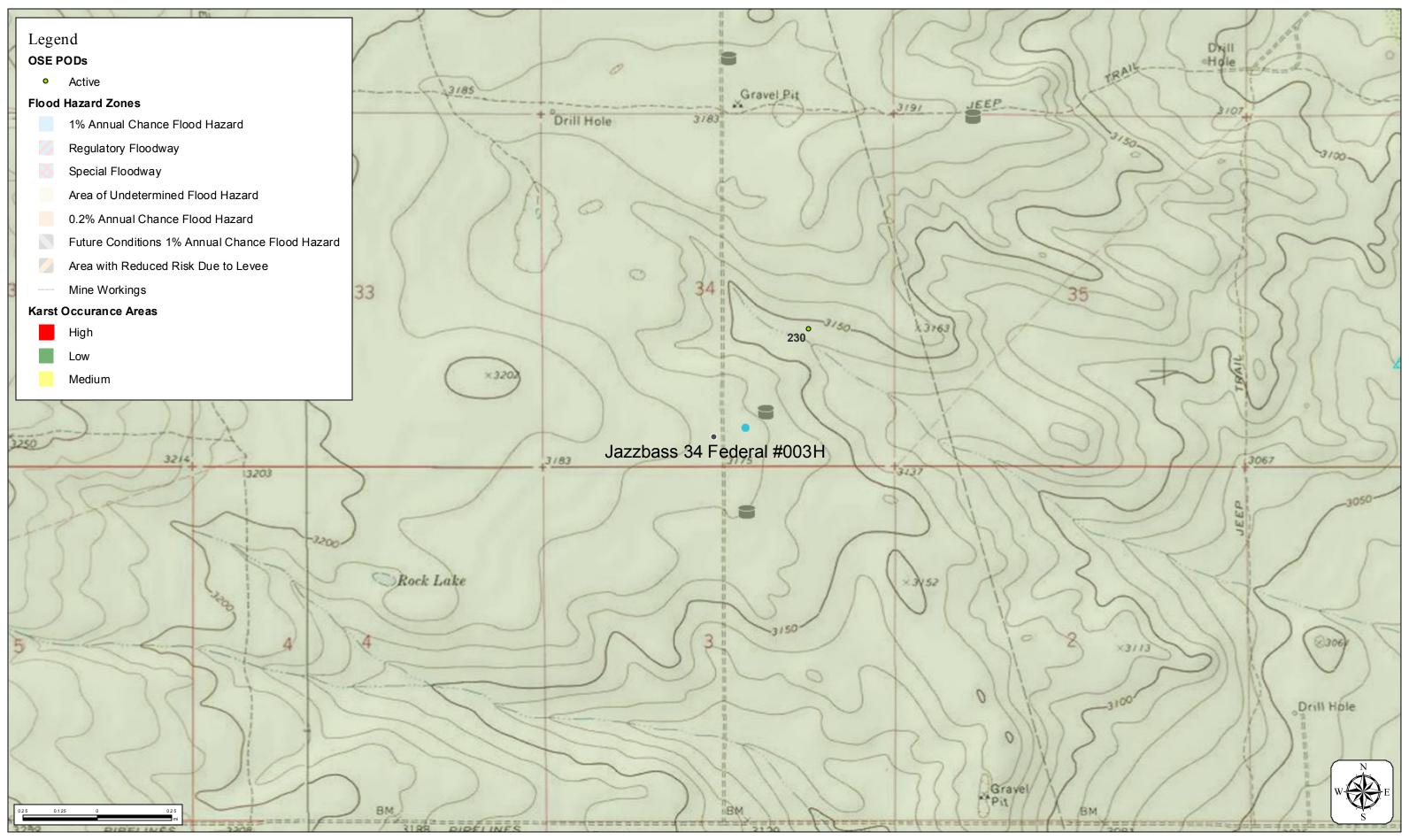


USGS 320704103222301 25S.35E.21.122224



Period of approved data





ArcGIS Web Map

APPENDIX C



Project Id:Contact:Sheldon HitchcockProject Location:Lea, NM

Certificate of Analysis Summary 635671

COG Operating LLC, Artesia, NM Project Name: Jazz Bass 34 Fed #3H

Date Received in Lab:Fri Aug-30-19 01:05 pmReport Date:03-SEP-19Project Manager:Jessica Kramer

Lab Id:	635671-001					
Field Id:	T-1					
Depth:						
Matrix:	SOIL					
Sampled:	Aug-30-19 11:00					
Extracted:	Aug-30-19 13:08					
Analyzed:	Aug-30-19 15:51					
Units/RL:	mg/kg RL					
	<0.000998 0.000998					
	<0.000998 0.000998					
	<0.000998 0.000998					
	<0.00200 0.00200					
	<0.000998 0.000998					
	<0.000998 0.000998					
	<0.000998 0.000998					
Extracted:	Aug-30-19 14:08					
Analyzed:	Aug-30-19 16:05					
Units/RL:	mg/kg RL					
	370 D 50.0					
Extracted:	Aug-30-19 14:00					
Analyzed:	Aug-30-19 14:23					
Units/RL:	mg/kg RL					
	<25.0 25.0					
	<25.0 25.0					
	<25.0 25.0					
	<25.0 25.0					
	Depth: Matrix: Sampled: Extracted: Analyzed: Units/RL: Extracted: Analyzed: Units/RL: Extracted: Analyzed:	Field Id: T-1 Depth: SOIL Matrix: SOIL Sampled: Aug-30-19 11:00 Extracted: Aug-30-19 13:08 Analyzed: Aug-30-19 15:51 Units/RL: mg/kg RL Solid Analyzed: Aug-30-19 15:51 Units/RL: mg/kg RL Ø/ds 0.000998 0.000998 Ø/ds Ø/ds Ø/ds Ø/ds Ø/ds Ø/ds Ø/ds Ø/ds	Field Id: T-1 Depth: Matrix: SOIL Sampled: Aug-30-19 11:00 Extracted: Aug-30-19 13:08 Analyzed: Aug-30-19 15:51 Units/RL: mg/kg RL <0.000998 0.000998 <0.000998 0.000998 <0.000998 0.000998 <0.000998 0.000998 <0.000998 0.000998 <0.000998 0.000998 <0.000998 0.000998 <0.000998 0.000998 <0.000998 0.000998 <0.000998 0.000998 <0.000998 0.000998 <0.000998 0.000998 Extracted: Aug-30-19 14:08 Analyzed: Aug-30-19 14:00 Analyzed: Aug-30-19 14:23 Units/RL: mg/kg RL Units/RL: mg/kg RL <25.0 25.0 <25.0 25.0	Field Id: T-1 Depth:	Field Id: T.1 Image: Constraint of the section of	Field Hit T-1 Image: SOIL Image: SOIL Image: SOIL Samplet: Aug-30-19 11:00 Image: SOIL Image: SOIL Image: SOIL Extractet: Aug-30-19 13:08 Image: SOIL Image: SOIL Image: SOIL Vinis/RL: mg/kg RL Image: SOID Image: SOID Image: SOID Vinis/RL: mg/kg RL Image: SOID Image: SOID Image: SOID <d0.00098 0.00098<="" td=""> Image: SOID Image: SOID Image: SOID <d0.00098 0.00098<="" td=""> Image: SOID Image: SOID Image: SOID <d0.00098 0.00098<="" td=""> Image: SOID Image: SOID Image: SOID <d0.00098 0.00098<="" td=""> Image: SOID Image: SOID Image: SOID <d0.00098 0.00098<="" td=""> Image: SOID Image: SOID Image: SOID <d0.00098 0.00098<="" td=""> Image: SOID Image: SOID Image: SOID <d0.00098 0.00098<="" td=""> Image: SOID Image: SOID Image: SOID <d0.00098 0.00098<="" td=""> Image: SOID Image: SOID Image: SOID Image: SOID <d0.000000< th=""></d0.000000<></d0.00098></d0.00098></d0.00098></d0.00098></d0.00098></d0.00098></d0.00098></d0.00098>

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

fession kenner

Jessica Kramer Project Assistant

Analytical Report 635671

for COG Operating LLC

Project Manager: Sheldon Hitchcock

Jazz Bass 34 Fed #3H

03-SEP-19

Collected By: Client



1089 N Canal Street Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054) Oklahoma (2017-142), North Carolina (681)

> Xenco-Dallas (EPA Lab Code: TX01468): Texas (T104704295-19-19), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14) Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20) Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18) Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4) Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757) Xenco-Atlanta (LELAP Lab ID #04176) Xenco-Tampa: Florida (E87429), North Carolina (483)



03-SEP-19

Project Manager: **Sheldon Hitchcock COG Operating LLC** 2407 Pecos Avenue Artesia, NM 88210

Reference: XENCO Report No(s): 635671 Jazz Bass 34 Fed #3H 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) 635671. 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. 635671 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,

Jession Vramer

Jessica Kramer Project Assistant

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994. Certified and approved by numerous States and Agencies. A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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



Sample Cross Reference 635671

COG Operating LLC, Artesia, NM

Jazz Bass 34 Fed #3H

Matrix	Date Collected	Sample Depth	Lab Sample Id
S	08-30-19 11:00		635671-001

Sample Id

T-1



CASE NARRATIVE

Client Name: COG Operating LLC Project Name: Jazz Bass 34 Fed #3H

Project ID: Work Order Number(s): 635671 Report Date: 03-SEP-19 Date Received: 08/30/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3100258 Chloride by EPA 300

Lab Sample ID 635676-010 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 635671-001.

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

Batch: LBA-3100260 BTEX by EPA 8021B

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



Seq Number: 3100262

Certificate of Analytical Results 635671

COG Operating LLC, Artesia, NM

Jazz Bass 34 Fed #3H

Sample Id: Lab Sample	T-1 Id: 635671-001		Matrix: Date Collec	Soil ted: 08.30.19 11.00		Date Received:08.	30.19 13.0	5
Analytical M Tech: Analyst: Seq Number	Iethod: Chloride by EPA MAB MAB : 3100258	A 300	Date Prep:	08.30.19 14.08		Prep Method: E30 % Moisture: Basis: We	00P t Weight	
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride		16887-00-6	370	50.0	mg/kg	09.02.19 16.39	D	5
Analytical M Tech: Analyst:	lethod: TPH By SW801 DTH DTH	5 Mod	Date Prep:	08.30.19 14.00		Prep Method: SW % Moisture: Basis: We	78015P t Weight	

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<25.0	25.0		mg/kg	08.30.19 14.23	U	1
Diesel Range Organics	C10C28DRO	<25.0	25.0		mg/kg	08.30.19 14.23	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0		mg/kg	08.30.19 14.23	U	1
Total TPH	PHC635	<25.0	25.0		mg/kg	08.30.19 14.23	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	126	%	70-135	08.30.19 14.23		
o-Terphenyl		84-15-1	110	%	70-135	08.30.19 14.23		



Certificate of Analytical Results 635671

COG Operating LLC, Artesia, NM

Jazz Bass 34 Fed #3H

Sample Id: Lab Sample	T-1 Id: 635671-001	Matrix: Date Collecte	Soil d: 08.30.19 11.00	Date Receive	ed:08.30.19 13.05
Analytical M	fethod: BTEX by EPA 8021B			Prep Method	: SW5030B
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	08.30.19 13.08	Basis:	Wet Weight

· mary crear 1010				riep memou
Tech:	DTH			% Moisture:
Analyst:	DTH	Date Prep:	08.30.19 13.08	Basis:
Seq Number:	3100260			

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.000998	0.000998		mg/kg	08.30.19 15.51	U	1
Toluene	108-88-3	< 0.000998	0.000998		mg/kg	08.30.19 15.51	U	1
Ethylbenzene	100-41-4	< 0.000998	0.000998		mg/kg	08.30.19 15.51	U	1
m,p-Xylenes	179601-23-1	< 0.00200	0.00200		mg/kg	08.30.19 15.51	U	1
o-Xylene	95-47-6	< 0.000998	0.000998		mg/kg	08.30.19 15.51	U	1
Total Xylenes	1330-20-7	< 0.000998	0.000998		mg/kg	08.30.19 15.51	U	1
Total BTEX		< 0.000998	0.000998		mg/kg	08.30.19 15.51	U	1
Surrogate		Cas Number	%	Units	Limits	Analysis Date	Flag	
8			Recovery			•	The	
1,4-Difluorobenzene		540-36-3	102	%	70-130	08.30.19 15.51		
4-Bromofluorobenzene		460-00-4	106	%	70-130	08.30.19 15.51		



Flagging Criteria

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

SMP Clie	ent Sample	BLK	Method Blank	
BKS/LCS	S Blank Spike/Laboratory Control Sample	BKSD/LCSD	Blank Spike Duplicate/Labor	ratory 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 635671

COG Operating LLC

Jazz Bass 34 Fed #3H

Analytical Method:	Chloride by EPA 30)0						Pr	ep Meth	od: E30	OP	
Seq Number:	3100258			Matrix:	Solid				Date Pr	ep: 08.3	0.19	
MB Sample Id:	7685390-1-BLK		LCS Sar	nple Id:	7685390-	I-BKS		LCSI	D Sample	e Id: 7685	5390-1-BSD	
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Lim	it Units	Analysis Date	Flag
Chloride	3.32	250	254	102	253	101	80-120	0	20	mg/kg	08.30.19 14:29	

Analytical Method:	Chloride by EPA 30	00						Pı	ep Metho	od: E30	0P	
Seq Number:	3100258			Matrix:	Soil				Date Pre	ep: 08.3	0.19	
Parent Sample Id:	635671-001		MS Sar	nple Id:	635671-00	01 S		MS	D Sample	e Id: 635	571-001 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Lim	it Units	Analysis Date	Flag
Chloride	370	249	687	127	688	128	80-120	0	20	mg/kg	08.30.19 16:11	Х

Analytical Method:	Chloride by EPA 30)0						Р	rep Meth	od: E30	0P	
Seq Number:	3100258			Matrix:	Soil				Date Pr	ep: 08.3	30.19	
Parent Sample Id:	635676-010		MS Sar	nple Id:	635676-01	10 S		MS	D Sample	e Id: 635	676-010 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Lim	it Units	Analysis Date	Flag
Chloride	3300	4990	8060	95	8120	97	80-120	1	20	mg/kg	08.30.19 18:16	

Analytical Method:	TPH By SW8)15 Mo	od						Р	rep Metho	d: SW8	3015P	
Seq Number:	3100262			Matrix:	Solid		Date Prep: 08.30.19						
MB Sample Id:	7685426-1-BL	K		LCS San	nple Id:	7685426-	1-BKS		LCS	D Sample	Id: 768	5426-1-BSD	
Parameter	R	MB esult	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydroc	arbons <	<9.88	1000	1020	102	1010	101	70-135	1	35	mg/kg	08.30.19 11:06	
Diesel Range Organics	<	<9.88	1000	1010	101	1010	101	70-135	0	35	mg/kg	08.30.19 11:06	
Surrogate	C	MB %Rec	MB Flag		CS Rec	LCS Flag	LCSI %Re			imits	Units	Analysis Date	
1-Chlorooctane		111		1	17		118		70	0-135	%	08.30.19 11:06	
o-Terphenyl		96		1	09		110		70	0-135	%	08.30.19 11:06	

[D] = 100*(C-A) / B RPD = 200* | (C-E) / (C+E) | [D] = 100 * (C) / [B] Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample A = Parent Result C = MS/LCS Result E = MSD/LCSD Result MS = Matrix Spike B = Spike Added D = MSD/LCSD % Rec



o-Terphenyl

QC Summary 635671

COG Operating LLC

Jazz Bass 34 Fed #3H

125

70-135

%

08.30.19 14:42

Analytical Method: TPH By SW8015 Mod	thod: TPH By SW8015 Mod
--------------------------------------	-------------------------

Analytical Method: Seq Number: Parent Sample Id:	Iod	Matrix: Soil MS Sample Id: 635671-001 S					Prep Method: SW8015P Date Prep: 08.30.19 MSD Sample Id: 635671-001 SD						
Parameter		Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPI) RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydroca	arbons	< 9.84	996	1130	113	1100	110	70-135	3	35	mg/kg	08.30.19 14:42	
Diesel Range Organics		< 9.84	996	1150	115	1120	112	70-135	3	35	mg/kg	08.30.19 14:42	
Surrogate					1S Rec	MS Flag	MSE %Re		-	Limits	Units	Analysis Date	
1-Chlorooctane				1	28		128		,	70-135	%	08.30.19 14:42	

118

Analytical Method: Seq Number: MB Sample Id:	BTEX by EPA 802 3100260 7685424-1-BLK	1B	LCS Sar	Matrix: nple Id:	Solid 7685424-	1-BKS			Prep Metho Date Pre SD Sample	p: 08.3	5030B 50.19 5424-1-BSD	
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPI	D RPD Limit	Units	Analysis Date	Flag
Benzene	< 0.00100	0.100	0.0880	88	0.0929	93	70-130	5	35	mg/kg	08.30.19 11:31	
Toluene	< 0.00100	0.100	0.0970	97	0.101	101	70-130	4	35	mg/kg	08.30.19 11:31	
Ethylbenzene	< 0.00100	0.100	0.108	108	0.116	116	71-129	7	35	mg/kg	08.30.19 11:31	
m,p-Xylenes	< 0.00100	0.200	0.224	112	0.239	120	70-135	6	35	mg/kg	08.30.19 11:31	
o-Xylene	< 0.000500	0.100	0.110	110	0.118	118	71-133	7	35	mg/kg	08.30.19 11:31	
Surrogate	MB %Rec	MB Flag		CS Rec	LCS Flag	LCSI %Ree	·		Limits	Units	Analysis Date	
1,4-Difluorobenzene	112		1	09		104			70-130	%	08.30.19 11:31	
4-Bromofluorobenzene	118		1	26		121			70-130	%	08.30.19 11:31	

Analytical Method: Seq Number: Parent Sample Id:	BTEX by EPA 802 3100260 635671-001	1B		Matrix: nple Id:	Soil 635671-00	01 S			Prep Method Date Prep SD Sample	p: 08.3	5030B 0.19 571-001 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RP	D RPD Limit	Units	Analysis Date	Flag
Benzene	< 0.00101	0.101	0.0930	92	0.0879	88	70-130	6	35	mg/kg	08.30.19 14:52	
Toluene	< 0.000505	0.101	0.0968	96	0.0914	91	70-130	6	35	mg/kg	08.30.19 14:52	
Ethylbenzene	< 0.000505	0.101	0.108	107	0.101	101	71-129	7	35	mg/kg	08.30.19 14:52	
m,p-Xylenes	< 0.00101	0.202	0.227	112	0.210	105	70-135	8	35	mg/kg	08.30.19 14:52	
o-Xylene	< 0.000505	0.101	0.115	114	0.105	105	71-133	9	35	mg/kg	08.30.19 14:52	
Surrogate				1S Rec	MS Flag	MSD %Ree			Limits	Units	Analysis Date	
1,4-Difluorobenzene			1	07		112			70-130	%	08.30.19 14:52	
4-Bromofluorobenzene			1	20		125			70-130	%	08.30.19 14:52	

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

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

LCS = Laboratory Control SampleA = Parent Result C = MS/LCS Result E = MSD/LCSD Result

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

	telinquished by:	vajiriquisried by:	lad	Relinquished by:				(LAB USE)	LAB #			Comments:	Receiving Labor	state) Invoice to:	Project Location:	Project Name:	Client Name:	Analysis R
	Date: Time:	Date: Time:	h Ne: 8/30/19	Date: Time:			T-		SAMPLE IDENTIFICATION		Rush	and X th co	Sheldon Hitchcock		Jazz Bass 34 Fred.	CUG-Artesia	CONCHO	Analysis Request of Chain of Custody Record
ORIGINAL COPY	Received by: Date:	Received by: Date:	Correction 19				8/30 1/ 20 X	DATE TIME WATER SOIL HCL	YEAR: 2019	SAMPLING MATRIX		Sampler Name: Sheldor		Project #:	#3F	Sheldon Hitchcock	One Conche Avenuel Tel (1	
(Circle)	Time:	Time:	13:03				x 7	HNO ₃ ICE # CONT (C)ompc TPH 80	AINEF osite/(C	6)rab	- DRO -	Sheldon Hitchcock				litchcock	One Concho Center/600/Illinois Avenue/Midland, Texas Tel (432) 683-7443	
(Circle) HAND DELIVERED	دو بن	Sample Temperature	LAB USE ONLY				0	BTEX 80)21B							(Circle P	63	
FEDEX UPS Tracking #:	Special Report Limits or TRRP Report	XRUSH: Seme Day 24 hr 48 hr 72 hr	REMARKS:					Hold									567)	Page of 1



XENCO Laboratories TORIES Prelogin/Nonconformance Report- Sample Log-In

Client: COG Operating LLC	Acceptable Temperature Range: 0 - 6 degC							
Date/ Time Received: 08/30/2019 01:05:00 PM	Air and Metal samples Acceptable Range: Ambient							
Work Order #: 635671	Temperature Measuring device used : T-NM-007							
Sample Recei	pt Checklist Comments							
#1 *Temperature of cooler(s)?	2.3							
#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?	Νο							
#9 Chain of Custody signed when relinquished/ received?	Yes							
#10 Chain of Custody agrees with sample labels/matrix?	Yes							
#11 Container label(s) legible and intact?	Yes							
#12 Samples in proper container/ bottle?	Yes							
#13 Samples properly preserved?	Yes							
#14 Sample container(s) intact?	Yes							
#15 Sufficient sample amount for indicated test(s)?	Yes							
#16 All samples received within hold time?	Yes							
#17 Subcontract of sample(s)?	Yes							
#18 Water VOC samples have zero headspace?	N/A							

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

Analyst:

PH Device/Lot#:

Checklist completed by: Martha Castro

Date: 08/30/2019

Checklist reviewed by: Jessica Vramer

Jessica Kramer

Date: 08/30/2019



Project Id:Contact:Sheldon HitchcockProject Location:Lea, NM

Certificate of Analysis Summary 635674

COG Operating LLC, Artesia, NM Project Name: Jazz Bass 34 Fed #3H

Date Received in Lab:Fri Aug-30-19 01:05 pmReport Date:03-SEP-19Project Manager:Jessica Kramer

	Lab Id:			635674-0	02	635674-0	003	635674-004			
Are alusia Do au osto d	Field Id:			SW-2		SW-3		SW-4			
Analysis Requested	Depth:										
	Matrix:	SOIL		SOIL		SOIL		SOIL			
	Sampled:	Aug-30-19	10:30	Aug-30-19	10:32	Aug-30-19	10:34	Aug-30-19	10:36		
BTEX by EPA 8021B	Extracted:	Aug-30-19	13:08	Aug-30-19	13:08	Aug-30-19	13:08	Aug-30-19	13:08		
	Analyzed:	Aug-30-19 16:11		Aug-30-19 16:31		Aug-30-19	16:51	Aug-30-19	17:11		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Benzene		<0.000998	0.000998	<0.000994	0.000994	< 0.000990	0.000990	< 0.00100	0.00100		
Toluene		<0.000998	0.000998	< 0.000994	0.000994	< 0.000990	0.000990	< 0.00100	0.00100		
Ethylbenzene		<0.000998	0.000998	< 0.000994	0.000994	< 0.000990	0.000990	< 0.00100	0.00100		
m,p-Xylenes		< 0.00200	0.00200	< 0.00199	0.00199	< 0.00198	0.00198	< 0.00200	0.00200		
o-Xylene		<0.000998	0.000998	< 0.000994	0.000994	< 0.000990	0.000990	< 0.00100	0.00100		
Total Xylenes		<0.000998	0.000998	<0.000994 0.000994		<0.000990 0.000990		< 0.00100	0.00100		
Total BTEX		< 0.000998	<0.000998 0.000998		<0.000994 0.000994		<0.000990 0.000990		0.00100		
Chloride by EPA 300	Extracted:	Aug-30-19 14:08		Aug-30-19 14:08		Aug-30-19 14:08		Aug-30-19 14:08			
	Analyzed:	Aug-30-19 16:24		Aug-30-19 16:30		Aug-30-19 16:36		Aug-30-19 16:42			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Chloride		334 D	50.0	<9.96	9.96	232	49.3	<9.86	9.86		
TPH By SW8015 Mod	Extracted:	Aug-30-19	14:00	Aug-30-19	14:00	Aug-30-19	14:00	Aug-30-19	14:00		
Analyzed:		Aug-30-19 15:22		Aug-30-19 15:42		Aug-30-19 16:02		Aug-30-19 16:22			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Gasoline Range Hydrocarbons		<25.0	25.0	<24.9	24.9	<25.0	25.0	<24.9	24.9		
Diesel Range Organics		<25.0	25.0	<24.9	24.9	<25.0	25.0	<24.9	24.9		
Motor Oil Range Hydrocarbons (MRO)		<25.0	25.0	<24.9	24.9	<25.0	25.0	<24.9	24.9		
Total TPH		<25.0	25.0	<24.9	24.9	<25.0	25.0	<24.9	24.9		

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

Version: 1.%

fession kenner

Jessica Kramer Project Assistant

Analytical Report 635674

for COG Operating LLC

Project Manager: Sheldon Hitchcock

Jazz Bass 34 Fed #3H

03-SEP-19

Collected By: Client



1089 N Canal Street Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054) Oklahoma (2017-142), North Carolina (681)

> Xenco-Dallas (EPA Lab Code: TX01468): Texas (T104704295-19-19), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14) Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20) Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18) Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4) Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757) Xenco-Atlanta (LELAP Lab ID #04176) Xenco-Tampa: Florida (E87429), North Carolina (483)



03-SEP-19

Project Manager: **Sheldon Hitchcock COG Operating LLC** 2407 Pecos Avenue Artesia, NM 88210

Reference: XENCO Report No(s): 635674 Jazz Bass 34 Fed #3H 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) 635674. 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. 635674 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,

Jession Vramer

Jessica Kramer Project Assistant

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994. Certified and approved by numerous States and Agencies. A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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



Sample Cross Reference 635674

COG Operating LLC, Artesia, NM

Jazz Bass 34 Fed #3H

Sample Id	Matrix	Date Collected Sample	e Depth Lab Sample Id
SW-1	S	08-30-19 10:30	635674-001
SW-2	S	08-30-19 10:32	635674-002
SW-3	S	08-30-19 10:34	635674-003
SW-4	S	08-30-19 10:36	635674-004



CASE NARRATIVE

Client Name: COG Operating LLC Project Name: Jazz Bass 34 Fed #3H

Project ID: Work Order Number(s): 635674 Report Date: 03-SEP-19 Date Received: 08/30/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments: Batch: LBA-3100260 BTEX by EPA 8021B Soil samples were not received in Terracore kits and therefore were prepared by method 5030.



Certificate of Analytical Results 635674

COG Operating LLC, Artesia, NM

Jazz Bass 34 Fed #3H

Sample Id: Lab Sample Id	SW-1 d: 635674-001		Matrix: Date Colle	Soil ected: 08.30.19 10.30	Date Received:08.30.19 13.05					
2	ethod: Chloride by E	PA 300				Prep Method: E3	00P			
Tech: Analyst:	MAB MAB		Date Prep:	08.30.19 14.08		% Moisture: Basis: We	t Weight			
Seq Number:	3100258									
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil		
Chloride		16887-00-6	334	50.0	mg/kg	08.30.19 16.48	D	5		

Analytical Method: TPH By SW801	5 Mod				F	Prep Method: SW	/8015P		
Tech: DTH					9	6 Moisture:			
Analyst: DTH		Date Pre	p: 08.30.	19 14.00	E	Basis: We	et Weight		
Seq Number: 3100262									
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil	
Gasoline Range Hydrocarbons	PHC610	<25.0	25.0		mg/kg	08.30.19 15.22	U	1	
Diesel Range Organics	C10C28DRO	<25.0	25.0		mg/kg	08.30.19 15.22	U	1	
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0		mg/kg	08.30.19 15.22	U	1	
Total TPH	PHC635	<25.0	25.0		mg/kg	08.30.19 15.22	U	1	
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1-Chlorooctane		111-85-3	122	%	70-135	08.30.19 15.22			
o-Terphenyl		84-15-1	111	%	70-135	08.30.19 15.22			



1,4-Difluorobenzene

Certificate of Analytical Results 635674

COG Operating LLC, Artesia, NM

Jazz Bass 34 Fed #3H

100

%

70-130

08.30.19 16.11

Sample Id: Lab Sample I	SW-1 ld: 635674-001	Matrix: Date Collecte	Soil d: 08.30.19 10.30	Date Receive	d:08.30.19 13.05
Analytical M	ethod: BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	08.30.19 13.08	Basis:	Wet Weight

Seq Number: 3100260 Parameter **Cas Number** Result RL Units **Analysis Date** Flag 71-43-2 0.000998 08.30.19 16.11 U Benzene < 0.000998mg/kg Toluene 108-88-3 < 0.000998 0.000998 08.30.19 16.11 U mg/kg Ethylbenzene 100-41-4 < 0.000998 0.000998 08.30.19 16.11 U mg/kg m,p-Xylenes 179601-23-1 < 0.00200 0.00200 mg/kg 08.30.19 16.11 U o-Xylene 95-47-6 < 0.000998 0.000998 08.30.19 16.11 U mg/kg Total Xylenes 1330-20-7 < 0.000998 0.000998 08.30.19 16.11 U mg/kg Total BTEX < 0.000998 0.000998 08.30.19 16.11 U mg/kg % Cas Number Surrogate Units Limits **Analysis Date** Flag Recovery 4-Bromofluorobenzene 460-00-4 108 % 70-130 08.30.19 16.11

540-36-3

Page	7	of	18	

Dil

1

1

1

1

1

1

1



COG Operating LLC, Artesia, NM

Sample Id:SW-2Lab Sample Id:635674-002		Matrix: Date Collec	Soil cted: 08.30.19 10.32		Date Received:08.3	30.19 13.0	5
Analytical Method: Chloride Tech: MAB Analyst: MAB	by EPA 300	Date Prep:	08.30.19 14.08		Prep Method: E30 % Moisture: Basis: We	00P t Weight	
Seq Number: 3100258 Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.96	9.96	mg/kg	08.30.19 16.30	U	1
Analytical Method: TPH By S	SW8015 Mod				Prep Method: SW	8015P	
Tech: DTH					% Moisture:		

Tech: DTH					9	o Moisture:		
Analyst: DTH		Date Prep	p: 08.30	.19 14.00	E	Basis: We	et Weight	
Seq Number: 3100262								
Parameter	Cas Number	r Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbor	ns PHC610	<24.9	24.9		mg/kg	08.30.19 15.42	U	1
Diesel Range Organics	C10C28DRO	<24.9	24.9		mg/kg	08.30.19 15.42	U	1
Motor Oil Range Hydrocarbons (MRO) PHCG2835	<24.9	24.9		mg/kg	08.30.19 15.42	U	1
Total TPH	PHC635	<24.9	24.9		mg/kg	08.30.19 15.42	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	129	%	70-135	08.30.19 15.42		
o-Terphenyl		84-15-1	115	%	70-135	08.30.19 15.42		



COG Operating LLC, Artesia, NM

Sample Id: Lab Sample I	SW-2 Id: 635674-002	Matrix: Date Collecte	Soil d: 08.30.19 10.32	Date Receive	d:08.30.19 13.05
Analytical M	ethod: BTEX by EPA 8021B			Prep Method:	: SW5030B
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	08.30.19 13.08	Basis:	Wet Weight

J				1	
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	08.30.19 13.08	Basis:	We
Seq Number:	3100260				

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.000994	0.000994		mg/kg	08.30.19 16.31	U	1
Toluene	108-88-3	< 0.000994	0.000994		mg/kg	08.30.19 16.31	U	1
Ethylbenzene	100-41-4	< 0.000994	0.000994		mg/kg	08.30.19 16.31	U	1
m,p-Xylenes	179601-23-1	< 0.00199	0.00199		mg/kg	08.30.19 16.31	U	1
o-Xylene	95-47-6	< 0.000994	0.000994		mg/kg	08.30.19 16.31	U	1
Total Xylenes	1330-20-7	< 0.000994	0.000994		mg/kg	08.30.19 16.31	U	1
Total BTEX		< 0.000994	0.000994		mg/kg	08.30.19 16.31	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	110	%	70-130	08.30.19 16.31		
1,4-Difluorobenzene		540-36-3	117	%	70-130	08.30.19 16.31		



COG Operating LLC, Artesia, NM

Sample Id: Lab Sample Id	SW-3 d: 635674-003		Matrix: Date Collec	Soil eted: 08.30.19 10.34	I	Date Received:08.3	0.19 13.0	5
Analytical Me Tech: Analyst: Seq Number:	ethod: Chloride by El MAB MAB 3100258	PA 300	Date Prep:	08.30.19 14.08	ç	Prep Method: E30 % Moisture: Basis: Wet	0P Weight	
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride		16887-00-6	232	49.3	mg/kg	08.30.19 16.36		5
Analytical Me	ethod: TPH By SW80	15 Mod			I	Prep Method: SW8	3015P	
Tech:	DTH					% Moisture:		

					/	o monstare.		
Analyst: DTH		Date Prep	p: 08.30.1	9 14.00	E	asis: We	t Weight	
Seq Number: 3100262								
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<25.0	25.0		mg/kg	08.30.19 16.02	U	1
Diesel Range Organics	C10C28DRO	<25.0	25.0		mg/kg	08.30.19 16.02	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0		mg/kg	08.30.19 16.02	U	1
Total TPH	PHC635	<25.0	25.0		mg/kg	08.30.19 16.02	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	119	%	70-135	08.30.19 16.02		
o-Terphenyl		84-15-1	112	%	70-135	08.30.19 16.02		



Seq Number: 3100260

Certificate of Analytical Results 635674

COG Operating LLC, Artesia, NM

I I	SW-3 Id: 635674-003	Matrix: Date Collecte	Soil d: 08.30.19 10.34	Date Receive	d:08.30.19 13.05
•	lethod: BTEX by EPA 8021B			Prep Method	: SW5030B
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	08.30.19 13.08	Basis:	Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.000990	0.000990		mg/kg	08.30.19 16.51	U	1
Toluene	108-88-3	< 0.000990	0.000990		mg/kg	08.30.19 16.51	U	1
Ethylbenzene	100-41-4	< 0.000990	0.000990		mg/kg	08.30.19 16.51	U	1
m,p-Xylenes	179601-23-1	< 0.00198	0.00198		mg/kg	08.30.19 16.51	U	1
o-Xylene	95-47-6	< 0.000990	0.000990		mg/kg	08.30.19 16.51	U	1
Total Xylenes	1330-20-7	< 0.000990	0.000990		mg/kg	08.30.19 16.51	U	1
Total BTEX		< 0.000990	0.000990		mg/kg	08.30.19 16.51	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	107	%	70-130	08.30.19 16.51		
1,4-Difluorobenzene		540-36-3	106	%	70-130	08.30.19 16.51		



COG Operating LLC, Artesia, NM

Sample Id:SW-4Lab Sample Id:635674-0)04	Matrix: Date Collec	Soil cted: 08.30.19 10.36		Date Received:08.30.19 13.05				
Analytical Method: Chlo Tech: MAB	oride by EPA 300				Prep Method: E30 % Moisture:	00P			
Analyst:MABSeq Number:3100258		Date Prep:	08.30.19 14.08		Basis: We	t Weight			
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil		
Chloride	16887-00-6	<9.86	9.86	mg/kg	08.30.19 16.42	U	1		

ethod: TPH By SW8	015 Mod				ł	rep Method: SW	/8015P	
DTH					9	6 Moisture:		
DTH		Date Pre	p: 08.30	.19 14.00	F	Basis: We	et Weight	
3100262			-					
	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Hydrocarbons	PHC610	<24.9	24.9		mg/kg	08.30.19 16.22	U	1
ganics	C10C28DRO	<24.9	24.9		mg/kg	08.30.19 16.22	U	1
lydrocarbons (MRO)	PHCG2835	<24.9	24.9		mg/kg	08.30.19 16.22	U	1
	PHC635	<24.9	24.9		mg/kg	08.30.19 16.22	U	1
		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
etane		111-85-3	122	%	70-135	08.30.19 16.22		
yl		84-15-1	113	%	70-135	08.30.19 16.22		
	DTH DTH 3100262 Hydrocarbons ganics ydrocarbons (MRO)	DTH 3100262 Hydrocarbons PHC610 ganics C10C28DRO ydrocarbons (MRO) PHCG2835 PHC635	DTH DTH Date Pre 3100262 Hydrocarbons PHC610 <24.9 ganics C10C28DRO <24.9 ydrocarbons (MRO) PHCG2835 <24.9 PHC635 <24.9 PHC635 <24.9 tane 111-85-3	DTH DTH DTH 3100262 Mydrocarbons PHC610 <24.9 24.9 ganics C10C28DRO <24.9 24.9 ydrocarbons (MRO) PHCG2835 <24.9 24.9 PHC635 <24.9 24.9 PHC635 <24.9 24.9 PHC635 <24.9 24.9 PHC635 <24.9 24.9 PHC635 24.9 24.9 24.9 PHC635 24.9 24.9 24.9 PHC635 24.9 24.9 24.9 PHC635 24.9 24.9 24.9 24.9 24.9 24.9 24.9 24.9	DTH Date Prep: 08.30.19 14.00 3100262 Cas Number Result RL Hydrocarbons PHC610 <24.9	DTH Date Prep: 08.30.19 14.00 B 3100262 Cas Number Result RL Units Hydrocarbons PHC610 <24.9	DTH % Moisture: DTH Date Prep: 08.30.19 14.00 Basis: Weight (Weight	DTH Moisture: DTH Date Prep: 08.30.19 14.00 Basis: Wet Weight 3100262 Cas Number Result RL Units Analysis Date Flag Hydrocarbons PHC610 <24.9



Seq Number: 3100260

Certificate of Analytical Results 635674

COG Operating LLC, Artesia, NM

Sample Id: Lab Sample I	SW-4 id: 635674-004	Matrix: Date Collecte	Soil d: 08.30.19 10.36	Date Receive	d:08.30.19 13.05
Analytical M	ethod: BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	08.30.19 13.08	Basis:	Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00100	0.00100		mg/kg	08.30.19 17.11	U	1
Toluene	108-88-3	< 0.00100	0.00100		mg/kg	08.30.19 17.11	U	1
Ethylbenzene	100-41-4	< 0.00100	0.00100		mg/kg	08.30.19 17.11	U	1
m,p-Xylenes	179601-23-1	< 0.00200	0.00200		mg/kg	08.30.19 17.11	U	1
o-Xylene	95-47-6	< 0.00100	0.00100		mg/kg	08.30.19 17.11	U	1
Total Xylenes	1330-20-7	< 0.00100	0.00100		mg/kg	08.30.19 17.11	U	1
Total BTEX		< 0.00100	0.00100		mg/kg	08.30.19 17.11	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	101	%	70-130	08.30.19 17.11		
4-Bromofluorobenzene		460-00-4	105	%	70-130	08.30.19 17.11		



Flagging Criteria

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

SMP Clie	ent Sample	BLK	Method Blank	
BKS/LCS	S Blank Spike/Laboratory Control Sample	BKSD/LCSD	Blank Spike Duplicate/Labor	ratory 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 635674

COG Operating LLC

Jazz Bass 34 Fed #3H

Analytical Method:	Chloride by EPA 3	00						Pre	ep Metho	d: E30	OP	
Seq Number:	3100258			Matrix:	Solid				Date Prep	p: 08.3	30.19	
MB Sample Id:	7685390-1-BLK		LCS Sar	nple Id:	7685390-	1-BKS		LCSE	Sample	Id: 768	5390-1-BSD	
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD I	RPD Limit	Units	Analysis Date	Flag
Chloride	3.32	250	254	102	253	101	80-120	0	20	mg/kg	08.30.19 14:29	

Analytical Method:	Chloride by EPA 3	00						Pr	ep Metho	od: E30	0P	
Seq Number:	3100258			Matrix:	Soil				Date Pre	ep: 08.3	0.19	
Parent Sample Id:	635671-001		MS Sar	nple Id:	635671-00	01 S		MS	D Sample	e Id: 635	671-001 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Lim	it Units	Analysis Date	Flag
Chloride	370	249	687	127	688	128	80-120	0	20	mg/kg	08.30.19 16:11	x

Analytical Method:	Chloride by EPA 30)0						Pı	ep Metho	od: E30	0P	
Seq Number:	3100258			Matrix:	Soil				Date Pr	ep: 08.3	0.19	
Parent Sample Id:	635676-010		MS Sar	nple Id:	635676-01	10 S		MS	D Sample	e Id: 635	676-010 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Lim	it Units	Analysis Date	Flag

Analytical Method:	TPH By SW8015	Mod						Prep M	ethod: SW	8015P	
Seq Number:	3100262			Matrix:	Solid			Date	Prep: 08.3	30.19	
MB Sample Id:	7685426-1-BLK		LCS Sar	nple Id:	7685426-	1-BKS		LCSD San	ple Id: 768	5426-1-BSD	
Parameter	MB Result		LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD RPD I	limit Units	Analysis Date	Flag
Gasoline Range Hydroc	arbons <9.88	3 1000	1020	102	1010	101	70-135	1 35	mg/kg	08.30.19 11:06	
Diesel Range Organics	<9.88	3 1000	1010	101	1010	101	70-135	0 35	mg/kg	08.30.19 11:06	
Surrogate	MB %Re			CS Rec	LCS Flag	LCSI %Re			Units	Analysis Date	
1-Chlorooctane	111		1	17		118		70-135	%	08.30.19 11:06	
o-Terphenyl	96		1	09		110		70-135	%	08.30.19 11:06	

[D] = 100*(C-A) / B RPD = 200* | (C-E) / (C+E) | [D] = 100 * (C) / [B] Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample A = Parent Result C = MS/LCS Result E = MSD/LCSD Result MS = Matrix Spike B = Spike Added D = MSD/LCSD % Rec



1-Chlorooctane

1,4-Difluorobenzene

4-Bromofluorobenzene

o-Terphenyl

QC Summary 635674

COG Operating LLC

Jazz Bass 34 Fed #3H

128

125

104

121

70-135

70-135

70-130

70-130

%

%

%

%

Analytical Method:							Prep Method	l: SW8	3015P				
Seq Number:	3100262				Matrix:	Soil				Date Prep	p: 08.3	0.19	
Parent Sample Id:	Parent Sample Id: 635671-001				MS Sample Id: 635671-001 S			MSD Sample Id: 635671-001 SD				571-001 SD	
Parameter		Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RP	D RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydroc	arbons	<9.84	996	1130	113	1100	110	70-135	3	35	mg/kg	08.30.19 14:42	
Diesel Range Organics		< 9.84	996	1150	115	1120	112	70-135	3	35	mg/kg	08.30.19 14:42	
Surrogate					IS Rec	MS Flag	MSD %Re			Limits	Units	Analysis Date	

128

118

109

126

112

118

Analytical Method:	BTEX by EPA 802	1B]	Prep Method	: SW:	5030B	
Seq Number:	3100260			Matrix:	Solid				Date Prep	o: 08.3	0.19	
MB Sample Id:	7685424-1-BLK		LCS Sar	nple Id:	7685424-	1-BKS		LC	SD Sample I	d: 768	5424-1-BSD	
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPI) RPD Limit	Units	Analysis Date	Flag
Benzene	< 0.00100	0.100	0.0880	88	0.0929	93	70-130	5	35	mg/kg	08.30.19 11:31	
Toluene	< 0.00100	0.100	0.0970	97	0.101	101	70-130	4	35	mg/kg	08.30.19 11:31	
Ethylbenzene	< 0.00100	0.100	0.108	108	0.116	116	71-129	7	35	mg/kg	08.30.19 11:31	
m,p-Xylenes	< 0.00100	0.200	0.224	112	0.239	120	70-135	6	35	mg/kg	08.30.19 11:31	
o-Xylene	< 0.000500	0.100	0.110	110	0.118	118	71-133	7	35	mg/kg	08.30.19 11:31	
Surrogate	MB %Rec	MB Flag		CS Rec	LCS Flag	LCSI %Re			Limits	Units	Analysis Date	

Analytical Method: Seq Number: Parent Sample Id:	BTEX by EPA 802 3100260 635671-001	lB	Matrix: nple Id:		01 S			Prep Metho Date Pre SD Sample	ep: 08.3	5030B 0.19 571-001 SD		
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPI	O RPD Limi	it Units	Analysis Date	Flag
Benzene	< 0.00101	0.101	0.0930	92	0.0879	88	70-130	6	35	mg/kg	08.30.19 14:52	
Toluene	< 0.000505	0.101	0.0968	96	0.0914	91	70-130	6	35	mg/kg	08.30.19 14:52	
Ethylbenzene	< 0.000505	0.101	0.108	107	0.101	101	71-129	7	35	mg/kg	08.30.19 14:52	
m,p-Xylenes	< 0.00101	0.202	0.227	112	0.210	105	70-135	8	35	mg/kg	08.30.19 14:52	
o-Xylene	< 0.000505	0.101	0.115	114	0.105	105	71-133	9	35	mg/kg	08.30.19 14:52	
Surrogate				1S Rec	MS Flag	MSD %Re		-	Limits	Units	Analysis Date	
1,4-Difluorobenzene			1	07		112		,	70-130	%	08.30.19 14:52	
4-Bromofluorobenzene			1	20		125		,	70-130	%	08.30.19 14:52	

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

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

LCS = Laboratory Control Sample A = Parent Result C = MS/LCS Result E = MSD/LCSD Result

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

08.30.19 14:42

08.30.19 14:42

08.30.19 11:31

08.30.19 11:31

	Relinquished by:	Relinquished by:	Relinquished by:						(LAB USE)	LAB #			Receiving Laboratory:		state)	Project Name:	Client Name:		Analysis Re
			" Arin		52-4	54-3	54-2	56-1		SAMPLE		Rush	Xence	Sheldon Hitchcock	(county, Lcq,	Ł	COG-Artesia	ONCHO	Analysis Request of Chain of Custody Record
	Date: Time:	Date: Time:	Date: Time: 8/30/19 13:05							SAMPLE IDENTIFICATION				bock	NIN	55 34 F-d			dy Record
ORIGINAL COPY	Received by:	Received by:	Received by:		1 10:36	10:3	1 10:32	8/30 10:36	DATE TIME	YEAR: 2019	SAMPLING		Sampler Name:		Project #:	#3#	Site Manager:		
	Date: T	Date: T	8 30 19		X		X X 2	×	WATE SOIL HCL HNO ₃ ICE	R	MATRIX PRESERVATIVE METHOD		Sheldon Hitchcock				Sheldon Hitchcock	One Concho Center/600/Illinois Avenue/Midland, Texas Tel (432) 683-7443	
0	Time:	Time:	13:05		-			-	# CON (C)omp	osite/(RS G)rat) - DRO						as a	
(Circle) HAND DELIVERED	دہ س	Sample Temperature	LAB USE ONLY		×××	XXX	XXX	XXX	BTEX 8	3021B		J-DRO	- MRO)			_	Al (Circle c		
FEDEX UPS Tracking #:	Special Report Limits or TRRP Report	Rush Charoes Authorized															ANALYSIS REQUEST	449569	Page
	RP Report	48 hr 72 hr				P	ade	17 c	Hold f 18					Fin	al 1.00				



XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In

Client: COG Operating LLC	Acceptable Temperature Range: 0 - 6 degC						
Date/ Time Received: 08/30/2019 01:05:00 PM	Air and Metal samples Acceptable Range: Ambient						
Work Order #: 635674	Temperature Measuring device used : T-NM 007						
Sample Recei	pt Checklist Comments						
#1 *Temperature of cooler(s)?	2.3						
#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?	Νο						
#9 Chain of Custody signed when relinquished/ received?	Yes						
#10 Chain of Custody agrees with sample labels/matrix?	Yes						
#11 Container label(s) legible and intact?	Yes						
#12 Samples in proper container/ bottle?	Yes						
#13 Samples properly preserved?	Yes						
#14 Sample container(s) intact?	Yes						
#15 Sufficient sample amount for indicated test(s)?	Yes						
#16 All samples received within hold time?	Yes						
#17 Subcontract of sample(s)?	Yes						
#18 Water VOC samples have zero headspace?	N/A						

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

Analyst:

PH Device/Lot#:

Checklist completed by: Martha Castro

Date: 08/30/2019

Checklist reviewed by: Jession Whamer

Jessica Kramer

Date: 08/30/2019



Project Id:Contact:Sheldon HitchcockProject Location:Lea NM

Certificate of Analysis Summary 635676

COG Operating LLC, Artesia, NM Project Name: Jazz Bass 34 Fed #3H

Date Received in Lab:Fri Aug-30-19 01:05 pmReport Date:03-SEP-19Project Manager:Jessica Kramer

	Lab Id:	635676-	001	635676-	002	635676-0	003	635676-	004	635676-	005	635676-0	006
Ara aluaia Do anosta d	Field Id:	BTTM	-1	BTTM	BTTM-2 H		.3	BTTM	-4	BTTM	-5	BTTM	-6
Analysis Requested	Depth:												
	Matrix:	SOIL	SOIL			SOIL		SOIL		SOIL		SOIL	,
	Sampled:	Aug-30-19	Aug-30-19 10:00		10:02	Aug-30-19	10:04	Aug-30-19 10:06		Aug-30-19 10:08		Aug-30-19 10:10	
BTEX by EPA 8021B	Extracted:	Aug-30-19	ug-30-19 13:08 A		13:08	Aug-30-19	13:08	Aug-30-19	13:08	Aug-30-19	13:08	Aug-30-19	13:08
	Analyzed:	Aug-30-19	ug-30-19 17:34 Aug		17:54	Aug-30-19	18:13	Aug-30-19	18:33	Aug-30-19	18:53	Aug-30-19	19:53
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		< 0.00100	0.00100	< 0.000980	0.000980	< 0.000990	0.000990	< 0.00101	0.00101	<0.000996	0.000996	< 0.00100	0.00100
Toluene		< 0.00100	0.00100	< 0.000980	0.000980	< 0.000990	0.000990	< 0.00101	0.00101	<0.000996	0.000996	< 0.00100	0.00100
Ethylbenzene		< 0.00100	0.00100	< 0.000980	0.000980	< 0.000990	0.000990	< 0.00101	0.00101	<0.000996	0.000996	< 0.00100	0.00100
m,p-Xylenes		< 0.00200	0.00200	< 0.00196	0.00196	< 0.00198	0.00198	< 0.00202	0.00202	< 0.00199	0.00199	< 0.00201	0.00201
o-Xylene		< 0.00100	0.00100	<0.000980	0.000980	<0.000990	0.000990	< 0.00101	0.00101	<0.000996	0.000996	< 0.00100	0.00100
Total Xylenes		< 0.00100	0.00100	<0.000980	0.000980	<0.000990	0.000990	< 0.00101	0.00101	<0.000996	0.000996	< 0.00100	0.00100
Total BTEX		< 0.00100	0.00100	< 0.000980	0.000980	<0.000990	0.000990	< 0.00101	0.00101	<0.000996	0.000996	< 0.00100	0.00100
Chloride by EPA 300	Extracted:	Aug-30-19	14:08	Aug-30-19 14:08		Aug-30-19 14:08		Aug-30-19 14:08		Aug-30-19 14:08		Aug-30-19 14:08	
	Analyzed:	Aug-30-19	17:01	Aug-30-19	17:07	Aug-30-19 17:14		Aug-30-19 17:20		Aug-30-19 17:26		Aug-30-19 17:3	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		4260	199	4160	198	4320	200	5880	250	5810	248	3140	201
TPH By SW8015 Mod	Extracted:	Aug-30-19	14:00	Aug-30-19	14:00	Aug-30-19	14:00	Aug-30-19	14:00	Aug-30-19	14:00	Aug-30-19	14:00
	Analyzed:	Aug-30-19	16:42	Aug-30-19	17:02	Aug-30-19	17:23	Aug-30-19	17:43	Aug-30-19	18:03	Aug-30-19	18:43
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons		<25.1	25.1	<25.1	25.1	<25.0	25.0	<25.1	25.1	<25.1	25.1	<25.0	25.0
Diesel Range Organics		<25.1	25.1	<25.1	25.1	<25.0	25.0	41.2	25.1	103	25.1	167	25.0
Motor Oil Range Hydrocarbons (MRO)		<25.1	25.1	<25.1	25.1	<25.0	25.0	<25.1	25.1	<25.1	25.1	<25.0	25.0
Total TPH		<25.1	25.1	<25.1	25.1	<25.0	25.0	41.2	25.1	103	25.1	167	25.0

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

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fession kenner

Jessica Kramer Project Assistant

1.001



Project Id:Contact:Sheldon HitchcockProject Location:Lea NM

Certificate of Analysis Summary 635676

COG Operating LLC, Artesia, NM Project Name: Jazz Bass 34 Fed #3H

Date Received in Lab:Fri Aug-30-19 01:05 pmReport Date:03-SEP-19Project Manager:Jessica Kramer

	Lab Id:	635676-0	007	635676-0	008	635676-0)09	635676-	010		
An alusia Doguostad	Field Id:	BTTM-	.7	BTTM	-8	BTTM-	.9	BTTM-	10		
Analysis Requested	Depth:										
	Matrix:	SOIL		SOIL	SOIL		SOIL				
	Sampled:	Aug-30-19	10:12	Aug-30-19	10:14	Aug-30-19	10:16	Aug-30-19	10:18		
BTEX by EPA 8021B	Extracted:	Aug-30-19	13:08	Aug-30-19	13:08	Aug-30-19	13:08	Aug-30-19	13:08		
	Analyzed:	Aug-30-19	20:12	Aug-30-19	20:32	Aug-30-19	20:52	Aug-30-19	21:12		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Benzene		< 0.00101	0.00101	< 0.00100	0.00100	< 0.00100	0.00100	< 0.00101	0.00101		
Toluene		< 0.00101	0.00101	< 0.00100	0.00100	< 0.00100	0.00100	< 0.00101	0.00101		
Ethylbenzene		< 0.00101	0.00101	< 0.00100	0.00100	< 0.00100	0.00100	< 0.00101	0.00101		
m,p-Xylenes		< 0.00202	0.00202	< 0.00201	0.00201	< 0.00201	0.00201	< 0.00201	0.00201		
o-Xylene		< 0.00101	0.00101	< 0.00100	0.00100	< 0.00100	0.00100	< 0.00101	0.00101		
Total Xylenes		< 0.00101	0.00101	< 0.00100	0.00100	< 0.00100	0.00100	< 0.00101	0.00101		
Total BTEX		< 0.00101	0.00101	< 0.00100	0.00100	< 0.00100	0.00100	< 0.00101	0.00101		
Chloride by EPA 300	Extracted:	Aug-30-19	14:08	Aug-30-19	14:08	Aug-30-19	14:08	Aug-30-19	14:08		
	Analyzed:	Aug-30-19	17:39	Aug-30-19	17:45	Aug-30-19	17:51	Aug-30-19	17:57		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Chloride		2900	200	3740	200	3370	200	3300	200		
TPH By SW8015 Mod	Extracted:	Aug-30-19	14:00	Aug-30-19	14:00	Aug-30-19	14:00	Aug-30-19	14:00		
	Analyzed:	Aug-30-19	19:03	Aug-30-19	19:23	Aug-30-19	19:44	Aug-30-19	20:04		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Gasoline Range Hydrocarbons		<25.2	25.2	<24.9	24.9	<25.1	25.1	<25.1	25.1		
Diesel Range Organics		157	25.2	141	24.9	89.8	25.1	166	25.1		
Motor Oil Range Hydrocarbons (MRO)		<25.2	25.2	<24.9	24.9	<25.1	25.1	<25.1	25.1		
Total TPH		157	25.2	141	24.9	89.8	25.1	166	25.1		

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.

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Jessica Kramer Project Assistant

1.001

Analytical Report 635676

for COG Operating LLC

Project Manager: Sheldon Hitchcock

Jazz Bass 34 Fed #3H

03-SEP-19

Collected By: Client



1089 N Canal Street Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054) Oklahoma (2017-142), North Carolina (681)

> Xenco-Dallas (EPA Lab Code: TX01468): Texas (T104704295-19-19), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14) Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20) Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18) Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4) Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757) Xenco-Atlanta (LELAP Lab ID #04176) Xenco-Tampa: Florida (E87429), North Carolina (483)



03-SEP-19

Project Manager: **Sheldon Hitchcock COG Operating LLC** 2407 Pecos Avenue Artesia, NM 88210

Reference: XENCO Report No(s): 635676 Jazz Bass 34 Fed #3H 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) 635676. 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. 635676 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,

Jession KRAMER

Jessica Kramer Project Assistant

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Sample Cross Reference 635676

COG Operating LLC, Artesia, NM

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BTTM-1	S	08-30-19 10:00		635676-001
BTTM-2	S	08-30-19 10:02		635676-002
BTTM-3	S	08-30-19 10:04		635676-003
BTTM-4	S	08-30-19 10:06		635676-004
BTTM-5	S	08-30-19 10:08		635676-005
BTTM-6	S	08-30-19 10:10		635676-006
BTTM-7	S	08-30-19 10:12		635676-007
BTTM-8	S	08-30-19 10:14		635676-008
BTTM-9	S	08-30-19 10:16		635676-009
BTTM-10	S	08-30-19 10:18		635676-010



CASE NARRATIVE

Client Name: COG Operating LLC Project Name: Jazz Bass 34 Fed #3H

Project ID: Work Order Number(s): 635676 Report Date: 03-SEP-19 Date Received: 08/30/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments: Batch: LBA-3100260 BTEX by EPA 8021B Soil samples were not received in Terracore kits and therefore were prepared by method 5030.



COG Operating LLC, Artesia, NM

Sample Id: BTTM-1 Lab Sample Id: 635676-001		Matrix: Date Collec	Soil cted: 08.30.19 10.00		Date Received:08.	30.19 13.0	5
Analytical Method: Chloride by E	EPA 300				Prep Method: E30	00P	
Tech: MAB					% Moisture:		
Analyst: MAB		Date Prep:	08.30.19 14.08		Basis: We	t Weight	
Seq Number: 3100258							
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4260	199	mg/kg	08.30.19 17.01		20
Analytical Method: TPH By SW8 Tech: DTH Analyst: DTH Seq Number: 3100262	015 Mod	Date Prep:	08.30.19 14.00		Prep Method: SW % Moisture: Basis: We	8015P t Weight	
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<25.1	25.1	mg/kg	08.30.19 16.42	U	1
Diesel Range Organics	C10C28DRO	<25.1	25.1	mg/kg	08.30.19 16.42	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	08.30.19 16.42	U	1
Total TPH	PHC635	<25.1	25.1	mg/kg	08.30.19 16.42	U	1

Analysis Date Fla	ag
08.30.19 16.42	
08.30.19 16.42	
	08.30.19 16.42



COG Operating LLC, Artesia, NM

Jazz Bass 34 Fed #3H

Wet Weight

Sample Id:BTTM-1Lab Sample Id:635676-001	Matrix: Soil Date Collected: 08.30.19 10.00	Date Received:08.30.19 13.05
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: DTH		% Moisture:

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Tech:	DTH			% Moisture:
Analyst:	DTH	Date Prep:	08.30.19 13.08	Basis:
Seq Number:	3100260			

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00100	0.00100		mg/kg	08.30.19 17.34	U	1
Toluene	108-88-3	< 0.00100	0.00100		mg/kg	08.30.19 17.34	U	1
Ethylbenzene	100-41-4	< 0.00100	0.00100		mg/kg	08.30.19 17.34	U	1
m,p-Xylenes	179601-23-1	< 0.00200	0.00200		mg/kg	08.30.19 17.34	U	1
o-Xylene	95-47-6	< 0.00100	0.00100		mg/kg	08.30.19 17.34	U	1
Total Xylenes	1330-20-7	< 0.00100	0.00100		mg/kg	08.30.19 17.34	U	1
Total BTEX		< 0.00100	0.00100		mg/kg	08.30.19 17.34	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	109	%	70-130	08.30.19 17.34		
1,4-Difluorobenzene		540-36-3	106	%	70-130	08.30.19 17.34		



COG Operating LLC, Artesia, NM

Sample Id:BTTM-2Lab Sample Id:635676-002		Matrix: Date Collec	Soil cted: 08.30.19 10.02]	Date Received:08.3	30.19 13.0	5
Analytical Method: Chloride by E	EPA 300]	Prep Method: E30	00P	
Tech: MAB					% Moisture:		
Analyst: MAB		Date Prep:	08.30.19 14.08		Basis: Wet	t Weight	
Seq Number: 3100258		1				-	
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4160	198	mg/kg	08.30.19 17.07		20
Analytical Method: TPH By SW8 Tech: DTH	015 Mod				Prep Method: SW % Moisture:	8015P	
Analyst: DTH		Date Prep:	08.30.19 14.00]	Basis: Wet	t Weight	
Seq Number: 3100262							
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<25.1	25.1	mg/kg	08.30.19 17.02	U	1
Diesel Range Organics	C10C28DRO	<25.1	25.1	mg/kg	08.30.19 17.02	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	08.30.19 17.02	U	1

Total TPH	PHC635	<25.1	25.1		mg/kg	08.30.19 17.02	U	1
			%		8			
Surrogate		Cas Number	Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	126	%	70-135	08.30.19 17.02		
o-Terphenyl		84-15-1	112	%	70-135	08.30.19 17.02		



COG Operating LLC, Artesia, NM

Sample Id: Lab Sample	BTTM-2 Id: 635676-002	Matrix: Date Collecte	Soil d: 08.30.19 10.02	Date Receive	ed:08.30.19 13.05
Analytical M	fethod: BTEX by EPA 8021B			Prep Method	: SW5030B
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	08.30.19 13.08	Basis:	Wet Weight

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Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	08.30.19 13.08	Basis:	V
Seq Number:	3100260				

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.000980	0.000980		mg/kg	08.30.19 17.54	U	1
Toluene	108-88-3	< 0.000980	0.000980		mg/kg	08.30.19 17.54	U	1
Ethylbenzene	100-41-4	< 0.000980	0.000980		mg/kg	08.30.19 17.54	U	1
m,p-Xylenes	179601-23-1	< 0.00196	0.00196		mg/kg	08.30.19 17.54	U	1
o-Xylene	95-47-6	< 0.000980	0.000980		mg/kg	08.30.19 17.54	U	1
Total Xylenes	1330-20-7	< 0.000980	0.000980		mg/kg	08.30.19 17.54	U	1
Total BTEX		< 0.000980	0.000980		mg/kg	08.30.19 17.54	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	109	%	70-130	08.30.19 17.54		
4-Bromofluorobenzene		460-00-4	115	%	70-130	08.30.19 17.54		



COG Operating LLC, Artesia, NM

Sample Id: Lab Sample	BTTM-3 Id: 635676-003		Matrix: Date Collect	Soil ted: 08.30.19 10.04	Date Received:08.30.19 13.05			95
Analytical M Tech: Analyst: Seq Number	Iethod: Chloride by EPA MAB MAB : 3100258	. 300	Date Prep:	08.30.19 14.08		Prep Method: % Moisture: Basis:	E300P Wet Weight	
Parameter		Cas Number	Result	RL	Units	Analysis Da	ite Flag	Dil
Chloride		16887-00-6	4320	200	mg/kg	08.30.19 17.	14	20
Analytical M Tech:	fethod: TPH By SW801: DTH	5 Mod				Prep Method: % Moisture:	SW8015P	

Seq Number: 3100262								
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<25.0	25.0		mg/kg	08.30.19 17.23	U	1
Diesel Range Organics	C10C28DRO	<25.0	25.0		mg/kg	08.30.19 17.23	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0		mg/kg	08.30.19 17.23	U	1
Total TPH	PHC635	<25.0	25.0		mg/kg	08.30.19 17.23	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	119	%	70-135	08.30.19 17.23		
o-Terphenyl		84-15-1	106	%	70-135	08.30.19 17.23		



Seq Number: 3100260

Certificate of Analytical Results 635676

COG Operating LLC, Artesia, NM

Sample Id: Lab Sample	BTTM-3 Id: 635676-003	Matrix: Date Collecte	Soil ed: 08.30.19 10.04	Date Receive	ed:08.30.19 13.05
Analytical M	lethod: BTEX by EPA 8021B			Prep Method	: SW5030B
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	08.30.19 13.08	Basis:	Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.000990	0.000990		mg/kg	08.30.19 18.13	U	1
Toluene	108-88-3	< 0.000990	0.000990		mg/kg	08.30.19 18.13	U	1
Ethylbenzene	100-41-4	< 0.000990	0.000990		mg/kg	08.30.19 18.13	U	1
m,p-Xylenes	179601-23-1	< 0.00198	0.00198		mg/kg	08.30.19 18.13	U	1
o-Xylene	95-47-6	< 0.000990	0.000990		mg/kg	08.30.19 18.13	U	1
Total Xylenes	1330-20-7	< 0.000990	0.000990		mg/kg	08.30.19 18.13	U	1
Total BTEX		< 0.000990	0.000990		mg/kg	08.30.19 18.13	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	109	%	70-130	08.30.19 18.13		
1,4-Difluorobenzene		540-36-3	111	%	70-130	08.30.19 18.13		



o-Terphenyl

Certificate of Analytical Results 635676

COG Operating LLC, Artesia, NM

Jazz Bass 34 Fed #3H

Sample Id: BTTM-4 Lab Sample Id: 635676-004		Matrix: Date Colle	Soil cted: 08.30.1	19 10.06	Ľ	Date Received:	08.30.19 13.0)5
Analytical Method: Chloride by El	PA 300				Р	rep Method: I	E300P	
Tech: MAB					%	6 Moisture:		
Analyst: MAB		Date Prep:	08.30.1	19 14.08	В	asis:	Wet Weight	
Seq Number: 3100258		Duterrep					U	
Parameter	Cas Number	Result	RL		Units	Analysis Dat	e Flag	Dil
Chloride	16887-00-6	5880	250		mg/kg	08.30.19 17.20	0	25
Analytical Method: TPH By SW8()15 Mod				р	ren Method -	SW8015P	
Analytical Method: TPH By SW80 Tech: DTH Analyst: DTH Seq Number: 3100262)15 Mod	Date Prep:	08.30.1	19 14.00	%	rep Method: 5 6 Moisture: 8asis: N	SW8015P Wet Weight	
Tech: DTH Analyst: DTH)15 Mod Cas Number	Date Prep: Result	08.30.1 RL	19 14.00	%	6 Moisture:	Wet Weight	Dil
Tech: DTH Analyst: DTH Seq Number: 3100262		I		19 14.00	% B	6 Moisture: Basis: N	Wet Weight e Flag	Dil 1
Tech: DTH Analyst: DTH Seq Number: 3100262 Parameter	Cas Number	Result	RL	19 14.00	% B Units	6 Moisture: Basis: N Analysis Dat	Wet Weight e Flag 3 U	
Tech: DTH Analyst: DTH Seq Number: 3100262 Parameter Gasoline Range Hydrocarbons	Cas Number PHC610	Result <25.1	RL 25.1	19 14.00	% B Units mg/kg	Moisture: Basis: M Analysis Date 08.30.19 17.43	Wet Weight e Flag 3 U 3	1
Tech: DTH Analyst: DTH Seq Number: 3100262 Parameter Gasoline Range Hydrocarbons Diesel Range Organics	Cas Number PHC610 C10C28DRO	Result <25.1 41.2	RL 25.1 25.1	19 14.00	% B Units mg/kg mg/kg	6 Moisture: Basis: M Analysis Date 08.30.19 17.43 08.30.19 17.43	Wet Weight e Flag 3 U 3 3 U	1
Tech: DTH Analyst: DTH Seq Number: 3100262 Parameter Gasoline Range Hydrocarbons Diesel Range Organics Motor Oil Range Hydrocarbons (MRO)	Cas Number PHC610 C10C28DRO PHCG2835	Result <25.1 41.2 <25.1 41.2 <0. N. J.	RL 25.1 25.1 25.1	19 14.00 	% Units mg/kg mg/kg	6 Moisture: Basis: M 08.30.19 17.4: 08.30.19 17.4: 08.30.19 17.4:	Wet Weight e Flag 3 U 3 U 3 U 3	1 1 1

110

%

70-135 08.30.19 17.43

84-15-1



Seq Number: 3100260

Certificate of Analytical Results 635676

COG Operating LLC, Artesia, NM

Sample Id: BTTM-4 Lab Sample Id: 635676-004	Matrix: Date Collecte	Soil cd: 08.30.19 10.06	Date Receiv	ed:08.30.19 13.05
Analytical Method: BTEX by EF	PA 8021B		1	d: SW5030B
Tech: DTH			% Moisture:	
Analyst: DTH	Date Prep:	08.30.19 13.08	Basis:	Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00101	0.00101		mg/kg	08.30.19 18.33	U	1
Toluene	108-88-3	< 0.00101	0.00101		mg/kg	08.30.19 18.33	U	1
Ethylbenzene	100-41-4	< 0.00101	0.00101		mg/kg	08.30.19 18.33	U	1
m,p-Xylenes	179601-23-1	< 0.00202	0.00202		mg/kg	08.30.19 18.33	U	1
o-Xylene	95-47-6	< 0.00101	0.00101		mg/kg	08.30.19 18.33	U	1
Total Xylenes	1330-20-7	< 0.00101	0.00101		mg/kg	08.30.19 18.33	U	1
Total BTEX		< 0.00101	0.00101		mg/kg	08.30.19 18.33	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	106	%	70-130	08.30.19 18.33		
1,4-Difluorobenzene		540-36-3	99	%	70-130	08.30.19 18.33		



COG Operating LLC, Artesia, NM

Jazz Bass 34 Fed #3H

Sample Id:BTTM-5Lab Sample Id:635676-005		Matrix: Date Colle	Soil cted: 08.30.1	19 10.08	Date Received:08.30.19 13.05			5
Analytical Method: Chloride b	y EPA 300				Р	Prep Method: E3	00P	
Tech: MAB					%	6 Moisture:		
Analyst: MAB		Date Prep:	08.30.	19 14.08	В	Basis: W	et Weight	
Seq Number: 3100258							0	
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5810	248		mg/kg	08.30.19 17.26		25
Analytical Method: TPH By S Tech: DTH Analyst: DTH Seq Number: 3100262	W8015 Mod	Date Prep:	08.30.	19 14.00	%	Prep Method: SV 6 Moisture: Basis: Wo	V8015P et Weight	
Tech: DTH Analyst: DTH	W8015 Mod Cas Number	Date Prep: Result	08.30. RL	19 14.00	%	6 Moisture:		Dil
Tech:DTHAnalyst:DTHSeq Number:3100262		-		19 14.00	% E	6 Moisture: Basis: Wo	et Weight	Dil
Tech: DTH Analyst: DTH Seq Number: 3100262 Parameter	Cas Number	Result	RL	19 14.00	% E Units	6 Moisture: Basis: Wo Analysis Date	et Weight Flag	
Tech: DTH Analyst: DTH Seq Number: 3100262 Parameter Gasoline Range Hydrocarbons	Cas Number PHC610	Result <25.1	RL 25.1	19 14.00	% E Units mg/kg	6 Moisture: Basis: Wo Analysis Date 08.30.19 18.03	et Weight Flag	1
Tech: DTH Analyst: DTH Seq Number: 3100262 Parameter Gasoline Range Hydrocarbons Diesel Range Organics	Cas Number PHC610 C10C28DRO	Result <25.1 103	RL 25.1 25.1	19 14.00	% E Units mg/kg mg/kg	6 Moisture: Basis: Wo Analysis Date 08.30.19 18.03 08.30.19 18.03	et Weight Flag U	1 1
Tech: DTH Analyst: DTH Seq Number: 3100262 Parameter Gasoline Range Hydrocarbons Diesel Range Organics Motor Oil Range Hydrocarbons (MRO)	Cas Number PHC610 C10C28DRO PHCG2835	Result <25.1 103 <25.1 103	RL 25.1 25.1 25.1	19 14.00 Units	% E Units mg/kg mg/kg mg/kg	6 Moisture: Basis: Wo Analysis Date 08.30.19 18.03 08.30.19 18.03 08.30.19 18.03	et Weight Flag U	1 1 1

115

%

70-135

08.30.19 18.03

84-15-1



COG Operating LLC, Artesia, NM

Sample Id:BTTM-5Lab Sample Id:635676-005	Matrix: Soil Date Collected: 08.30.19 10.08	Date Received:08.30.19 13.05
Analytical Method: BTEX by EPA 8021B Tech: DTH		Prep Method: SW5030B % Moisture:
Analyst: DTH	Date Prep: 08.30.19 13.08	Basis: Wet Weight
Seq Number: 3100260		

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.000996	0.000996		mg/kg	08.30.19 18.53	U	1
Toluene	108-88-3	< 0.000996	0.000996		mg/kg	08.30.19 18.53	U	1
Ethylbenzene	100-41-4	< 0.000996	0.000996		mg/kg	08.30.19 18.53	U	1
m,p-Xylenes	179601-23-1	< 0.00199	0.00199		mg/kg	08.30.19 18.53	U	1
o-Xylene	95-47-6	< 0.000996	0.000996		mg/kg	08.30.19 18.53	U	1
Total Xylenes	1330-20-7	< 0.000996	0.000996		mg/kg	08.30.19 18.53	U	1
Total BTEX		< 0.000996	0.000996		mg/kg	08.30.19 18.53	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	110	%	70-130	08.30.19 18.53		
1,4-Difluorobenzene		540-36-3	113	%	70-130	08.30.19 18.53		



Surrogate

o-Terphenyl

1-Chlorooctane

Certificate of Analytical Results 635676

COG Operating LLC, Artesia, NM

Jazz Bass 34 Fed #3H

Units

%

%

Recovery

120

120

Limits

70-135

70-135

Analysis Date

08.30.19 18.43

08.30.19 18.43

Flag

Sample Id: BTTM-6		Matrix:	Soil	I	Date Received:08.	30.19 13.0	5
Lab Sample Id: 635676-006		Date Colle	cted: 08.30.19 10.10				
Analytical Method: Chloride by E	EPA 300			I	Prep Method: E3	00P	
Tech: MAB				Ģ	% Moisture:		
Analyst: MAB		Date Prep:	08.30.19 14.08	1	Basis: We	et Weight	
Seq Number: 3100258		Ĩ					
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3140	201	mg/kg	08.30.19 17.32		20
Analytical Method:TPH By SW8Tech:DTHAnalyst:DTH	015 Mod	Date Prep:	08.30.19 14.00	Ģ	Prep Method: SW % Moisture: Basis: We	/8015P et Weight	
Seq Number: 3100262							
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<25.0	25.0	mg/kg	08.30.19 18.43	U	1
Diesel Range Organics	C10C28DRO	167	25.0	mg/kg	08.30.19 18.43		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	08.30.19 18.43	U	1
Total TPH	PHC635	167	25.0	mg/kg	08.30.19 18.43		1
Sumogoto		Caa Numbar -	%	Limita	Analysia Data		

Cas Number

111-85-3

84-15-1

Page 17 of 31



COG Operating LLC, Artesia, NM

Sample Id: Lab Sample	BTTM-6 Id: 635676-006	Matrix: Date Collecte	Soil d: 08.30.19 10.10	Date Receive	d:08.30.19 13.05
Analytical M	lethod: BTEX by EPA 8021B			Prep Method	: SW5030B
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	08.30.19 13.08	Basis:	Wet Weight

J						
Tech:	DTH				% Moisture:	
Analyst:	DTH		Date Prep:	08.30.19 13.08	Basis:	,
Seq Number:	3100260					

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00100	0.00100		mg/kg	08.30.19 19.53	U	1
Toluene	108-88-3	< 0.00100	0.00100		mg/kg	08.30.19 19.53	U	1
Ethylbenzene	100-41-4	< 0.00100	0.00100		mg/kg	08.30.19 19.53	U	1
m,p-Xylenes	179601-23-1	< 0.00201	0.00201		mg/kg	08.30.19 19.53	U	1
o-Xylene	95-47-6	< 0.00100	0.00100		mg/kg	08.30.19 19.53	U	1
Total Xylenes	1330-20-7	< 0.00100	0.00100		mg/kg	08.30.19 19.53	U	1
Total BTEX		< 0.00100	0.00100		mg/kg	08.30.19 19.53	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	111	%	70-130	08.30.19 19.53		
1,4-Difluorobenzene		540-36-3	109	%	70-130	08.30.19 19.53		



COG Operating LLC, Artesia, NM

Jazz Bass 34 Fed #3H

Sample Id: BTTM-7 Lab Sample Id: 635676-007		Matrix: Date Colle	Soil ected: 08.30.	.19 10.12	Γ	Date Received:08	.30.19 13.0	5
Analytical Method: Chloride by EPA	A 300				P	Prep Method: E3	00P	
Tech: MAB						6 Moisture:		
Analyst: MAB		Date Prep	08.30	.19 14.08	E	Basis: W	et Weight	
Seq Number: 3100258		Dute Trep	00.20					
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2900	200		mg/kg	08.30.19 17.39		20
Applytical Methods TDH By SW201	5 Mod				р	Prop Mathod: SV	V8015D	
Analytical Method: TPH By SW801 Tech: DTH Analyst: DTH Seq Number: 3100262	5 Mod	Date Prep	08.30.	.19 14.00	9/	Prep Method: SV 6 Moisture: Basis: Wo	V8015P et Weight	
Tech: DTH Analyst: DTH	5 Mod Cas Number	Date Prepa Result	08.30. RL	.19 14.00	9/	6 Moisture:		Dil
Tech: DTH Analyst: DTH Seq Number: 3100262		Ĩ		.19 14.00	9 E	6 Moisture: Basis: Wo	et Weight	Dil
Tech: DTH Analyst: DTH Seq Number: 3100262 Parameter	Cas Number	Result	RL	.19 14.00	% E Units	6 Moisture: Basis: Wo Analysis Date	et Weight Flag	
Tech: DTH Analyst: DTH Seq Number: 3100262 Parameter Gasoline Range Hydrocarbons	Cas Number PHC610	Result <25.2	RL 25.2	.19 14.00	% E Units mg/kg	6 Moisture: Basis: Wo Analysis Date 08.30.19 19.03	et Weight Flag	1
Tech: DTH Analyst: DTH Seq Number: 3100262 Parameter Gasoline Range Hydrocarbons Diesel Range Organics	Cas Number PHC610 C10C28DRO	Result <25.2 157	RL 25.2 25.2	.19 14.00	9 E Units mg/kg mg/kg	6 Moisture: Basis: Wo Analysis Date 08.30.19 19.03 08.30.19 19.03	et Weight Flag U	1 1
Tech: DTH Analyst: DTH Seq Number: 3100262 Parameter Gasoline Range Hydrocarbons Diesel Range Organics Motor Oil Range Hydrocarbons (MRO)	Cas Number PHC610 C10C28DRO PHCG2835	Result <25.2 157 <25.2 157 <25.2 157	RL 25.2 25.2 25.2	.19 14.00 	9 E Units mg/kg mg/kg mg/kg	6 Moisture: Basis: Wo Analysis Date 08.30.19 19.03 08.30.19 19.03 08.30.19 19.03	et Weight Flag U	1 1 1

119

%

70-135

08.30.19 19.03

84-15-1

1-Chlorooctane o-Terphenyl



COG Operating LLC, Artesia, NM

Sample Id:BTTM-7Lab Sample Id:635676-007	Matrix: Soil Date Collected: 08.30.19 10.12	Date Received:08.30.19 13.05
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
		0/ 34 1

•	-			•	
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	08.30.19 13.08	Basis:	Wet Weight
Seq Number:	3100260				

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00101	0.00101		mg/kg	08.30.19 20.12	U	1
Toluene	108-88-3	< 0.00101	0.00101		mg/kg	08.30.19 20.12	U	1
Ethylbenzene	100-41-4	< 0.00101	0.00101		mg/kg	08.30.19 20.12	U	1
m,p-Xylenes	179601-23-1	< 0.00202	0.00202		mg/kg	08.30.19 20.12	U	1
o-Xylene	95-47-6	< 0.00101	0.00101		mg/kg	08.30.19 20.12	U	1
Total Xylenes	1330-20-7	< 0.00101	0.00101		mg/kg	08.30.19 20.12	U	1
Total BTEX		< 0.00101	0.00101		mg/kg	08.30.19 20.12	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	118	%	70-130	08.30.19 20.12		
1,4-Difluorobenzene		540-36-3	107	%	70-130	08.30.19 20.12		



Surrogate

o-Terphenyl

1-Chlorooctane

Certificate of Analytical Results 635676

COG Operating LLC, Artesia, NM

Jazz Bass 34 Fed #3H

Units

%

%

Recovery

123

122

Limits

70-135

70-135

Analysis Date

08.30.19 19.23

08.30.19 19.23

Flag

Sample Id:BTTM-8Lab Sample Id:635676-008		Matrix: Date Colle	Soil cted: 08.30.19 10.14	1	Date Received:08.	30.19 13.0	5
Analytical Method: Chloride by E	EPA 300			I	Prep Method: E3	00P	
Tech: MAB				ç	% Moisture:		
Analyst: MAB		Date Prep:	08.30.19 14.08	1	Basis: We	et Weight	
Seq Number: 3100258		Ĩ					
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3740	200	mg/kg	08.30.19 17.45		20
Analytical Method:TPH By SW8Tech:DTHAnalyst:DTHSeq Number:3100262	015 Mod	Date Prep:	08.30.19 14.00	Ģ	Prep Method: SW % Moisture: Basis: We	/8015P et Weight	
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<24.9	24.9	mg/kg	08.30.19 19.23	U	1
Diesel Range Organics	C10C28DRO	141	24.9	mg/kg	08.30.19 19.23		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	08.30.19 19.23	U	1
Total TPH	PHC635	141	24.9	mg/kg	08.30.19 19.23		1
Sumorata		Caa Numbar -	%	Limita	Analysia Data	Flog	

Cas Number

111-85-3

84-15-1



COG Operating LLC, Artesia, NM

Sample Id: Lab Sample	BTTM-8 Id: 635676-008	Matrix: Date Collecte	Soil d: 08.30.19 10.14	Date Receive	d:08.30.19 13.05
Analytical M	fethod: BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	08.30.19 13.08	Basis:	Wet Weight

1 11111 / 11011 1110				1100 1100
Tech:	DTH			% Moist
Analyst:	DTH	Date Prep:	08.30.19 13.08	Basis:
Seq Number:	3100260			

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00100	0.00100		mg/kg	08.30.19 20.32	U	1
Toluene	108-88-3	< 0.00100	0.00100		mg/kg	08.30.19 20.32	U	1
Ethylbenzene	100-41-4	< 0.00100	0.00100		mg/kg	08.30.19 20.32	U	1
m,p-Xylenes	179601-23-1	< 0.00201	0.00201		mg/kg	08.30.19 20.32	U	1
o-Xylene	95-47-6	< 0.00100	0.00100		mg/kg	08.30.19 20.32	U	1
Total Xylenes	1330-20-7	< 0.00100	0.00100		mg/kg	08.30.19 20.32	U	1
Total BTEX		< 0.00100	0.00100		mg/kg	08.30.19 20.32	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	112	%	70-130	08.30.19 20.32		
4-Bromofluorobenzene		460-00-4	122	%	70-130	08.30.19 20.32		



o-Terphenyl

Certificate of Analytical Results 635676

COG Operating LLC, Artesia, NM

Jazz Bass 34 Fed #3H

Sample Id: BTTM-9 Lab Sample Id: 635676-009		Matrix: Date Colle	Soil ected: 08.30.1	9 10.16	Ľ	Date Received:03	8.30.19 13.0	5
Analytical Method: Chloride by EF	PA 300				Р	rep Method: E	300P	
Tech: MAB						6 Moisture:		
Analyst: MAB		Date Prep:	08.30.1	9 14.08	В	asis: W	/et Weight	
Seq Number: 3100258		Dute Hep.					8	
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3370	200		mg/kg	08.30.19 17.51		20
Angletical Mathed, TDH De CW20	N15 N4-1				n	have Matheader S	W9015D	
Analytical Method: TPH By SW80 Tech: DTH Analyst: DTH Seq Number: 3100262	015 Mod	Date Prep:	08.30.1	9 14.00	%	rep Method: S 6 Moisture: 8asis: W	W8015P /et Weight	
Tech: DTH Analyst: DTH	015 Mod Cas Number	Date Prep: Result	08.30.1 RL	9 14.00	%	6 Moisture:	/et Weight	Dil
Tech: DTH Analyst: DTH Seq Number: 3100262		Ĩ		9 14.00	% B	6 Moisture: Basis: W	/et Weight Flag	Dil
Tech: DTH Analyst: DTH Seq Number: 3100262 Parameter	Cas Number	Result	RL	9 14.00	% B Units	6 Moisture: Basis: W Analysis Date	Vet Weight Flag U	
Tech: DTH Analyst: DTH Seq Number: 3100262 Parameter Gasoline Range Hydrocarbons	Cas Number PHC610	Result <25.1	RL 25.1	9 14.00	% B Units mg/kg	6 Moisture: Basis: W Analysis Date 08.30.19 19.44	/et Weight Flag U	1
Tech: DTH Analyst: DTH Seq Number: 3100262 Parameter Gasoline Range Hydrocarbons Diesel Range Organics	Cas Number PHC610 C10C28DRO	Result <25.1 89.8	RL 25.1 25.1	9 14.00	% B Units mg/kg mg/kg	6 Moisture: Basis: W Analysis Date 08.30.19 19.44 08.30.19 19.44	/et Weight Flag U U	1 1
Tech: DTH Analyst: DTH Seq Number: 3100262 Parameter Gasoline Range Hydrocarbons Diesel Range Organics Motor Oil Range Hydrocarbons (MRO)	Cas Number PHC610 C10C28DRO PHCG2835	Result <25.1 89.8 <25.1 89.8	RL 25.1 25.1 25.1	9 14.00 Units	% Units mg/kg mg/kg	6 Moisture: Basis: W Analysis Date 08.30.19 19.44 08.30.19 19.44 08.30.19 19.44	/et Weight Flag U U	1 1 1

122

%

70-135

08.30.19 19.44

84-15-1



COG Operating LLC, Artesia, NM

Sample Id: Lab Sample Id	BTTM-9 : 635676-009	Matrix: Date Collected	Soil 1: 08.30.19 10.16	Date Receive	d:08.30.19 13.05
Analytical Met	thod: BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	08.30.19 13.08	Basis:	Wet Weight

Tech:	DTH			% Mois
Analyst:	DTH	Date Prep:	08.30.19 13.08	Basis:
Seq Number:	3100260			

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00100	0.00100		mg/kg	08.30.19 20.52	U	1
Toluene	108-88-3	< 0.00100	0.00100		mg/kg	08.30.19 20.52	U	1
Ethylbenzene	100-41-4	< 0.00100	0.00100		mg/kg	08.30.19 20.52	U	1
m,p-Xylenes	179601-23-1	< 0.00201	0.00201		mg/kg	08.30.19 20.52	U	1
o-Xylene	95-47-6	< 0.00100	0.00100		mg/kg	08.30.19 20.52	U	1
Total Xylenes	1330-20-7	< 0.00100	0.00100		mg/kg	08.30.19 20.52	U	1
Total BTEX		< 0.00100	0.00100		mg/kg	08.30.19 20.52	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	103	%	70-130	08.30.19 20.52		
4-Bromofluorobenzene		460-00-4	117	%	70-130	08.30.19 20.52		



COG Operating LLC, Artesia, NM

Jazz Bass 34 Fed #3H

Sample Id:BTTM-10Lab Sample Id:635676-010		Matrix: Date Colle	Soil cted: 08.30.	.19 10.18	Date Received:08.30.19 1			5
Analytical Method: Chloride by E Tech: MAB	EPA 300					rep Method: E30)0P	
Tech: MAB Analyst: MAB		Date Prep:	08 30	.19 14.08		5 Moisture: asis: We	t Weight	
Seq Number: 3100258		Date Trep.	00.20	.17 1 1.00	2		e in englite	
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3300	200		mg/kg	08.30.19 17.57		20
Analytical Method: TPH By SW8 Tech: DTH Analyst: DTH Seq Number: 3100262	015 Mod	Date Prep:	08.30.	.19 14.00	%	rep Method: SW 5 Moisture: 8asis: We	78015P t Weight	
Tech: DTH Analyst: DTH	015 Mod Cas Number	Date Prep: Result	08.30. RL	.19 14.00	%	5 Moisture:		Dil
Tech:DTHAnalyst:DTHSeq Number:3100262		·		.19 14.00	% B	o Moisture: asis: We	t Weight	Dil 1
Tech: DTH Analyst: DTH Seq Number: 3100262 Parameter	Cas Number	Result	RL	.19 14.00	% E Units	o Moisture: asis: We Analysis Date	t Weight Flag	
Tech: DTH Analyst: DTH Seq Number: 3100262 Parameter Gasoline Range Hydrocarbons	Cas Number PHC610	Result <25.1	RL 25.1	.19 14.00	% E Units mg/kg	Moisture: asis: We Analysis Date 08.30.19 20.04	t Weight Flag	1
Tech:DTHAnalyst:DTHSeq Number:3100262ParameterGasoline Range HydrocarbonsDiesel Range Organics	Cas Number PHC610 C10C28DRO	Result <25.1 166	RL 25.1 25.1	.19 14.00	% E Units mg/kg mg/kg	Moisture: asis: We Analysis Date 08.30.19 20.04 08.30.19 20.04	t Weight Flag U	1
Tech: DTH Analyst: DTH Seq Number: 3100262 Parameter Gasoline Range Hydrocarbons Diesel Range Organics Motor Oil Range Hydrocarbons (MRO)	Cas Number PHC610 C10C28DRO PHCG2835 PHC635	Result <25.1 166 <25.1 166	RL 25.1 25.1 25.1	.19 14.00 Units	% E Units mg/kg mg/kg mg/kg	Moisture: asis: We Analysis Date 08.30.19 20.04 08.30.19 20.04 08.30.19 20.04 08.30.19 20.04	t Weight Flag U	1 1 1
Tech: DTH Analyst: DTH Seq Number: 3100262 Parameter Gasoline Range Hydrocarbons Diesel Range Organics Motor Oil Range Hydrocarbons (MRO) Total TPH	Cas Number PHC610 C10C28DRO PHCG2835 PHC635	Result <25.1 166 <25.1 166	RL 25.1 25.1 25.1 25.1 %		% E Units mg/kg mg/kg mg/kg mg/kg	Moisture: Sasis: We Analysis Date 08.30.19 20.04 08.30.19 20.04 08.30.19 20.04 08.30.19 20.04 08.30.19 20.04	t Weight Flag U U	1 1 1



COG Operating LLC, Artesia, NM

Sample Id:BTTM-10Lab Sample Id:635676-010	Matrix: Soil Date Collected: 08.30.19 10.18	Date Received:08.30.19 13.05
Analytical Method: BTEX by EPA 8021B Tech: DTH		Prep Method: SW5030B % Moisture:
Analyst: DTH	Date Prep: 08.30.19 13.08	Basis: Wet Weight
Seq Number: 3100260		

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00101	0.00101		mg/kg	08.30.19 21.12	U	1
Toluene	108-88-3	< 0.00101	0.00101		mg/kg	08.30.19 21.12	U	1
Ethylbenzene	100-41-4	< 0.00101	0.00101		mg/kg	08.30.19 21.12	U	1
m,p-Xylenes	179601-23-1	< 0.00201	0.00201		mg/kg	08.30.19 21.12	U	1
o-Xylene	95-47-6	< 0.00101	0.00101		mg/kg	08.30.19 21.12	U	1
Total Xylenes	1330-20-7	< 0.00101	0.00101		mg/kg	08.30.19 21.12	U	1
Total BTEX		< 0.00101	0.00101		mg/kg	08.30.19 21.12	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	108	%	70-130	08.30.19 21.12		
4-Bromofluorobenzene		460-00-4	115	%	70-130	08.30.19 21.12		



Flagging Criteria

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

SMP Clie	ent Sample	BLK	Method Blank	
BKS/LCS	S Blank Spike/Laboratory Control Sample	BKSD/LCSD	Blank Spike Duplicate/Labor	ratory 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 635676

COG Operating LLC

Jazz Bass 34 Fed #3H

Analytical Method:	Chloride by EPA 3	00						Pre	ep Metho	d: E30	OP	
Seq Number:	3100258			Matrix:	Solid				Date Prep	p: 08.3	30.19	
MB Sample Id:	7685390-1-BLK		LCS Sar	nple Id:	7685390-	1-BKS		LCSE	Sample	Id: 768	5390-1-BSD	
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD I	RPD Limit	Units	Analysis Date	Flag
Chloride	3.32	250	254	102	253	101	80-120	0	20	mg/kg	08.30.19 14:29	

Analytical Method:	Chloride by EPA 3	00						Pr	ep Metho	od: E30	0P	
Seq Number:	3100258			Matrix:	Soil				Date Pre	ep: 08.3	0.19	
Parent Sample Id:	635671-001		MS Sar	nple Id:	635671-00	01 S		MS	D Sample	e Id: 635	671-001 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Lim	it Units	Analysis Date	Flag
Chloride	370	249	687	127	688	128	80-120	0	20	mg/kg	08.30.19 16:11	x

Analytical Method:	Chloride by EPA 30)0						Pı	ep Metho	od: E30	0P	
Seq Number:	3100258			Matrix:	Soil				Date Pr	ep: 08.3	0.19	
Parent Sample Id:	635676-010		MS Sar	nple Id:	635676-01	10 S		MS	D Sample	e Id: 635	676-010 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Lim	it Units	Analysis Date	Flag

Analytical Method:	TPH By SW80)15 Mo	od						P	rep Metho	d: SW8	8015P	
Seq Number:	3100262				Matrix:	Solid				Date Prep	p: 08.3	0.19	
MB Sample Id:	7685426-1-BL	K		LCS San	nple Id:	7685426-	1-BKS		LCS	D Sample	Id: 768	5426-1-BSD	
Parameter	R	MB esult	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydroc	arbons <	9.88	1000	1020	102	1010	101	70-135	1	35	mg/kg	08.30.19 11:06	
Diesel Range Organics	<	9.88	1000	1010	101	1010	101	70-135	0	35	mg/kg	08.30.19 11:06	
Surrogate	Q	MB %Rec	MB Flag		CS Rec	LCS Flag	LCSI %Re			imits	Units	Analysis Date	
1-Chlorooctane		111		1	17		118		70)-135	%	08.30.19 11:06	
o-Terphenyl		96		1	09		110		70)-135	%	08.30.19 11:06	

[D] = 100*(C-A) / B RPD = 200* | (C-E) / (C+E) | [D] = 100 * (C) / [B] Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample A = Parent Result C = MS/LCS Result E = MSD/LCSD Result MS = Matrix Spike B = Spike Added D = MSD/LCSD % Rec



o-Terphenyl

QC Summary 635676

COG Operating LLC

Jazz Bass 34 Fed #3H

125

70-135

%

08.30.19 14:42

Analytical Method: TI	PH By SW8015 Mod
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Analytical Method:	TPH By S	W8015 M	lod							Prep Method	i: SW8	8015P	
Seq Number:	3100262				Matrix:	Soil				Date Prep	p: 08.3	0.19	
Parent Sample Id:	635671-00	1		MS Sar	nple Id:	635671-00	01 S		Μ	SD Sample	Id: 6350	671-001 SD	
Parameter		Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPI) RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydroca	arbons	<9.84	996	1130	113	1100	110	70-135	3	35	mg/kg	08.30.19 14:42	
Diesel Range Organics		< 9.84	996	1150	115	1120	112	70-135	3	35	mg/kg	08.30.19 14:42	
Surrogate					IS Rec	MS Flag	MSD %Re			Limits	Units	Analysis Date	
1-Chlorooctane				1	28		128			70-135	%	08.30.19 14:42	

118

Analytical Method: Seq Number: MB Sample Id:	BTEX by EPA 802 3100260 7685424-1-BLK	IB	LCS Sar	Matrix: nple Id:		1-BKS		LC	Prep Meth Date Pr CSD Sample	rep: 08.3	5030B 60.19 5424-1-BSD	
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RP	D RPD Lim	it Units	Analysis Date	Flag
Benzene	< 0.00100	0.100	0.0880	88	0.0929	93	70-130	5	35	mg/kg	08.30.19 11:31	
Toluene	< 0.00100	0.100	0.0970	97	0.101	101	70-130	4	35	mg/kg	08.30.19 11:31	
Ethylbenzene	< 0.00100	0.100	0.108	108	0.116	116	71-129	7	35	mg/kg	08.30.19 11:31	
m,p-Xylenes	< 0.00100	0.200	0.224	112	0.239	120	70-135	6	35	mg/kg	08.30.19 11:31	
o-Xylene	< 0.000500	0.100	0.110	110	0.118	118	71-133	7	35	mg/kg	08.30.19 11:31	
Surrogate	MB %Rec	MB Flag		CS Rec	LCS Flag	LCSE %Rec			Limits	Units	Analysis Date	
1,4-Difluorobenzene	112		1	09		104			70-130	%	08.30.19 11:31	
4-Bromofluorobenzene	118		1	26		121			70-130	%	08.30.19 11:31	

Analytical Method: Seq Number: Parent Sample Id:	BTEX by EPA 802 3100260 635671-001	lB		Matrix: nple Id:	Soil 635671-00	01 S			Prep Methoo Date Prep SD Sample	p: 08.3	5030B 0.19 571-001 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPI	D RPD Limit	Units	Analysis Date	Flag
Benzene	< 0.00101	0.101	0.0930	92	0.0879	88	70-130	6	35	mg/kg	08.30.19 14:52	
Toluene	< 0.000505	0.101	0.0968	96	0.0914	91	70-130	6	35	mg/kg	08.30.19 14:52	
Ethylbenzene	< 0.000505	0.101	0.108	107	0.101	101	71-129	7	35	mg/kg	08.30.19 14:52	
m,p-Xylenes	< 0.00101	0.202	0.227	112	0.210	105	70-135	8	35	mg/kg	08.30.19 14:52	
o-Xylene	< 0.000505	0.101	0.115	114	0.105	105	71-133	9	35	mg/kg	08.30.19 14:52	
Surrogate				1S Rec	MS Flag	MSD %Re			Limits	Units	Analysis Date	
1,4-Difluorobenzene			1	07		112			70-130	%	08.30.19 14:52	
4-Bromofluorobenzene			1	20		125			70-130	%	08.30.19 14:52	

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

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

LCS = Laboratory Control SampleA = Parent Result C = MS/LCS Result E = MSD/LCSD Result

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

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XENCO Laboratories **SENCO Laboratories** TORIES Prelogin/Nonconformance Report- Sample Log-In

Client: COG Operating LLC	Acceptable Temperature Range: 0 - 6 degC						
Date/ Time Received: 08/30/2019 01:05:00 PM	Air and Metal samples Acceptable Range: Ambient						
Work Order #: 635676	Temperature Measuring device used : T-NM 007						
Sample Recei	pt Checklist Comments						
#1 *Temperature of cooler(s)?	2.3						
#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?	Νο						
#9 Chain of Custody signed when relinquished/ received?	Yes						
#10 Chain of Custody agrees with sample labels/matrix?	Yes						
#11 Container label(s) legible and intact?	Yes						
#12 Samples in proper container/ bottle?	Yes						
#13 Samples properly preserved?	Yes						
#14 Sample container(s) intact?	Yes						
#15 Sufficient sample amount for indicated test(s)?	Yes						
#16 All samples received within hold time?	Yes						
#17 Subcontract of sample(s)?	Yes						
#18 Water VOC samples have zero headspace?	N/A						

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

Analyst:

PH Device/Lot#:

Checklist completed by: Martha Castro

Date: 08/30/2019

Checklist reviewed by: Jession Vramer

Jessica Kramer

Date: 08/30/2019

APPENDIX D



JAZZBASS 34 FEDERAL TANK BATTERY SEC. 34-T25S-R35E

CONCHO COG Production LLC

LEA COUNTY, NEW MEXICO







30 Aug 2019, 10:58:17



