



[Sheldon L. Hitchcock]
[HSE Coordinator]

March 28, 2018

Crystal Weaver
Oil Conservation Division, District 2
811 S First St.
Artesia, NM 88210

Henryetta Price
Bureau of Land Management, CFO
620 E. Green Street
Carlsbad, NM 88220

**Re: Closure Letter
Gehrig Federal #001
API #: 30-015-33600
RP#: 2RP-4241 & 2RP-4498
Unit Letter I Section 9, Township 26S, Range 29E
Eddy County, NM**

Ms. Weaver/Ms. Price,

COG Operating, LLC (COG) is pleased to submit for your consideration the following closure report for the Gehrig Federal #001. The remediation conducted at this site was in repose to two oil and produced water releases that occurred on May 28 and again on November 18 of 2017. A remediation work plan was submitted to the New Mexico Oil Conservation Division (NMOCD) and the Bureau of Land Management (BLM) on December 28, 2017. The work plan was approved by NMOCD on March 12, 2018 and by BLM on March 21, 2018.

BACKGROUND

The Gehrig Federal #001 release is located in Unit Letter I, Section 9, Township 26 South, and Range 29 East in Eddy County, New Mexico. More specifically the latitude and longitude for this release are 32.055139 North and -103.980409 West.

On May 28, 2018, a stuffing box leak resulted in the release of approximately one-half (0.5) barrel (bbl) of oil and six (6) bbls of produced water. Approximately four (4) bbls of produced water were recovered. The RP number NMOCD assigned to this release was 2RP-4241.

On November 18, 2017, a stuffing box leak resulted in the release of approximately four (4) bbls of oil and six (6) bbls of produced water. Approximately three (3) bbls of oil and four (4) bbls of produced water were recovered. The RP number NMOCD assigned to this release was 2RP-4498. This release covered the same area of the well pad as the release that occurred on May 28, 2018.

March 28, 2018

On December 12, 2017, a site assessment and soil sampling were conducted in order to vertically and horizontally define the area impacted by the two releases at this site. A site diagram is included in Appendix I. The analytical results from the soil sampling activities are summarized in the table below.

GROUNDWATER AND SITE RANKING

According to the 2005 Chevron Texaco groundwater trend map, groundwater in the project vicinity is approximately one-hundred and twenty (120) feet below ground surface (BGS) (Appendix II). No water well or surface water was observed within one-thousand (1,000) feet of the release site. Therefore the site ranking for this release is zero (0) based on the following:

Depth to groundwater	>100-feet
Distance to surface water body	>1000-feet
Wellhead Protection Area	>1000-feet

ANALYTICAL RESULTS

Sample ID	Depth (feet)	Benzene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)	Total TPH (mg/kg)
T-1	0	<0.002	<0.002	10700	45.8
T-1	1	<0.002	<0.002	96.6	<15.0
T-1	2	<0.002	<0.002	24.3	<15.0
T-1	3	<0.002	<0.002	74.5	<15.0
T-2	0	<0.002	<0.002	13300	995
T-2	1	<0.002	<0.002	271	<15.0
T-2	2	<0.002	<0.002	33.8	<15.0
T-2	3	<0.002	<0.002	120	<15.0
NORTH	0	--	--	<4.98	--
SOUTH	0	--	--	<4.90	--
EAST	0	--	--	61	--
WEST	0	--	--	507	--

(--) Analysis not requested

March 28, 2018

REMEDIAL ACTIONS

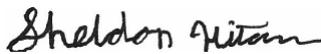
- The impacted area was excavated to the depth of one (1) foot BGS.
- All of the excavated material was hauled to an NMOCD approved solid waste disposal facility.
- The excavation was backfilled with caliche and contoured to match the surrounding location.

CLOSURE REQUEST

COG Operating, LLC respectfully requests that the New Mexico Oil Conservation Division and Bureau of Land Management grant closure approval for the Gehrig Federal #001 incidents that occurred on May 28, 2017 and November 18, 2017.

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

Sincerely,



Sheldon L. Hitchcock
HSE Coordinator
slhitchcock@concho.com

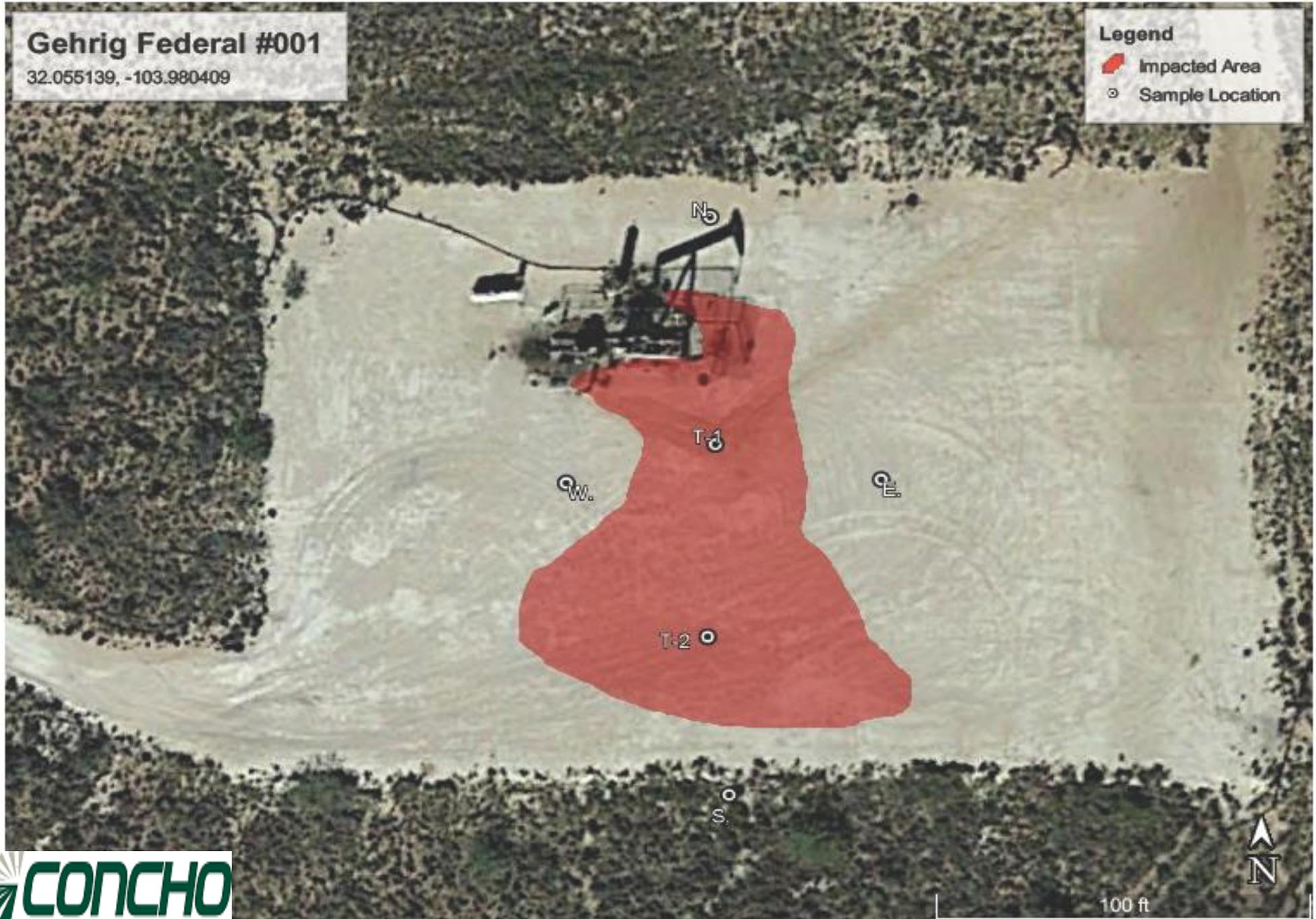
Enclosed:

- Appendix I: Site Diagram
- Appendix II: Groundwater Data
- Appendix III: Final C-141(s)
- Appendix IV: Analytical Reports and Chain-of-Custody Forms
- Appendix V: Approved Work Plan (Copy)

APPENDIX I

December 28, 2017

Gehrig Federal #001



APPENDIX II

APPENDIX III

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

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

Release Notification and Corrective Action

OPERATOR

Initial Report Final Report

Name of Company: COG Operating LLC OGRID # 229137	Contact: Robert McNeill
Address: 600 West Illinois Avenue, Midland TX 79701	Telephone No. 432-683-7443
Facility Name: Gehrig Federal #001	Facility Type: Wellhead
Surface Owner: Federal	Mineral Owner: Federal
API No. 30-015-33600	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
I	09	26S	29E	1980	South	10	East	Eddy

Latitude 32.05513 Longitude -103.9804077

NATURE OF RELEASE

Type of Release: Oil and Produced Water	Volume of Release: 0.5 bbls Oil & 6 bbls PW	Volume Recovered: 4 bbls Produced Water
Source of Release: Wellhead	Date and Hour of Occurrence: May 28, 2017 5:00 am	Date and Hour of Discovery: May 28, 2017 5:00 am
Was Immediate Notice Given? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour:	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	
If a Watercourse was Impacted, Describe Fully.*		
Describe Cause of Problem and Remedial Action Taken.*		
The packing blew due to pressure which was caused by a buildup of trash in the back pressure valve.		
Describe Area Affected and Cleanup Action Taken.*		
The release occurred on the pad. A vacuum truck was dispatched to remove all freestanding fluids. Concho performed a site assessment and soil sampling within the impacted area in preparation for the construction of a remediation work plan. A remediation work plan was subsequently submitted to and approved by NMOCD and BLM. Remedial activities were completed in accordance with the approved work plan.		
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.		
Signature: <i>Sheldon Hitchcock</i>	OIL CONSERVATION DIVISION	
Printed Name: Sheldon Hitchcock	Approved by Environmental Specialist: <i>Ashley Maxwell</i>	
Title: HSE Coordinator	Approval Date: 11/29/2022	Expiration Date:
E-mail Address: slhitchcock@concho.com	Conditions of Approval:	
Date: March 28, 2018 Phone: 575-746-2010	Attached <input type="checkbox"/>	

* Attach Additional Sheets If Necessary

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised April 3, 2017

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

Release Notification and Corrective Action

OPERATOR

Initial Report Final Report

Name of Company: COG Operating LLC (OGRID #229137)	Contact: Robert McNeill
Address: 600 West Illinois Avenue, Midland TX 79701	Telephone No. 432-683-7443
Facility Name: Gehrig Federal #001	Facility Type: Oil Well
Surface Owner: Federal	Mineral Owner: Federal
API No. 30-015-33600	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
I	09	26S	29E	1980	South	10	East	Eddy

Latitude: 32.05513 Longitude: -103.9804077 NAD83

NATURE OF RELEASE

Type of Release: Oil & Produced Water	Volume of Release: 4bbls Oil & 6bbls Produced water	Volume Recovered: 3bbls Oil & 4bbls Produced water
Source of Release: Wellhead	Date and Hour of Occurrence: 11-18-2017 1:00pm	Date and Hour of Discovery: 11-18-2017 1:00pm
Was Immediate Notice Given? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour:	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	
If a Watercourse was Impacted, Describe Fully.*		
Describe Cause of Problem and Remedial Action Taken.*		
This release was caused by a Stuffing Box Leak . The stuffing box was repacked, associated valve was cleaned and pressure switch was tested.		
Describe Area Affected and Cleanup Action Taken.*		
The release occurred on the pad. A vacuum truck was dispatched to remove all freestanding fluids. Concho performed a site assessment and soil sampling within the impacted area in preparation for the construction of a remediation work plan. A remediation work plan was subsequently submitted to and approved by NMOCD and BLM. Remedial activities were completed in accordance with the approved work plan.		
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.		
Signature: <i>Sheldon Hitchcock</i>		OIL CONSERVATION DIVISION
Printed Name: Sheldon Hitchcock	Approved by Environmental Specialist: <i>Ashley Maxwell</i>	
Title: HSE Coordinator	Approval Date: 11/29/2022	Expiration Date:
E-mail Address: shhitchcock@concho.com	Conditions of Approval:	
Date: March 28, 2018	Phone: 575-746-2010	Attached <input type="checkbox"/>

* Attach Additional Sheets If Necessary

APPENDIX IV



Certificate of Analysis Summary 571793

COG Operating LLC, Artesia, NM

Project Name: Gehrig Federal #001



Project Id:
Contact: Sheldon Hitchcock
Project Location: Eddy County NM

Date Received in Lab: Tue Dec-19-17 11:45 am
Report Date: 27-DEC-17
Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	571793-001	571793-002	571793-003	571793-004	571793-005	571793-006
	<i>Field Id:</i>	T-1 0'	T-1 1'	T-1 2'	T-1 3'	T-2 0'	T-2 1'
	<i>Depth:</i>		1- ft	2- ft	3- ft		1- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-13-17 09:00	Dec-13-17 09:02	Dec-13-17 09:04	Dec-13-17 09:06	Dec-13-17 09:30	Dec-13-17 09:32
BTEX by EPA 8021B	<i>Extracted:</i>	Dec-21-17 13:00					
	<i>Analyzed:</i>	Dec-21-17 20:40	Dec-21-17 20:59	Dec-21-17 21:18	Dec-21-17 21:37	Dec-21-17 21:56	Dec-21-17 22:15
	<i>Units/RL:</i>	mg/kg RL					
	Benzene	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199
	Toluene	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199
	Ethylbenzene	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199
	m,p-Xylenes	<0.00401 0.00401	<0.00402 0.00402	<0.00398 0.00398	<0.00399 0.00399	<0.00401 0.00401	<0.00398 0.00398
	o-Xylene	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199
Total Xylenes	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	
Total BTEX	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	
Chloride by EPA 300	<i>Extracted:</i>	Dec-22-17 16:14					
	<i>Analyzed:</i>	Dec-22-17 22:30	Dec-22-17 22:51	Dec-22-17 20:24	Dec-22-17 22:02	Dec-22-17 23:12	Dec-22-17 23:19
	<i>Units/RL:</i>	mg/kg RL					
Chloride	10700 50.0	96.6 5.00	24.3 5.00	74.5 5.00	13300 100	271 5.00	
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-21-17 07:00					
	<i>Analyzed:</i>	Dec-21-17 19:58	Dec-21-17 20:20	Dec-21-17 20:41	Dec-21-17 21:01	Dec-21-17 21:21	Dec-21-17 21:42
	<i>Units/RL:</i>	mg/kg RL					
	Gasoline Range Hydrocarbons (GRO)	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
	Diesel Range Organics (DRO)	30.1 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	780 15.0	<15.0 15.0
	Oil Range Hydrocarbons (ORO)	15.7 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	215 15.0	<15.0 15.0
Total TPH	45.8 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	995 15.0	<15.0 15.0	

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

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

Kelsey Brooks
Project Manager



Certificate of Analysis Summary 571793

COG Operating LLC, Artesia, NM

Project Name: Gehrig Federal #001



Project Id:
Contact: Sheldon Hitchcock
Project Location: Eddy County NM

Date Received in Lab: Tue Dec-19-17 11:45 am
Report Date: 27-DEC-17
Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	571793-007	571793-008			
	<i>Field Id:</i>	T-2 2'	T-2 3'			
	<i>Depth:</i>	2- ft	3- ft			
	<i>Matrix:</i>	SOIL	SOIL			
	<i>Sampled:</i>	Dec-13-17 09:34	Dec-13-17 09:36			
BTEX by EPA 8021B	<i>Extracted:</i>	Dec-21-17 13:00	Dec-21-17 13:00			
	<i>Analyzed:</i>	Dec-21-17 22:34	Dec-21-17 22:53			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL			
Benzene		<0.00200 0.00200	<0.00202 0.00202			
Toluene		<0.00200 0.00200	<0.00202 0.00202			
Ethylbenzene		<0.00200 0.00200	<0.00202 0.00202			
m,p-Xylenes		<0.00399 0.00399	<0.00403 0.00403			
o-Xylene		<0.00200 0.00200	<0.00202 0.00202			
Total Xylenes		<0.00200 0.00200	<0.00202 0.00202			
Total BTEX		<0.00200 0.00200	<0.00202 0.00202			
Chloride by EPA 300	<i>Extracted:</i>	Dec-22-17 16:14	Dec-22-17 16:14			
	<i>Analyzed:</i>	Dec-22-17 23:25	Dec-22-17 23:32			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL			
Chloride		33.8 5.00	120 5.00			
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-21-17 07:00	Dec-21-17 07:00			
	<i>Analyzed:</i>	Dec-21-17 22:02	Dec-21-17 23:04			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		<14.9 14.9	<15.0 15.0			
Diesel Range Organics (DRO)		<14.9 14.9	<15.0 15.0			
Oil Range Hydrocarbons (ORO)		<14.9 14.9	<15.0 15.0			
Total TPH		<14.9 14.9	<15.0 15.0			

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

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

Kelsey Brooks
Project Manager

Analytical Report 571793

for
COG Operating LLC

Project Manager: Sheldon Hitchcock
Gehrig Federal #001

27-DEC-17

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-17-23), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab code: TX01468):
Texas (T104704295-17-15), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab code: TX00127): Texas (T104704221-17-12)
Xenco-Lubbock (EPA Lab code: TX00139): Texas (T104704219-17-16)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-17-13)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)



27-DEC-17

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

Reference: XENCO Report No(s): **571793**
Gehrig Federal #001
 Project Address: Eddy County 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) 571793. 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. 571793 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,

Kelsey Brooks

Project Manager

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

Certified and approved by numerous States and Agencies.

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

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



Sample Cross Reference 571793

COG Operating LLC, Artesia, NM

Gehrig Federal #001

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
T-1 0'	S	12-13-17 09:00		571793-001
T-1 1'	S	12-13-17 09:02	1 ft	571793-002
T-1 2'	S	12-13-17 09:04	2 ft	571793-003
T-1 3'	S	12-13-17 09:06	3 ft	571793-004
T-2 0'	S	12-13-17 09:30		571793-005
T-2 1'	S	12-13-17 09:32	1 ft	571793-006
T-2 2'	S	12-13-17 09:34	2 ft	571793-007
T-2 3'	S	12-13-17 09:36	3 ft	571793-008



CASE NARRATIVE

Client Name: COG Operating LLC

Project Name: Gehrig Federal #001

Project ID:
Work Order Number(s): 571793

Report Date: 27-DEC-17
Date Received: 12/19/2017

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3036624 BTEX by EPA 8021B

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

Batch: LBA-3036815 Chloride by EPA 300

Lab Sample ID 571793-004 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD).

Chloride recovered above QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference.

Samples in the analytical batch are: 571793-001, -002, -003, -004, -005, -006, -007, -008.

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



Certificate of Analytical Results 571793



COG Operating LLC, Artesia, NM Gehrig Federal #001

Sample Id: **T-1 0'** Matrix: Soil Date Received: 12.19.17 11.45
 Lab Sample Id: 571793-001 Date Collected: 12.13.17 09.00
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: OJS % Moisture:
 Analyst: OJS Date Prep: 12.22.17 16.14 Basis: Wet Weight
 Seq Number: 3036815

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10700	50.0	mg/kg	12.22.17 22.30		10

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 12.21.17 07.00 Basis: Wet Weight
 Seq Number: 3036672

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	12.21.17 19.58	U	1
Diesel Range Organics (DRO)	C10C28DRO	30.1	15.0	mg/kg	12.21.17 19.58		1
Oil Range Hydrocarbons (ORO)	PHCG2835	15.7	15.0	mg/kg	12.21.17 19.58		1
Total TPH	PHC635	45.8	15.0	mg/kg	12.21.17 19.58		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	70	%	70-135	12.21.17 19.58	
o-Terphenyl	84-15-1	72	%	70-135	12.21.17 19.58	



Certificate of Analytical Results 571793

COG Operating LLC, Artesia, NM Gehrig Federal #001

Sample Id: **T-1 0'** Matrix: Soil Date Received: 12.19.17 11.45
 Lab Sample Id: 571793-001 Date Collected: 12.13.17 09.00
 Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
 Tech: ALJ % Moisture:
 Analyst: ALJ Date Prep: 12.21.17 13.00 Basis: Wet Weight
 Seq Number: 3036624

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.21.17 20.40	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.21.17 20.40	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.21.17 20.40	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	12.21.17 20.40	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.21.17 20.40	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.21.17 20.40	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.21.17 20.40	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	91		%	80-120	12.21.17 20.40	
1,4-Difluorobenzene	540-36-3	91		%	80-120	12.21.17 20.40	



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COG Operating LLC, Artesia, NM

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Sample Id: **T-1 1'** Matrix: Soil Date Received: 12.19.17 11.45
 Lab Sample Id: 571793-002 Date Collected: 12.13.17 09.02 Sample Depth: 1 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: OJS % Moisture:
 Analyst: OJS Date Prep: 12.22.17 16.14 Basis: Wet Weight
 Seq Number: 3036815

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	96.6	5.00	mg/kg	12.22.17 22.51		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 12.21.17 07.00 Basis: Wet Weight
 Seq Number: 3036672

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	12.21.17 20.20	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	12.21.17 20.20	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	12.21.17 20.20	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	12.21.17 20.20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	75	%	70-135	12.21.17 20.20	
o-Terphenyl	84-15-1	78	%	70-135	12.21.17 20.20	



Certificate of Analytical Results 571793



COG Operating LLC, Artesia, NM Gehrig Federal #001

Sample Id: T-1 1'	Matrix: Soil	Date Received: 12.19.17 11.45
Lab Sample Id: 571793-002	Date Collected: 12.13.17 09.02	Sample Depth: 1 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: ALJ		% Moisture:
Analyst: ALJ	Date Prep: 12.21.17 13.00	Basis: Wet Weight
Seq Number: 3036624		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	12.21.17 20.59	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	12.21.17 20.59	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	12.21.17 20.59	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	12.21.17 20.59	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	12.21.17 20.59	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	12.21.17 20.59	U	1
Total BTEX		<0.00201	0.00201	mg/kg	12.21.17 20.59	U	1
			%				
Surrogate	Cas Number	Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	92	%	80-120	12.21.17 20.59		
4-Bromofluorobenzene	460-00-4	88	%	80-120	12.21.17 20.59		



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COG Operating LLC, Artesia, NM Gehrig Federal #001

Sample Id: **T-1 2'** Matrix: Soil Date Received: 12.19.17 11.45
 Lab Sample Id: 571793-003 Date Collected: 12.13.17 09.04 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: OJS % Moisture:
 Analyst: OJS Date Prep: 12.22.17 16.14 Basis: Wet Weight
 Seq Number: 3036815

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	24.3	5.00	mg/kg	12.22.17 20.24		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 12.21.17 07.00 Basis: Wet Weight
 Seq Number: 3036672

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	12.21.17 20.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	12.21.17 20.41	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	12.21.17 20.41	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	12.21.17 20.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	12.21.17 20.41	
o-Terphenyl	84-15-1	90	%	70-135	12.21.17 20.41	



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COG Operating LLC, Artesia, NM Gehrig Federal #001

Sample Id: T-1 2'	Matrix: Soil	Date Received: 12.19.17 11.45
Lab Sample Id: 571793-003	Date Collected: 12.13.17 09.04	Sample Depth: 2 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: ALJ		% Moisture:
Analyst: ALJ	Date Prep: 12.21.17 13.00	Basis: Wet Weight
Seq Number: 3036624		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	12.21.17 21.18	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	12.21.17 21.18	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	12.21.17 21.18	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	12.21.17 21.18	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	12.21.17 21.18	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	12.21.17 21.18	U	1
Total BTEX		<0.00199	0.00199	mg/kg	12.21.17 21.18	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	88		%	80-120	12.21.17 21.18	
4-Bromofluorobenzene	460-00-4	83		%	80-120	12.21.17 21.18	



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COG Operating LLC, Artesia, NM Gehrig Federal #001

Sample Id: **T-1 3'** Matrix: Soil Date Received: 12.19.17 11.45
 Lab Sample Id: 571793-004 Date Collected: 12.13.17 09.06 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: OJS % Moisture:
 Analyst: OJS Date Prep: 12.22.17 16.14 Basis: Wet Weight
 Seq Number: 3036815

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	74.5	5.00	mg/kg	12.22.17 22.02		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 12.21.17 07.00 Basis: Wet Weight
 Seq Number: 3036672

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	12.21.17 21.01	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	12.21.17 21.01	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	12.21.17 21.01	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	12.21.17 21.01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	80	%	70-135	12.21.17 21.01	
o-Terphenyl	84-15-1	83	%	70-135	12.21.17 21.01	



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COG Operating LLC, Artesia, NM Gehrig Federal #001

Sample Id: T-1 3'	Matrix: Soil	Date Received: 12.19.17 11.45
Lab Sample Id: 571793-004	Date Collected: 12.13.17 09.06	Sample Depth: 3 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: ALJ		% Moisture:
Analyst: ALJ	Date Prep: 12.21.17 13.00	Basis: Wet Weight
Seq Number: 3036624		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.21.17 21.37	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.21.17 21.37	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.21.17 21.37	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	12.21.17 21.37	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.21.17 21.37	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.21.17 21.37	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.21.17 21.37	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	94	%	80-120	12.21.17 21.37		
4-Bromofluorobenzene	460-00-4	89	%	80-120	12.21.17 21.37		



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COG Operating LLC, Artesia, NM Gehrig Federal #001

Sample Id: **T-2 0'** Matrix: Soil Date Received: 12.19.17 11.45
 Lab Sample Id: 571793-005 Date Collected: 12.13.17 09.30
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: OJS % Moisture:
 Analyst: OJS Date Prep: 12.22.17 16.14 Basis: Wet Weight
 Seq Number: 3036815

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	13300	100	mg/kg	12.22.17 23.12		20

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 12.21.17 07.00 Basis: Wet Weight
 Seq Number: 3036672

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	12.21.17 21.21	U	1
Diesel Range Organics (DRO)	C10C28DRO	780	15.0	mg/kg	12.21.17 21.21		1
Oil Range Hydrocarbons (ORO)	PHCG2835	215	15.0	mg/kg	12.21.17 21.21		1
Total TPH	PHC635	995	15.0	mg/kg	12.21.17 21.21		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	79	%	70-135	12.21.17 21.21	
o-Terphenyl	84-15-1	85	%	70-135	12.21.17 21.21	



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COG Operating LLC, Artesia, NM Gehrig Federal #001

Sample Id: **T-2 0'** Matrix: Soil Date Received: 12.19.17 11.45
 Lab Sample Id: 571793-005 Date Collected: 12.13.17 09.30
 Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
 Tech: ALJ % Moisture:
 Analyst: ALJ Date Prep: 12.21.17 13.00 Basis: Wet Weight
 Seq Number: 3036624

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.21.17 21.56	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.21.17 21.56	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.21.17 21.56	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	12.21.17 21.56	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.21.17 21.56	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.21.17 21.56	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.21.17 21.56	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	87		%	80-120	12.21.17 21.56	
4-Bromofluorobenzene	460-00-4	83		%	80-120	12.21.17 21.56	



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COG Operating LLC, Artesia, NM Gehrig Federal #001

Sample Id: **T-2 1'** Matrix: Soil Date Received: 12.19.17 11.45
 Lab Sample Id: 571793-006 Date Collected: 12.13.17 09.32 Sample Depth: 1 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: OJS % Moisture:
 Analyst: OJS Date Prep: 12.22.17 16.14 Basis: Wet Weight
 Seq Number: 3036815

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	271	5.00	mg/kg	12.22.17 23.19		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 12.21.17 07.00 Basis: Wet Weight
 Seq Number: 3036672

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	12.21.17 21.42	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	12.21.17 21.42	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	12.21.17 21.42	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	12.21.17 21.42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	75	%	70-135	12.21.17 21.42	
o-Terphenyl	84-15-1	79	%	70-135	12.21.17 21.42	



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COG Operating LLC, Artesia, NM Gehrig Federal #001

Sample Id: T-2 1'	Matrix: Soil	Date Received: 12.19.17 11.45
Lab Sample Id: 571793-006	Date Collected: 12.13.17 09.32	Sample Depth: 1 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: ALJ		% Moisture:
Analyst: ALJ	Date Prep: 12.21.17 13.00	Basis: Wet Weight
Seq Number: 3036624		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	12.21.17 22.15	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	12.21.17 22.15	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	12.21.17 22.15	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	12.21.17 22.15	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	12.21.17 22.15	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	12.21.17 22.15	U	1
Total BTEX		<0.00199	0.00199	mg/kg	12.21.17 22.15	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	83	%	80-120	12.21.17 22.15		
1,4-Difluorobenzene	540-36-3	92	%	80-120	12.21.17 22.15		



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COG Operating LLC, Artesia, NM Gehrig Federal #001

Sample Id: **T-2 2'** Matrix: Soil Date Received: 12.19.17 11.45
 Lab Sample Id: 571793-007 Date Collected: 12.13.17 09.34 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: OJS % Moisture:
 Analyst: OJS Date Prep: 12.22.17 16.14 Basis: Wet Weight
 Seq Number: 3036815

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	33.8	5.00	mg/kg	12.22.17 23.25		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 12.21.17 07.00 Basis: Wet Weight
 Seq Number: 3036672

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	12.21.17 22.02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	12.21.17 22.02	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9	mg/kg	12.21.17 22.02	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	12.21.17 22.02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	12.21.17 22.02	
o-Terphenyl	84-15-1	89	%	70-135	12.21.17 22.02	



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COG Operating LLC, Artesia, NM Gehrig Federal #001

Sample Id: T-2 2'	Matrix: Soil	Date Received: 12.19.17 11.45
Lab Sample Id: 571793-007	Date Collected: 12.13.17 09.34	Sample Depth: 2 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: ALJ		% Moisture:
Analyst: ALJ	Date Prep: 12.21.17 13.00	Basis: Wet Weight
Seq Number: 3036624		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.21.17 22.34	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.21.17 22.34	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.21.17 22.34	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	12.21.17 22.34	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.21.17 22.34	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.21.17 22.34	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.21.17 22.34	U	1
			%				
Surrogate	Cas Number	Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	93	%	80-120	12.21.17 22.34		
4-Bromofluorobenzene	460-00-4	86	%	80-120	12.21.17 22.34		



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COG Operating LLC, Artesia, NM Gehrig Federal #001

Sample Id: **T-2 3'** Matrix: Soil Date Received: 12.19.17 11.45
 Lab Sample Id: 571793-008 Date Collected: 12.13.17 09.36 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: OJS % Moisture:
 Analyst: OJS Date Prep: 12.22.17 16.14 Basis: Wet Weight
 Seq Number: 3036815

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	120	5.00	mg/kg	12.22.17 23.32		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 12.21.17 07.00 Basis: Wet Weight
 Seq Number: 3036672

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	12.21.17 23.04	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	12.21.17 23.04	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	12.21.17 23.04	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	12.21.17 23.04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	12.21.17 23.04	
o-Terphenyl	84-15-1	86	%	70-135	12.21.17 23.04	



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COG Operating LLC, Artesia, NM Gehrig Federal #001

Sample Id: T-2 3'	Matrix: Soil	Date Received: 12.19.17 11.45
Lab Sample Id: 571793-008	Date Collected: 12.13.17 09.36	Sample Depth: 3 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: ALJ		% Moisture:
Analyst: ALJ	Date Prep: 12.21.17 13.00	Basis: Wet Weight
Seq Number: 3036624		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	12.21.17 22.53	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	12.21.17 22.53	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	12.21.17 22.53	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	12.21.17 22.53	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	12.21.17 22.53	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	12.21.17 22.53	U	1
Total BTEX		<0.00202	0.00202	mg/kg	12.21.17 22.53	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	87	%	80-120	12.21.17 22.53		
1,4-Difluorobenzene	540-36-3	93	%	80-120	12.21.17 22.53		



Flagging Criteria



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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

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

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 5332 Blackberry Drive, San Antonio TX 78238
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(214) 902 0300	(214) 351-9139
(210) 509-3334	(210) 509-3335
(432) 563-1800	(432) 563-1713
(602) 437-0330	



COG Operating LLC

Gehrig Federal #001

Analytical Method: Chloride by EPA 300

Seq Number: 3036815

MB Sample Id: 7636572-1-BLK

Matrix: Solid

LCS Sample Id: 7636572-1-BKS

Prep Method: E300P

Date Prep: 12.22.17

LCSD Sample Id: 7636572-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	274	110	274	110	90-110	0	20	mg/kg	12.22.17 20:10	

Analytical Method: Chloride by EPA 300

Seq Number: 3036815

Parent Sample Id: 571793-003

Matrix: Soil

MS Sample Id: 571793-003 S

Prep Method: E300P

Date Prep: 12.22.17

MSD Sample Id: 571793-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	24.3	250	308	113	295	108	90-110	4	20	mg/kg	12.22.17 20:31	X

Analytical Method: Chloride by EPA 300

Seq Number: 3036815

Parent Sample Id: 571793-004

Matrix: Soil

MS Sample Id: 571793-004 S

Prep Method: E300P

Date Prep: 12.22.17

MSD Sample Id: 571793-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	74.5	250	344	108	348	109	90-110	1	20	mg/kg	12.22.17 22:09	

Analytical Method: TPH By SW8015 Mod

Seq Number: 3036672

MB Sample Id: 7636449-1-BLK

Matrix: Solid

LCS Sample Id: 7636449-1-BKS

Prep Method: TX1005P

Date Prep: 12.21.17

LCSD Sample Id: 7636449-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	881	88	882	88	70-135	0	35	mg/kg	12.21.17 17:33	
Diesel Range Organics (DRO)	<15.0	1000	914	91	919	92	70-135	1	35	mg/kg	12.21.17 17:33	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	83		84		84		70-135	%	12.21.17 17:33
o-Terphenyl	87		91		91		70-135	%	12.21.17 17:33

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

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

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



COG Operating LLC

Gehrig Federal #001

Analytical Method: TPH By SW8015 Mod

Seq Number: 3036672

Parent Sample Id: 571792-001

Matrix: Soil

MS Sample Id: 571792-001 S

Prep Method: TX1005P

Date Prep: 12.21.17

MSD Sample Id: 571792-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	998	858	86	841	84	70-135	2	35	mg/kg	12.21.17 18:36	
Diesel Range Organics (DRO)	<15.0	998	869	87	857	86	70-135	1	35	mg/kg	12.21.17 18:36	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	83		80		70-135	%	12.21.17 18:36
o-Terphenyl	89		86		70-135	%	12.21.17 18:36

Analytical Method: BTEX by EPA 8021B

Seq Number: 3036624

MB Sample Id: 7636429-1-BLK

Matrix: Solid

LCS Sample Id: 7636429-1-BKS

Prep Method: SW5030B

Date Prep: 12.21.17

LCSD Sample Id: 7636429-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0826	82	0.0851	85	70-130	3	35	mg/kg	12.21.17 13:48	
Toluene	<0.00202	0.101	0.0764	76	0.0786	79	70-130	3	35	mg/kg	12.21.17 13:48	
Ethylbenzene	<0.00202	0.101	0.0828	82	0.0850	85	71-129	3	35	mg/kg	12.21.17 13:48	
m,p-Xylenes	<0.00403	0.202	0.165	82	0.169	84	70-135	2	35	mg/kg	12.21.17 13:48	
o-Xylene	<0.00202	0.101	0.0770	76	0.0785	79	71-133	2	35	mg/kg	12.21.17 13:48	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	93		112		110		80-120	%	12.21.17 13:48
4-Bromofluorobenzene	83		110		119		80-120	%	12.21.17 13:48

Analytical Method: BTEX by EPA 8021B

Seq Number: 3036624

Parent Sample Id: 571522-005

Matrix: Soil

MS Sample Id: 571522-005 S

Prep Method: SW5030B

Date Prep: 12.21.17

MSD Sample Id: 571522-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0994	0.0734	74	0.0880	88	70-130	18	35	mg/kg	12.21.17 23:31	
Toluene	<0.00199	0.0994	0.0689	69	0.0833	83	70-130	19	35	mg/kg	12.21.17 23:31	X
Ethylbenzene	<0.00199	0.0994	0.0721	73	0.0767	77	71-129	6	35	mg/kg	12.21.17 23:31	
m,p-Xylenes	<0.00398	0.199	0.142	71	0.138	69	70-135	3	35	mg/kg	12.21.17 23:31	X
o-Xylene	<0.00199	0.0994	0.0675	68	0.0685	69	71-133	1	35	mg/kg	12.21.17 23:31	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		89		80-120	%	12.21.17 23:31
4-Bromofluorobenzene	98		92		80-120	%	12.21.17 23:31

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

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

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



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Xenco Quote #

Xenco Job #

5717973

Matrix Codes

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

Client / Reporting Information		Project Information		Analytical Information		Matrix Codes											
Company Name / Branch: COG Operating, LLC		Project Name/Number: Gehrig Federal #001		Xenco Quote #		Xenco Job #											
Company Address: 2407 Peecos Ave. Artesia NM 88210		Project Location: Eddy County, NM		Analytical Information		Matrix Codes											
Email: shitchcock@concho.com dneel2@concho.com; cgray@concho.com; raskell@concho.com		Invoice To: COG Operating, LLC Attn: Robert McNeill 600 W. Illinois Ave. Midland TX, 79701		TPH EXTENDED		BTEX											
Project Contact: Sheldon Hitchcock		PO Number:		CHLORIDES		Field Comments											
Sampler's Name: Sheldon Hitchcock		Date Deliverable Information		FED-EX / UPS: Tracking #		On Ice											
						Cooler Temp. 4.8°C											
						Thermo. Corr. Factor											
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	TPH EXTENDED	BTEX	CHLORIDES	Field Comments
1	T-1 0'	0	12/13/17	9:00	S	1								X	X	X	
2	T-1 1'	1	12/13/17	9:02	S	1								X	X	X	
3	T-1 2'	2	12/13/17	9:04	S	1								X	X	X	
4	T-1 3'	3	12/13/17	9:06	S	1								X	X	X	
5	T-2 0'	0	12/13/17	9:30	S	1								X	X	X	
6	T-2 1'	1	12/13/17	9:32	S	1								X	X	X	
7	T-2 2'	2	12/13/17	9:34	S	1								X	X	X	
8	T-2 3'	3	12/13/17	9:36	S	1								X	X	X	
9					S	1											
10					S	1											
Turnaround Time (Business days)																	
<input type="checkbox"/> Same Day TAT		<input type="checkbox"/> 5 Day TAT		<input type="checkbox"/> Level II Std QC		<input type="checkbox"/> Level IV (Full Data Pkg /raw data)											
<input type="checkbox"/> Next Day EMERGENCY		<input type="checkbox"/> 7 Day TAT		<input type="checkbox"/> Level III Std QC+ Forms		<input type="checkbox"/> TRRP Level IV											
<input type="checkbox"/> 2 Day EMERGENCY		<input checked="" type="checkbox"/> Contract TAT		<input type="checkbox"/> Level 3 (CLP Forms)		<input type="checkbox"/> UST / RG-411											
<input type="checkbox"/> 3 Day EMERGENCY				<input type="checkbox"/> TRRP Checklist													
TAT Starts Day received by Lab, if received by 5:00 pm																	
Relinquished by Sampler:		SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY															
1. Sheldon Hixson		Date Time: 12/14/17		Received By: [Signature]		Date Time: 12-19-17		Relinquished By: [Signature]		Date Time: 12-19-17		Received By: [Signature]		Date Time: 12-19-17		Received By: [Signature]	
3. Relinquished by:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:		Date Time:		Received By:	
5. Relinquished by:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:		Date Time:		Received By:	
Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco. Its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the Client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at \$5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.																	

Temp: 1.2 IR ID: R-8
 CF: (0-6: -0.2°C)
 (6-23: +0.2°C)
 Corrected Temp: 1.0

Stop CI-IF S 6880 mg/kg



XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In

Client: COG Operating LLC

Date/ Time Received: 12/19/2017 11:45:00 AM

Work Order #: 571793

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	1
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6*Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#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)?	N/A
#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: Jessica Kramer
Jessica Kramer

Date: 12/20/2017

Checklist reviewed by: Kelsey Brooks
Kelsey Brooks

Date: 12/26/2017



Certificate of Analysis Summary 571794

COG Operating LLC, Artesia, NM

Project Name: Gehrig Federal #001



Project Id:
Contact: Sheldon Hitchcock
Project Location: Eddy County NM

Date Received in Lab: Tue Dec-19-17 11:45 am
Report Date: 27-DEC-17
Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	571794-001	571794-002	571794-003	571794-004		
	<i>Field Id:</i>	N	S	E	W		
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL		
	<i>Sampled:</i>	Dec-13-17 10:00	Dec-13-17 10:05	Dec-13-17 10:10	Dec-13-17 10:15		
Chloride by EPA 300	<i>Extracted:</i>	Dec-26-17 10:30	Dec-26-17 10:30	Dec-26-17 10:30	Dec-26-17 10:30		
	<i>Analyzed:</i>	Dec-26-17 13:26	Dec-26-17 18:55	Dec-26-17 19:01	Dec-26-17 19:08		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		<4.98 4.98	<4.90 4.90	61.0 4.94	507 4.98		

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

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Version: 1.9%

Kelsey Brooks
 Project Manager

Analytical Report 571794

for
COG Operating LLC

Project Manager: Sheldon Hitchcock
Gehrig Federal #001

27-DEC-17

Collected By: Client



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Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-17-23), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab code: TX01468):
Texas (T104704295-17-15), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab code: TX00127): Texas (T104704221-17-12)
Xenco-Lubbock (EPA Lab code: TX00139): Texas (T104704219-17-16)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-17-13)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)



27-DEC-17

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

Reference: XENCO Report No(s): **571794**
Gehrig Federal #001
Project Address: Eddy County 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) 571794. 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. 571794 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,

Kelsey Brooks

Project Manager

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Sample Cross Reference 571794

COG Operating LLC, Artesia, NM

Gehrig Federal #001

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
N	S	12-13-17 10:00		571794-001
S	S	12-13-17 10:05		571794-002
E	S	12-13-17 10:10		571794-003
W	S	12-13-17 10:15		571794-004



CASE NARRATIVE

Client Name: COG Operating LLC

Project Name: Gehrig Federal #001

Project ID:
Work Order Number(s): 571794

Report Date: 27-DEC-17
Date Received: 12/19/2017

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 571794



COG Operating LLC, Artesia, NM Gehrig Federal #001

Sample Id: N
Lab Sample Id: 571794-001

Matrix: Soil
Date Collected: 12.13.17 10.00

Date Received: 12.19.17 11.45

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: LRI

% Moisture:

Analyst: LRI

Date Prep: 12.26.17 10.30

Basis: Wet Weight

Seq Number: 3036899

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.98	4.98	mg/kg	12.26.17 13.26	U	1



Certificate of Analytical Results 571794



COG Operating LLC, Artesia, NM Gehrig Federal #001

Sample Id: S Matrix: Soil Date Received: 12.19.17 11.45
 Lab Sample Id: 571794-002 Date Collected: 12.13.17 10.05
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: LRI % Moisture:
 Analyst: LRI Date Prep: 12.26.17 10.30 Basis: Wet Weight
 Seq Number: 3036899

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.90	4.90	mg/kg	12.26.17 18.55	U	1



Certificate of Analytical Results 571794



COG Operating LLC, Artesia, NM Gehrig Federal #001

Sample Id: **E** Matrix: **Soil** Date Received: 12.19.17 11.45
 Lab Sample Id: 571794-003 Date Collected: 12.13.17 10.10
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: **LRI** % Moisture:
 Analyst: **LRI** Date Prep: 12.26.17 10.30 Basis: **Wet Weight**
 Seq Number: 3036899

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	61.0	4.94	mg/kg	12.26.17 19.01		1



Certificate of Analytical Results 571794



COG Operating LLC, Artesia, NM Gehrig Federal #001

Sample Id: **W** Matrix: Soil Date Received: 12.19.17 11.45
 Lab Sample Id: 571794-004 Date Collected: 12.13.17 10.15
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: LRI % Moisture:
 Analyst: LRI Date Prep: 12.26.17 10.30 Basis: Wet Weight
 Seq Number: 3036899

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	507	4.98	mg/kg	12.26.17 19.08		1



Flagging Criteria



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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

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

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(602) 437-0330	



COG Operating LLC

Gehrig Federal #001

Analytical Method: Chloride by EPA 300

Seq Number: 3036899

MB Sample Id: 7636590-1-BLK

Matrix: Solid

LCS Sample Id: 7636590-1-BKS

Prep Method: E300P

Date Prep: 12.26.17

LCSD Sample Id: 7636590-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	244	98	241	96	90-110	1	20	mg/kg	12.26.17 10:08	

Analytical Method: Chloride by EPA 300

Seq Number: 3036899

Parent Sample Id: 571456-002

Matrix: Soil

MS Sample Id: 571456-002 S

Prep Method: E300P

Date Prep: 12.26.17

MSD Sample Id: 571456-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1050	245	1210	65	1210	65	90-110	0	20	mg/kg	12.26.17 11:28	X

Analytical Method: Chloride by EPA 300

Seq Number: 3036899

Parent Sample Id: 572053-007

Matrix: Soil

MS Sample Id: 572053-007 S

Prep Method: E300P

Date Prep: 12.26.17

MSD Sample Id: 572053-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	292	246	551	105	550	105	90-110	0	20	mg/kg	12.26.17 13:05	

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

$$[D] = 100 * (C - A) / B$$

$$RPD = 200 * | (C - E) / (C + E) |$$

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

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



XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In

Client: COG Operating LLC

Date/ Time Received: 12/19/2017 11:45:00 AM

Work Order #: 571794

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	1
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6*Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#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)?	N/A
#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: Jessica Kramer
Jessica Kramer

Date: 12/20/2017

Checklist reviewed by: Kelsey Brooks
Kelsey Brooks

Date: 12/26/2017

APPENDIX V



[Sheldon L. Hitchcock]
[HSE Coordinator]

December 28, 2017

Crystal Weaver
Oil Conservation Division, District 2
811 S First St.
Artesia, NM 88210

Shelly Tucker
Bureau of Land Management, CFO
620 E. Green Street
Carlsbad, NM 88220

**Re: Work Plan
Gehrig Federal #001
API #: 30-015-33600
RP#: 2RP-4241 & 2RP-4498
Unit Letter I Section 9, Township 26S, Range 29E
Eddy County, NM**

Ms. Weaver/Ms. Tucker,

COG Operating, LLC (COG) is pleased to submit for your consideration the following remediation work plan for the Gehrig Federal #001. This plan is in response to two oil and produced water releases that occurred on May 28, 2017 and again on November 18, 2017. A C-141 initial report was submitted to the New Mexico Oil Conservation Division (NMOCD) subsequent to each release.

BACKGROUND

The Gehrig Federal #001 release is located in Unit Letter I, Section 9, Township 26 South, and Range 29 East in Eddy County, New Mexico. More specifically the latitude and longitude for this release are 32.055139 North and -103.980409 West.

On May 28, 2018, a stuffing box leak resulted in the release of approximately one-half (0.5) barrel (bbl) of oil and six (6) bbls of produced water. Approximately four (4) bbls of produced water were recovered. The RP number NMOCD assigned to this release was 2RP-4241.

On November 18, 2017, a stuffing box leak resulted in the release of approximately four (4) bbls of oil and six (6) bbls of produced water. Approximately three (3) bbls of oil and four (4) bbls of produced water were recovered. The RP number NMOCD assigned to this release was 2RP-4498. This release covered the same area of the well pad as the release that occurred on May 28, 2018.

December 28, 2017

On December 12, 2017, a site assessment and soil sampling were conducted in order to vertically and horizontally define the area impacted by the two releases at this site. A site diagram is included in Appendix I. The analytical results from the soil sampling activities are summarized in the table below.

GROUNDWATER AND SITE RANKING

According to the 2005 Chevron Texaco groundwater trend map, groundwater in the project vicinity is approximately one-hundred and twenty (120) feet below ground surface (BGS) (Appendix II). No water well or surface water was observed within one-thousand (1,000) feet of the release site. Therefore the site ranking for this release is zero (0) based on the following:

Depth to groundwater >100-feet
 Distance to surface water body >1000-feet
 Wellhead Protection Area >1000-feet

ANALYTICAL RESULTS

Sample ID	Depth (feet)	Benzene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)	Total TPH (mg/kg)
T-1	0	<0.002	<0.002	10700	45.8
T-1	1	<0.002	<0.002	96.6	<15.0
T-1	2	<0.002	<0.002	24.3	<15.0
T-1	3	<0.002	<0.002	74.5	<15.0
T-2	0	<0.002	<0.002	13300	995
T-2	1	<0.002	<0.002	271	<15.0
T-2	2	<0.002	<0.002	33.8	<15.0
T-2	3	<0.002	<0.002	120	<15.0
NORTH	0	--	--	<4.98	--
SOUTH	0	--	--	<4.90	--
EAST	0	--	--	61	--
WEST	0	--	--	507	--

(--) Analysis not requested

December 28, 2017

PROPOSED REMEDIAL ACTIONS

- The impacted area will be excavated to the depth of one (1) foot BGS.
- All of the excavated material will be hauled to an NMOCD approved solid waste disposal facility.
- The excavation will be backfilled with caliche and contoured to match the surrounding location.

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

Sincerely,



Sheldon L. Hitchcock
HSE Coordinator
slhitchcock@concho.com

Enclosed:

- Appendix I: Site Diagram
- Appendix II: Groundwater Data
- Appendix III: Initial C-141 (Copy)
- Appendix IV: Analytical Reports and Chain-of-Custody Forms

District I
 1625 N. French Dr., Hobbs, NM 88240
 Phone:(575) 393-6161 Fax:(575) 393-0720

District II
 811 S. First St., Artesia, NM 88210
 Phone:(575) 748-1283 Fax:(575) 748-9720

District III
 1000 Rio Brazos Rd., Aztec, NM 87410
 Phone:(505) 334-6178 Fax:(505) 334-6170

District IV
 1220 S. St Francis Dr., Santa Fe, NM 87505
 Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 162179

CONDITIONS

Operator: COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701	OGRID: 229137
	Action Number: 162179
	Action Type: [IM-SD] Incident File Support Doc (ENV) (IM-BNF)

CONDITIONS

Created By	Condition	Condition Date
amaxwell	None	11/29/2022