

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.

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

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,



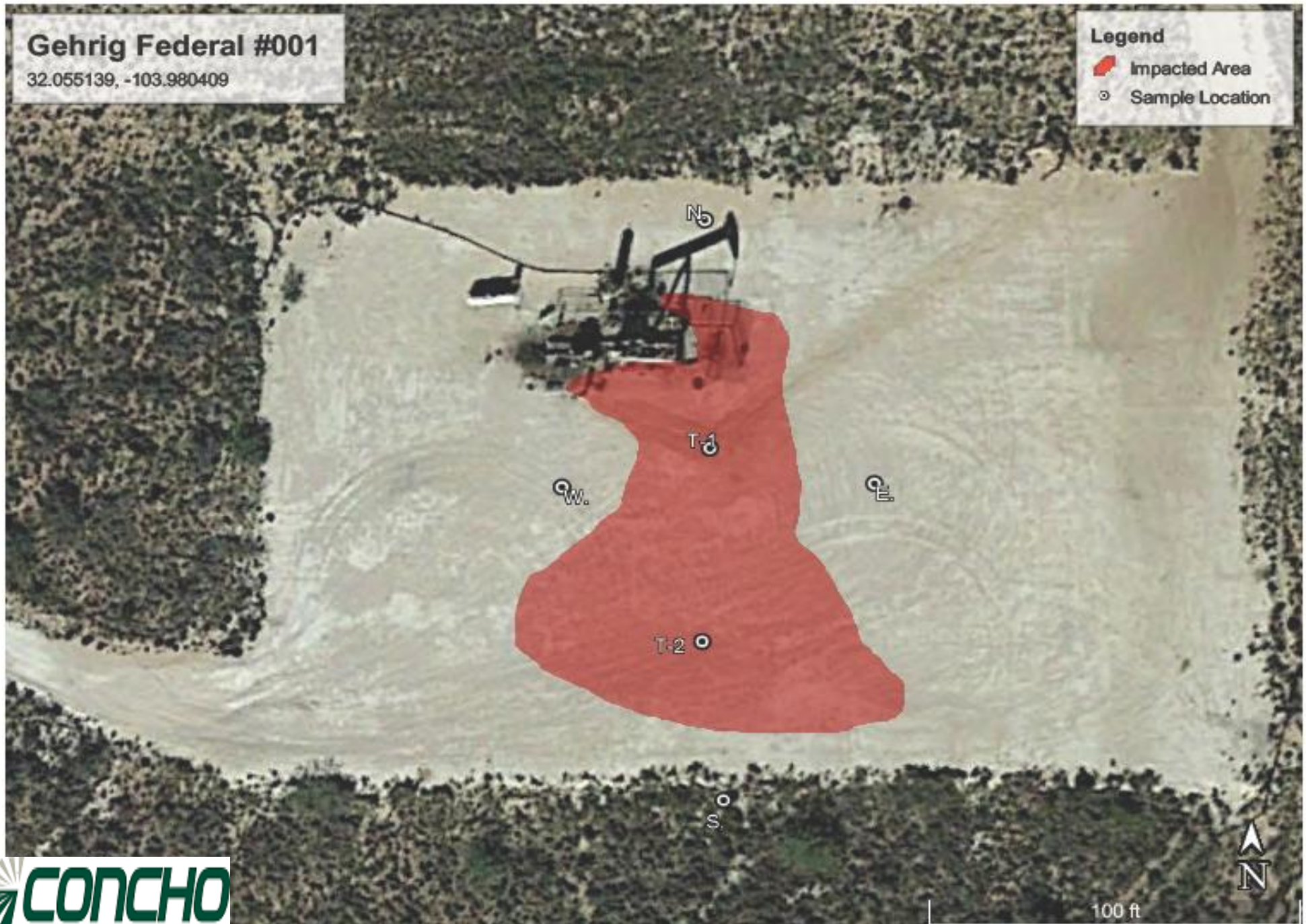
Sheldon L. Hitchcock
HSE Coordinator
slhitchcock@concho.com

Enclosed:

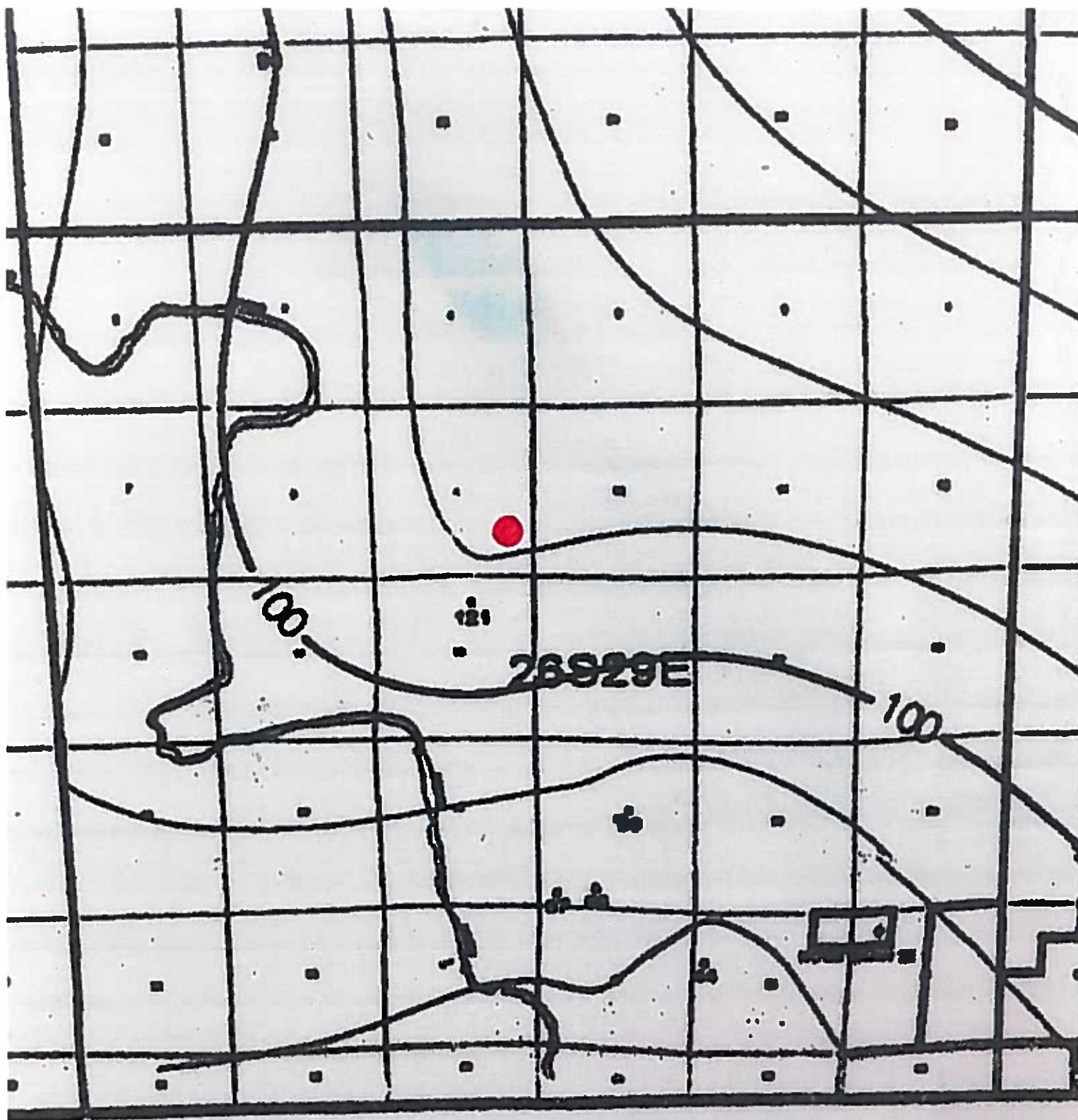
Appendix I: Site Diagram
Appendix II: Groundwater Data
Appendix III: Initial C-141 (Copy)
Appendix IV: Analytical Reports and Chain-of-Custody Forms

APPENDIX I

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

NM OIL CONSERVATION
ARTESIA DISTRICT

NOV 22 2017

Form C-141
Revised April 3, 2017

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

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

Release Notification and Corrective Action

0AB173333295

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
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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: 4bbbls Oil & 6bbbls Produced water	Volume Recovered: 3bbbls Oil & 4bbbls 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? ☐ Yes ☒ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour:	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

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

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

Signature: <i>[Signature]</i>	OIL CONSERVATION DIVISION	
Printed Name: Aaron Lieb	Approved by Environmental Specialist: <i>[Signature]</i>	
Title: Senior HSE Coordinator	Approval Date: 11/28/17	Expiration Date: N/A
E-mail Address: alieb@concho.com	Conditions of Approval: <i>see attached</i>	Attached ☒ 2017-4498
Date: 11/20/2017	Phone: 575-748-1553	

* Attach Additional Sheets If Necessary

11/27/17 AB

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

NM OIL CONSERVATION

ARTESIA DISTRICT

Form C-141
Revised August 8, 2011

JUN 01 2017
Submit Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

RECEIVED

Release Notification and Corrective Action

NAB1715756927

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:	API No. 30-015-33600
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LOCATION OF RELEASE

Unit Letter I	Section 09	Township 26S	Range 29E	Feet from the 1980	North/South Line South	Feet from the 10	East/West Line East	County Eddy
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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? ☐ Yes ☒ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour:	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

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 will have the spill area sampled to delineate any possible impact from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation activities.

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

Signature: <i>Rebecca Haskell</i>	OIL CONSERVATION DIVISION	
Printed Name: Rebecca Haskell	Approved by Environmental Specialist: <i>Crystal W...</i>	
Title: Senior HSE Coordinator	Approval Date: 6/5/17	Expiration Date: N/A
E-mail Address: rhaskell@concho.com	Conditions of Approval: see attached	Attached ☒
Date: June 1, 2017 Phone: 432-683-7443		

* Attach Additional Sheets If Necessary

New forms can be found in the
New Mexico State Website in forms:
[http://www.emnrd.state.nm.us/
OCD/forms.html](http://www.emnrd.state.nm.us/OCD/forms.html)

2RD-4241

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

Analysis Requested	Lab Id:	571793-001	571793-002	571793-003	571793-004	571793-005	571793-006
	Field Id:	T-1 0'	T-1 1'	T-1 2'	T-1 3'	T-2 0'	T-2 1'
	Depth:		1- ft	2- ft	3- ft		1- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	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	Extracted:	Dec-21-17 13:00	Dec-21-17 13:00	Dec-21-17 13:00	Dec-21-17 13:00	Dec-21-17 13:00	Dec-21-17 13:00
	Analyzed:	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
	Units/RL:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		RL	RL	RL	RL	RL	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	Extracted:	Dec-22-17 16:14	Dec-22-17 16:14	Dec-22-17 16:14	Dec-22-17 16:14	Dec-22-17 16:14	Dec-22-17 16:14
	Analyzed:	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
	Units/RL:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		RL	RL	RL	RL	RL	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	Extracted:	Dec-21-17 07:00	Dec-21-17 07:00	Dec-21-17 07:00	Dec-21-17 07:00	Dec-21-17 07:00	Dec-21-17 07:00
	Analyzed:	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
	Units/RL:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		RL	RL	RL	RL	RL	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

Analysis Requested	Lab Id:	571793-007	571793-008				
	Field Id:	T-2 2'	T-2 3'				
	Depth:	2- ft	3- ft				
	Matrix:	SOIL	SOIL				
	Sampled:	Dec-13-17 09:34	Dec-13-17 09:36				
BTEX by EPA 8021B	Extracted:	Dec-21-17 13:00	Dec-21-17 13:00				
	Analyzed:	Dec-21-17 22:34	Dec-21-17 22:53				
	Units/RL:	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	Extracted:	Dec-22-17 16:14	Dec-22-17 16:14				
	Analyzed:	Dec-22-17 23:25	Dec-22-17 23:32				
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		33.8 5.00	120 5.00				
TPH By SW8015 Mod	Extracted:	Dec-21-17 07:00	Dec-21-17 07:00				
	Analyzed:	Dec-21-17 22:02	Dec-21-17 23:04				
	Units/RL:	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'**
Lab Sample Id: 571793-001

Matrix: Soil
Date Collected: 12.13.17 09.00

Date Received: 12.19.17 11.45

Analytical Method: Chloride by EPA 300

Tech: OJS

Analyst: OJS

Seq Number: 3036815

Prep Method: E300P

% Moisture:

Date Prep: 12.22.17 16.14

Basis: Wet Weight

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

Tech: ARM

Analyst: ARM

Seq Number: 3036672

Prep Method: TX1005P

% Moisture:

Date Prep: 12.21.17 07.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	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'**
Lab Sample Id: 571793-001

Matrix: Soil
Date Collected: 12.13.17 09.00

Date Received: 12.19.17 11.45

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		



Certificate of Analytical Results 571793



COG Operating LLC, Artesia, NM

Gehrig Federal #001

Sample Id: T-1 1'
Lab Sample Id: 571793-002

Matrix: Soil
Date Collected: 12.13.17 09.02

Date Received: 12.19.17 11.45
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300
Tech: OJS
Analyst: OJS
Seq Number: 3036815

Date Prep: 12.22.17 16.14

Prep Method: E300P
% Moisture:
Basis: Wet Weight

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
Tech: ARM
Analyst: ARM
Seq Number: 3036672

Date Prep: 12.21.17 07.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	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'
Lab Sample Id: 571793-002

Matrix: Soil
Date Collected: 12.13.17 09.02

Date Received: 12.19.17 11.45
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		



Certificate of Analytical Results 571793



COG Operating LLC, Artesia, NM

Gehrig Federal #001

Sample Id: T-1 2'
Lab Sample Id: 571793-003

Matrix: Soil
Date Collected: 12.13.17 09.04

Date Received: 12.19.17 11.45
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300
Tech: OJS
Analyst: OJS
Seq Number: 3036815

Date Prep: 12.22.17 16.14

Prep Method: E300P
% Moisture:
Basis: Wet Weight

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
Tech: ARM
Analyst: ARM
Seq Number: 3036672

Date Prep: 12.21.17 07.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	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		



Certificate of Analytical Results 571793



COG Operating LLC, Artesia, NM

Gehrig Federal #001

Sample Id: T-1 2'
Lab Sample Id: 571793-003

Matrix: Soil
Date Collected: 12.13.17 09.04

Date Received: 12.19.17 11.45
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		



Certificate of Analytical Results 571793



COG Operating LLC, Artesia, NM

Gehrig Federal #001

Sample Id: T-1 3'
Lab Sample Id: 571793-004

Matrix: Soil
Date Collected: 12.13.17 09.06

Date Received: 12.19.17 11.45
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300
Tech: OJS
Analyst: OJS
Seq Number: 3036815

Date Prep: 12.22.17 16.14

Prep Method: E300P
% Moisture:
Basis: Wet Weight

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
Tech: ARM
Analyst: ARM
Seq Number: 3036672

Date Prep: 12.21.17 07.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	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	



Certificate of Analytical Results 571793



COG Operating LLC, Artesia, NM

Gehrig Federal #001

Sample Id: T-1 3'
Lab Sample Id: 571793-004

Matrix: Soil
Date Collected: 12.13.17 09.06

Date Received: 12.19.17 11.45
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		



Certificate of Analytical Results 571793



COG Operating LLC, Artesia, NM

Gehrig Federal #001

Sample Id: **T-2 0'**
Lab Sample Id: 571793-005

Matrix: Soil
Date Collected: 12.13.17 09.30

Date Received: 12.19.17 11.45

Analytical Method: Chloride by EPA 300

Tech: OJS

Analyst: OJS

Seq Number: 3036815

Date Prep: 12.22.17 16.14

Prep Method: E300P

% Moisture:

Basis: Wet Weight

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

Tech: ARM

Analyst: ARM

Seq Number: 3036672

Date Prep: 12.21.17 07.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	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	



Certificate of Analytical Results 571793



COG Operating LLC, Artesia, NM

Gehrig Federal #001

Sample Id: T-2 0'
Lab Sample Id: 571793-005

Matrix: Soil
Date Collected: 12.13.17 09.30

Date Received: 12.19.17 11.45

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		



Certificate of Analytical Results 571793



COG Operating LLC, Artesia, NM

Gehrig Federal #001

Sample Id: T-2 1'
Lab Sample Id: 571793-006

Matrix: Soil
Date Collected: 12.13.17 09.32

Date Received: 12.19.17 11.45
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300
Tech: OJS
Analyst: OJS
Seq Number: 3036815

Date Prep: 12.22.17 16.14

Prep Method: E300P
% Moisture:
Basis: Wet Weight

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
Tech: ARM
Analyst: ARM
Seq Number: 3036672

Date Prep: 12.21.17 07.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	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		



Certificate of Analytical Results 571793



COG Operating LLC, Artesia, NM

Gehrig Federal #001

Sample Id: T-2 1'
Lab Sample Id: 571793-006

Matrix: Soil
Date Collected: 12.13.17 09.32

Date Received: 12.19.17 11.45
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		



Certificate of Analytical Results 571793



COG Operating LLC, Artesia, NM

Gehrig Federal #001

Sample Id: T-2 2'
Lab Sample Id: 571793-007

Matrix: Soil
Date Collected: 12.13.17 09.34

Date Received: 12.19.17 11.45
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300
Tech: OJS
Analyst: OJS
Seq Number: 3036815

Date Prep: 12.22.17 16.14

Prep Method: E300P
% Moisture:
Basis: Wet Weight

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
Tech: ARM
Analyst: ARM
Seq Number: 3036672

Date Prep: 12.21.17 07.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	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		



Certificate of Analytical Results 571793



COG Operating LLC, Artesia, NM

Gehrig Federal #001

Sample Id: T-2 2'
Lab Sample Id: 571793-007

Matrix: Soil
Date Collected: 12.13.17 09.34

Date Received: 12.19.17 11.45
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		



Certificate of Analytical Results 571793



COG Operating LLC, Artesia, NM

Gehrig Federal #001

Sample Id: T-2 3'
Lab Sample Id: 571793-008

Matrix: Soil
Date Collected: 12.13.17 09.36

Date Received: 12.19.17 11.45
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: OJS

Analyst: OJS

Seq Number: 3036815

Date Prep: 12.22.17 16.14

Prep Method: E300P

% Moisture:

Basis: Wet Weight

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

Tech: ARM

Analyst: ARM

Seq Number: 3036672

Date Prep: 12.21.17 07.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	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	



Certificate of Analytical Results 571793



COG Operating LLC, Artesia, NM

Gehrig Federal #001

Sample Id: T-2 3'
Lab Sample Id: 571793-008

Matrix: Soil
Date Collected: 12.13.17 09.36

Date Received: 12.19.17 11.45
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3036624

Date Prep: 12.21.17 13.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

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		

- 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 **SQL** 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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(214) 902 0300	(214) 351-9139
(210) 509-3334	(210) 509-3335
(432) 563-1800	(432) 563-1713
(602) 437-0330	



QC Summary 571793

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



QC Summary 571793

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-BSO

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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CHAIN OF CUSTODY

Page 1 of 1

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Midland, Texas (432-704-5251)

www.xenco.com

Phoenix, Arizona (480-355-0900)

Xenco Quote #

Xenco Job #

5717973

Matrix Codes

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

Analytical Information

TPH EXTENDED
BTEX
CHLORIDES

Client / Reporting Information

Company Name / Branch:
COG Operating, LLC

Company Address:
2407 Pecos Ave, Artesia NM 88210

Email: shitchcock@concho.com
dneel2@concho.com; cgray@concho.com; rhaskell@concho.com

Project Contact: Sheldon Hitchcock

Sampler's Name: Sheldon Hitchcock

Project Information

Project Name/Number: Gering Federal #001

Project Location:

Eddy County, NM

Invoice To: COG Operating, LLC
Attn: Robert McNeill
600 W. Illinois Ave.
Midland TX, 79701

PO Number:

No. Field ID / Point of Collection

No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	Other	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		9:02	S	1									X	X	X	
3	T-1 2'	2		9:04	S	1									X	X	X	
4	T-1 3'	3		9:06	S	1									X	X	X	
5	T-2 0'	0		9:30	S	1									X	X	X	
6	T-2 1'	1		9:32	S	1									X	X	X	
7	T-2 2'	2		9:34	S	1									X	X	X	
8	T-2 3'	3		9:36	S	1									X	X	X	
9					S	1												
10					S	1												

Turnaround Time (Business days)

Data Deliverable Information

NK

☐ Same Day TAT

☐ 5 Day TAT

☐ Next Day EMERGENCY

☐ 7 Day TAT

☐ 2 Day EMERGENCY

☒ Contract TAT

☐ 3 Day EMERGENCY

☐ TRRP Checklist

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

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

Relinquished by Sampler:

Relinquished By:

Relinquished by:

Relinquished By:

Relinquished by:

Relinquished By:

Relinquished by:

Relinquished By:

Relinquished by:

Relinquished By:

Relinquished by:

Relinquished By:

Relinquished by:

Relinquished By:

Relinquished by:

Relinquished By:

Relinquished by:

Relinquished By:

Relinquished by:

Relinquished By:

Relinquished by:

Relinquished By:



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

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



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): **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 Matrix: Soil Date Received: 12.19.17 11.45
Lab Sample Id: 571794-001 Date Collected: 12.13.17 10.00
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**
Lab Sample Id: 571794-004

Matrix: Soil
Date Collected: 12.13.17 10.15

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	507	4.98	mg/kg	12.26.17 19.08		1

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

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

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



QC Summary 571794

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

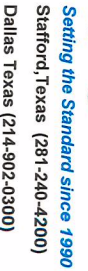
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	292	246	551	105	550	105	90-110	0	20	mg/kg	12.26.17 13:05	

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



Page 1 Of 1

Phoenix, Arizona (480-355-0900)

Xenco Quote #	Xenco Job #
	571794

Final 1.000



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