



December 27, 2018

Olivia Yu and Christina Hernandez  
Oil Conservation Division, District 1  
1625 N. French Dr.  
Hobbs, NM 88240

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

**Re: Revised - Closure Report  
Lightning 1 State SWD #1  
API #: 30-025-40917  
GPS: 32.5100899, -103.5271454  
RP#: 1RP-5160  
Unit Letter F, Section 1, Township 21 South, Range 33 East  
Lea County, New Mexico**

Ms. Olivia/Mr. Mann,

COG Operating, LLC (COG) is pleased to submit the following closure report in response to a release that occurred at the Lightning 1 State SWD #1 located in Unit Letter F, Section 1, Township 21 South and Range 33 East in Lea County, New Mexico.

## **BACKGROUND**

The release was discovered on August 13, 2018 and a C-141 initial report was submitted and approved by the New Mexico Oil Conservation Division (NMOCD). The produced water release occurred from a plug on a check valve malfunction. The release occurred inside the lined containment, with some overspray to the south end of the pad. Approximately eight (8) barrels of produced water were released and recovered seven (7) barrels. The initial C-141 is shown in Appendix A.

## **GROUNDWATER AND REGULATORY FRAMEWORK**

According to the New Mexico Office of the State Engineer (NMOSE), reported a water well located in Section 11 with ground water depth of 150 feet below surface. However, the USGS showed a water well in Section 31, Township 20 South, Range 35 East with a reported depth to water of 65' below surface. Based on the groundwater information, the average depth in the area is 50' to 100' below surface. The water well information is shown in Appendix B.



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

#### General Site Characterization and Groundwater:

Site Characterization	Average Groundwater Depth (ft.)
None Located	>50-100 feet

#### Delineation and Closure Criteria:

Remedial Action Levels (RALs)	
Chlorides	10,000 mg/kg
TPH (GRO and DRO and MRO)	2,500 mg/kg
TPH (GRO and DRO)	1,000 mg/kg
Benzene	10 mg/kg
Total BTEX	50 mg/kg

#### REMEDIATION PLAN

All samples were below the Table 1 closure criteria and thus no remediation will occur.

#### SITE RECLAMATION AND RESTORATION

The spill remained on the facility pad and no reclamation is required for the release.

#### CLOSURE REQUEST

Based on the information provided, COG requesting closure of the release. The signed C-141 Final is included in Appendix A. Should you have any questions or concerns on the closure report, please do not hesitate to contact me.

Sincerely,

Sincerely,

**Concho Operating, LLC**

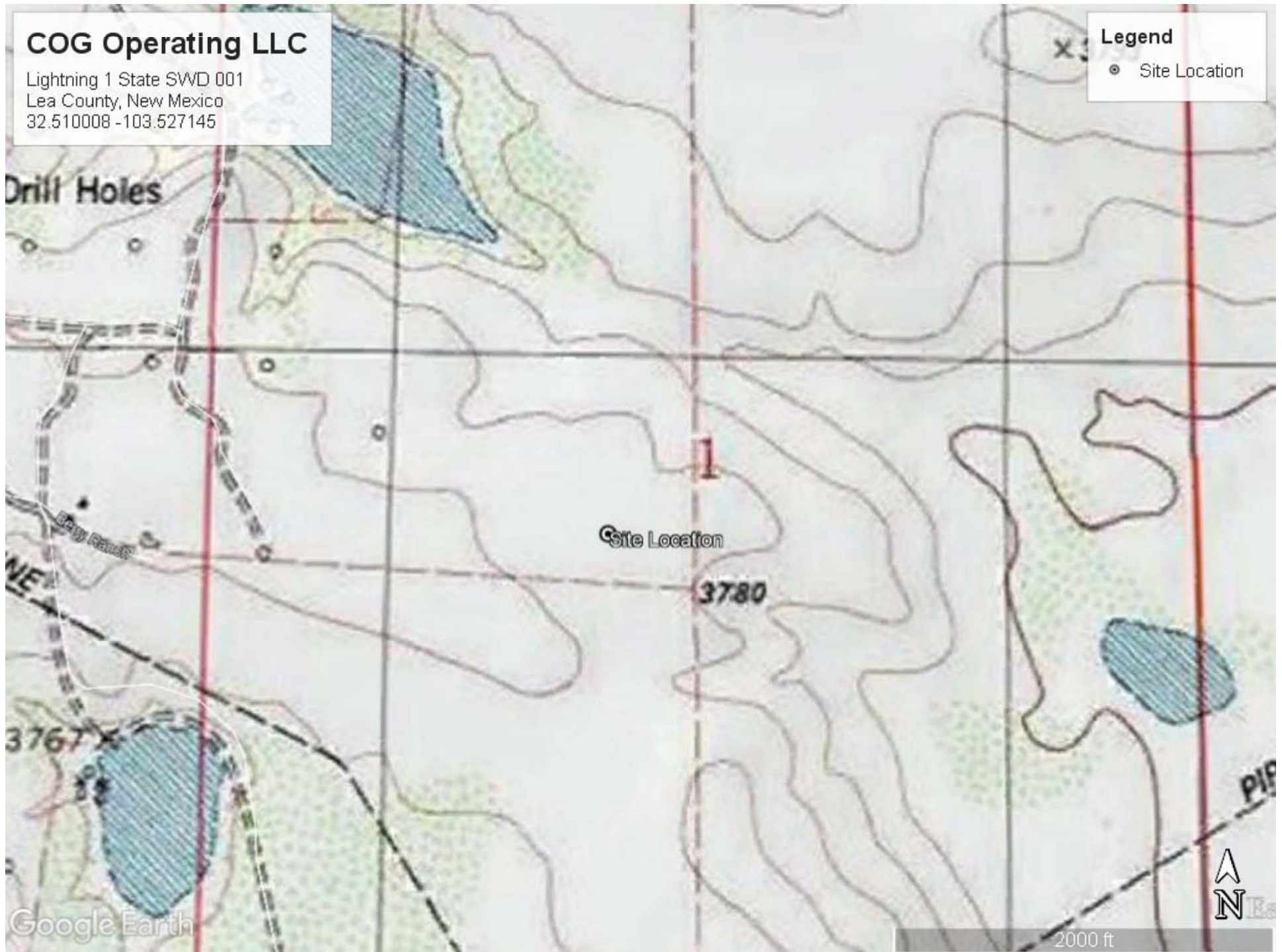


Ike Tavarez, P. G.  
Senior HSE Supervisor  
[itavarez@concho.com](mailto:itavarez@concho.com)



## Figures

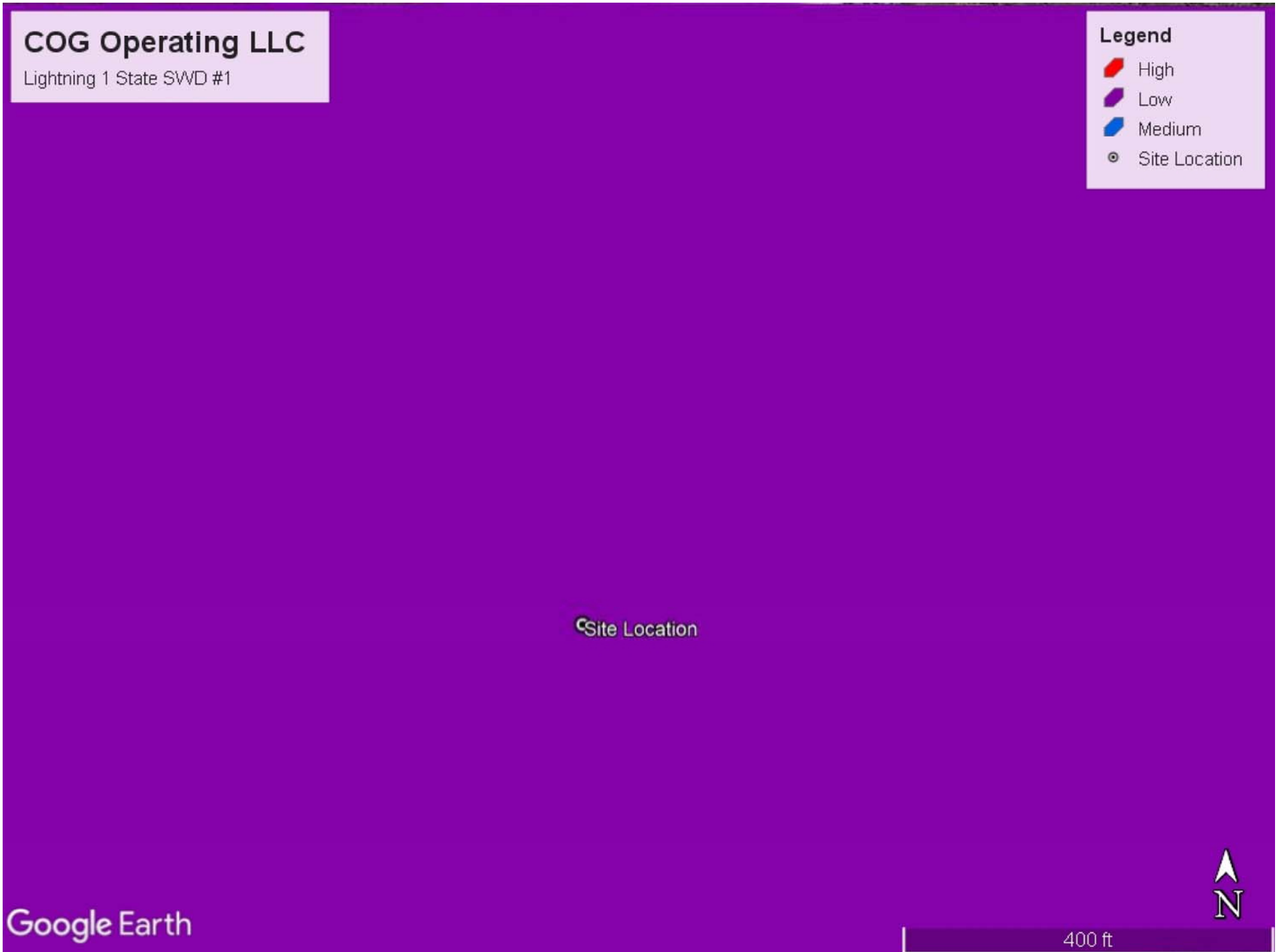














## Tables



**Table 1**  
**COG Operating LLC.**  
**Lightning SWD #2**  
**Lea County, New Mexico**

Sample ID	Sample Date	Sample Depth (ft)	Soil Status		TPH (mg/kg)						Benzene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)	
			In-Situ	Removed	GRO	DRO	MRO	Total	GRO	DRO				Total
Average Depth to Groundwater (ft) 50' - 100'														
NMOCD RAL Limits (mg/kg)					-	-	-	2,500	-	-	1,000	10	50	10,000
AH-1	8/23/2018	0-0.5	X		<14.9	<14.9	<14.9	<14.9	<14.9	<14.9	<14.9	<0.001	<0.001	380
AH-2	8/23/2018	0-0.5	X		<15.0	<15.0	<15.0	<15.0	<15.0	<15.0	<15.0	<0.001	<0.001	926

(-) Not Analyzed



## Appendix A



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

State of New Mexico  
Energy Minerals and Natural Resources  
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: <b>Lightning 1 State SWD #001</b>	Facility Type: Salt Water Disposal
Surface Owner: State	Mineral Owner: State
API No. 30-025-40917	

### LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
F	01	21S	33E	3,480	South	2,300	West	Lea

Latitude 32.5100899 Longitude -103.5271454 NAD83

### NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release: 8 bbl.	Volume Recovered: 7 bbl.
Source of Release: Valve Malfunctioned	Date and Hour of Occurrence: August 13, 2018 2:22pm	Date and Hour of Discovery: August 13, 2018 2:22pm
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.\*

**RECEIVED**

By Olivia Yu at 11:45 am, Aug 20, 2018

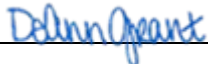

Describe Cause of Problem and Remedial Action Taken.\*

The release was caused by the plug on the check valve malfunctioning. The check valve is being replaced.

Describe Area Affected and Cleanup Action Taken.\*

The release occurred in the lined facility and on location. A vacuum truck was dispatched to remove all freestanding fluids. Concho will have the spill area evaluated for 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: 	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: DeAnn Grant	Approved by Environmental Specialist: 	
Title: HSE Administrative Assistant	Approval Date: <b>8/20/2018</b>	Expiration Date:
E-mail Address: agrant@concho.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: August 14, 2018 Phone: 432-253-4513	<b>NMAC 19.15.29 effective August 14, 2018. Complete release characterization before any significant remediation.</b>	

\* Attach Additional Sheets If Necessary

nOY1823242582

pOY1823243059

1RP-5160



Incident ID	
District RP	1RP 5160
Facility ID	
Application ID	

## Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	<u>50'-100'</u> (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
515	
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

### **Characterization Report Checklist:** *Each of the following items must be included in the report.*

- ☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- ☐ Field data
- ☒ Data table of soil contaminant concentration data
- ☒ Depth to water determination
- ☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
- ☐ Boring or excavation logs
- ☐ Photographs including date and GIS information
- ☒ Topographic/Aerial maps
- ☒ Laboratory data including chain of custody

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




State of New Mexico  
Oil Conservation Division

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Incident ID	
District RP	1RP 5160
Facility ID	
Application ID	

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

Printed Name: Ike Tavaréz Title: Senior HSE SupervisorSignature:  Date: 10/24/18email: itavarez@concho.com Telephone: 432-683-7443**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_



Incident ID	
District RP	1RP 5160
Facility ID	
Application ID	

## Closure


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

**Closure Report Attachment Checklist:** *Each of the following items must be included in the closure report.*

- ☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☐ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- ☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- ☒ Description of 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 OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Ike Tavarez Title: Senior HSE Supervisor


Signature:  Date: 10-29-18

email: itavarez@concho.com Telephone: 432-683-7443

### OCD Only

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by:  Date: 11/9/2022

Printed Name: Brittany Hall Title: Environmental Specialist



## Appendix B





# New Mexico Office of the State Engineer

## Water Column/Average Depth to Water

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

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

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

(quarters are smallest to largest) (NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
<a href="#">CP 00578</a>	CP	LE		4	3	11	21S	33E		636674	3595445*	165	150	15
<a href="#">CP 00579</a>	CP	LE		2	2	02	21S	33E		637438	3598269*	125	100	25
<a href="#">CP 00600 POD1</a>	CP	LE		2	4	25	21S	33E		639152	3591054*	65		
<a href="#">CP 00601 POD1</a>	CP	LE		2	1	28	21S	33E		633502	3591791*	223		
<a href="#">CP 00765 POD1</a>	CP	LE		3	2	13	21S	33E		638698	3594668*	508		
<a href="#">CP 00766 POD1</a>	CP	LE		3	2	13	21S	33E		638698	3594668*	510		
<a href="#">CP 00794 POD1</a>	CP	LE		4	1	1	18	21S	33E	629976	3594865*	160		
<a href="#">CP 00795 POD1</a>	CP	LE		4	1	1	18	21S	33E	629976	3594865*	170		
<a href="#">CP 00796 POD1</a>	CP	LE		2	2	4	02	21S	33E	637548	3597564*	102		
<a href="#">CP 00797 POD1</a>	CP	LE		1	2	4	02	21S	33E	637348	3597564*	110		
<a href="#">CP 00801 POD1</a>	CP	LE		3	2	1	11	21S	33E	636555	3596549*	200		
<a href="#">CP 00802 POD1</a>	CP	LE		3	3	2	02	21S	33E	637001	3598672	1154		
<a href="#">CP 00803 POD1</a>	CP	LE		3	2	2	02	21S	33E	637337	3598168*	1100		
<a href="#">CP 00804 POD1</a>	CP	LE		3	2	2	02	21S	33E	637337	3598168*	170		
<a href="#">CP 00854 POD1</a>	CP	LE		1	1	2	33	21S	33E	633879	3590223	950	600	350
<a href="#">CP 01290 POD1</a>	CP	LE		3	1	02	21S	33E		637114	3598855	1250	725	525
<a href="#">CP 01316 POD1</a>	CP	LE		3	2	4	02	21S	33E	637432	3597709	1370		
<a href="#">CP 01317 POD1</a>	CP	LE		1	3	2	02	21S	33E	636884	3598450	1250	1025	225
<a href="#">CP 01349 POD1</a>	CP	LE		2	3	1	27	21S	33E	635304	3591576	1188	572	616
<a href="#">CP 01355 POD1</a>	CP	LE		2	1	3	27	21S	33E	634773	3591061	1192	582	610
<a href="#">CP 01356 POD1</a>	CP	LE		4	2	2	33	21S	33E	634560	3590014	1098	555	543
<a href="#">CP 01357 POD1</a>	CP	LE		4	3	1	27	21S	33E	634782	3591347	1286	578	708
<a href="#">CP 01411 POD1</a>	CP	LE		2	2	34	21S	33E		635968	3590386	1149		
<a href="#">CP 01411 POD2</a>	CP	LE		1	2	34	21S	33E		635534	3590380	1125		

\*UTM location was derived from PLSS - see Help

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

9/10/18 11:47 AM

Page 1 of 2

WATER COLUMN/ AVERAGE  
DEPTH TO WATER



Average Depth to Water: **543 feet**

Minimum Depth: **100 feet**

Maximum Depth: **1025 feet**

---

**Record Count:** 24

**PLSS Search:**

**Township:** 21S

**Range:** 33E





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### Search Results -- 1 sites found

Agency code = usgs

site\_no list =

- 322641103311201

Minimum number of levels = 1

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### USGS 322641103311201 21S.33E.25.42322

Available data for this site

Lea County, New Mexico

Hydrologic Unit Code 13060011

Latitude 32°26'41", Longitude 103°31'12" NAD27

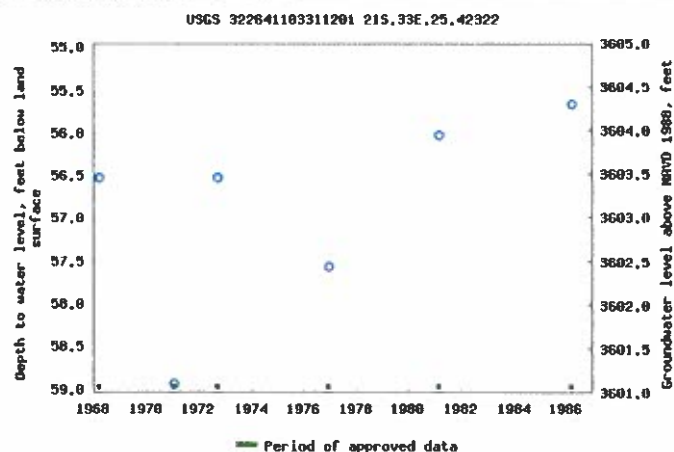
Land-surface elevation 3,660 feet above NAVD88

The depth of the well is 68 feet below land surface.

This well is completed in the Alluvium, Bolson Deposits and Other Surface Deposits (110AVMB) local aquifer.

#### Output formats

<a href="#">Table of data</a>
<a href="#">Tab-separated data</a>
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- 322702103344001

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## USGS 322702103344001 21S.33E.28.12443

Available data for this site:

Lea County, New Mexico

Hydrologic Unit Code 13070007

Latitude 32°27'13", Longitude 103°34'42" NAD27

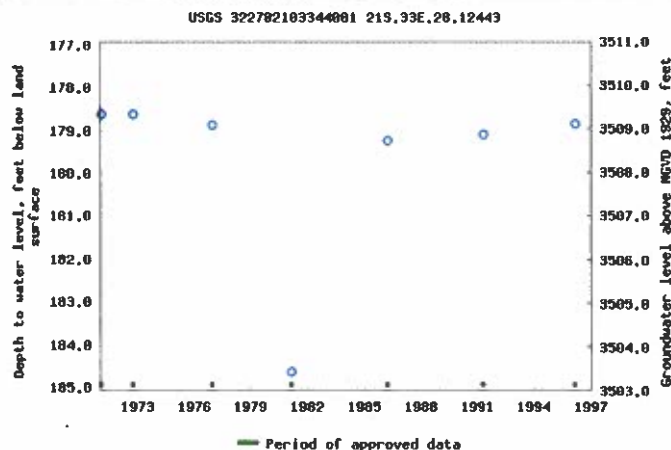
Land-surface elevation 3,688.00 feet above NGVD29

The depth of the well is 224 feet below land surface.

This well is completed in the Chinle Formation (231CHNL) local aquifer.

**Output formats**

<a href="#">Table of data</a>
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Agency code = usgs

site\_no list =

- 323148103295801

Minimum number of levels = 1

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### USGS 323148103295801 20S.35E.31.12311

Available data for this site

Lea County, New Mexico

Hydrologic Unit Code 13070007

Latitude 32°32'06", Longitude 103°30'03" NAD27

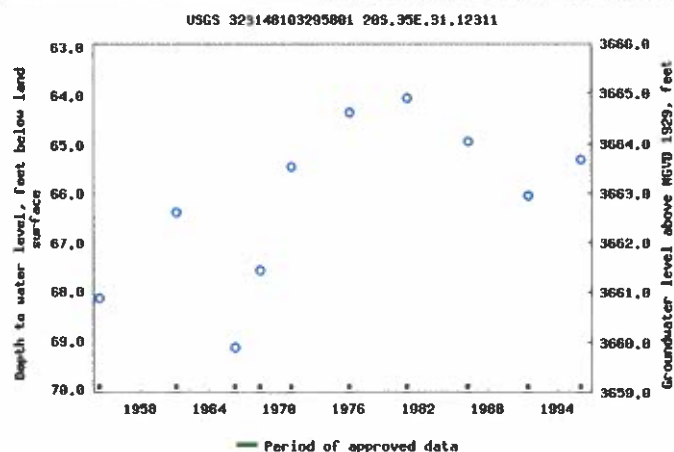
Land-surface elevation 3,729.00 feet above NGVD29

The depth of the well is 85 feet below land surface.

This well is completed in the Ogallala Formation (121OGLL) local aquifer.

**Output formats**

<a href="#">Table of data</a>
<a href="#">Tab-separated data</a>
<a href="#">Graph of data</a>
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Agency code = usgs

site\_no list =  
• 323106103273401

Minimum number of levels = 1

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## USGS 323106103273401 20S.35E.33.43413

Available data for this site

Lea County, New Mexico

Hydrologic Unit Code 13070007

Latitude 32°31'24", Longitude 103°27'36" NAD27

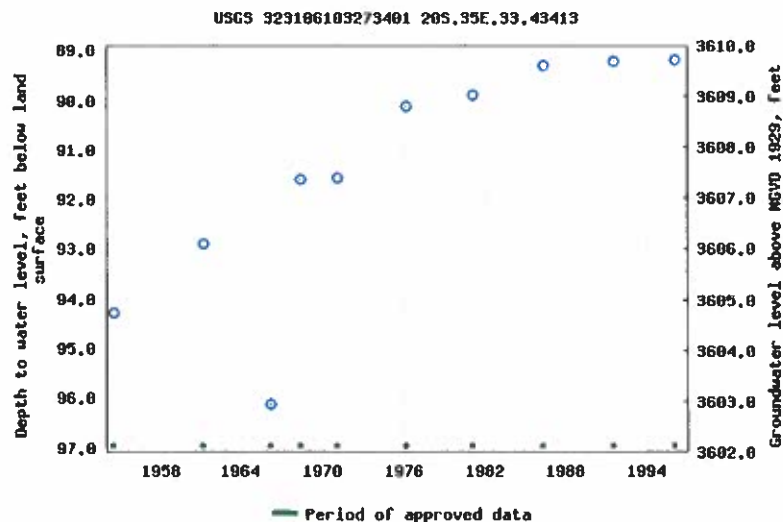
Land-surface elevation 3,699.00 feet above NGVD29

The depth of the well is 135 feet below land surface.

This well is completed in the Ogallala Formation (1210GLL) local aquifer.

### Output formats

<a href="#">Table of data</a>
<a href="#">Tab-separated data</a>
<a href="#">Graph of data</a>
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Minimum number of levels = 1

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USGS 323106103273401 20S.35E.33.43413

Available data for this site

Lea County, New Mexico

Hydrologic Unit Code 13070007

Latitude 32°31'24", Longitude 103°27'36" NAD27

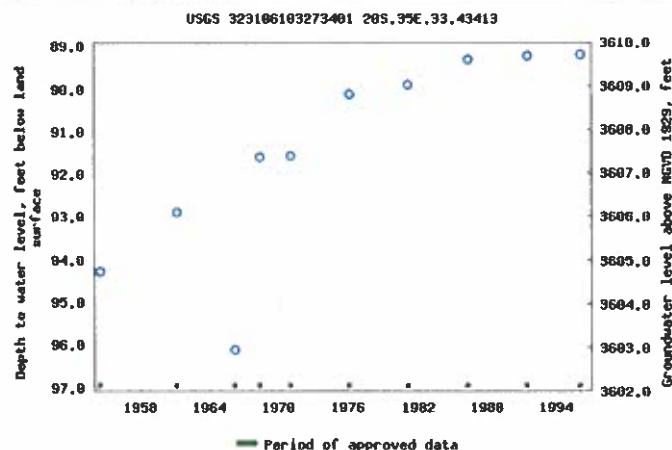
Land-surface elevation 3,699.00 feet above NGVD29

The depth of the well is 135 feet below land surface.

This well is completed in the Ogallala Formation (121OGLL) local aquifer.

**Output formats**

<a href="#">Table of data</a>
<a href="#">Tab-separated data</a>
<a href="#">Graph of data</a>
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## Appendix C





# Certificate of Analysis Summary 596933

COG Operating LLC, Artesia, NM

Project Name: Lightning #2 SWD (8/13/18)



Project Id:

Contact: Ike Tavaréz

Project Location: Lea County, New Mexico

Date Received in Lab: Fri Aug-24-18 08:53 am

Report Date: 31-AUG-18

Project Manager: Jessica Kramer

<b>Analysis Requested</b>	<b>Lab Id:</b>	596933-001	596933-002				
	<b>Field Id:</b>	AH-1 (0-0.5')	AH-2 (0-0.5')				
	<b>Depth:</b>						
	<b>Matrix:</b>	SOIL	SOIL				
	<b>Sampled:</b>	Aug-23-18 00:00	Aug-23-18 00:00				
<b>BTEX by EPA 8021B</b>	<b>Extracted:</b>	Aug-30-18 09:00	Aug-30-18 09:00				
	<b>Analyzed:</b>	Aug-30-18 10:53	Aug-30-18 11:14				
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL				
Benzene		<0.00199 0.00199	<0.00199 0.00199				
Toluene		<0.00199 0.00199	<0.00199 0.00199				
Ethylbenzene		<0.00199 0.00199	<0.00199 0.00199				
m,p-Xylenes		<0.00398 0.00398	<0.00398 0.00398				
o-Xylene		<0.00199 0.00199	<0.00199 0.00199				
Total Xylenes		<0.00199 0.00199	<0.00199 0.00199				
Total BTEX		<0.00199 0.00199	<0.00199 0.00199				
<b>Chloride by EPA 300</b>	<b>Extracted:</b>	Aug-27-18 08:15	Aug-27-18 08:15				
	<b>Analyzed:</b>	Aug-27-18 12:41	Aug-27-18 13:57				
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL				
Chloride		380 4.96	926 4.98				
<b>TPH By SW8015 Mod</b>	<b>Extracted:</b>	Aug-27-18 11:00	Aug-27-18 11:00				
	<b>Analyzed:</b>	Aug-27-18 14:15	Aug-27-18 14:35				
	<b>Units/RL:</b>	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

*Jessica Kramer*

Jessica Kramer  
Project Assistant



# Analytical Report 596933

## for COG Operating LLC

**Project Manager: Ike Tavaréz**

**Lightning #2 SWD (8/13/18)**

**31-AUG-18**

Collected By: Client



**1211 W. Florida Ave, Midland TX 79701**

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-18-27), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)  
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-13)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-17)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-16)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)

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

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

Xenco-Atlanta (LELAP Lab ID #04176)

Xenco-Tampa: Florida (E87429)

Xenco-Lakeland: Florida (E84098)





31-AUG-18

Project Manager: **Ike Tavaréz**

**COG Operating LLC**

2407 Pecos Avenue

Artesia, NM 88210

Reference: XENCO Report No(s): **596933**

**Lightning #2 SWD (8/13/18)**

Project Address: Lea County, New Mexico

**Ike Tavaréz:**

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 596933. 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. 596933 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,

A handwritten signature in black ink that reads 'Jessica Kramer'.

**Jessica Kramer**

Project Assistant

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

*Certified and approved by numerous States and Agencies.*

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

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



**Sample Cross Reference 596933****COG Operating LLC, Artesia, NM**

Lightning #2 SWD (8/13/18)

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
AH-1 (0-0.5')	S	08-23-18 00:00		596933-001
AH-2 (0-0.5')	S	08-23-18 00:00		596933-002



**CASE NARRATIVE****Client Name: COG Operating LLC****Project Name: Lightning #2 SWD (8/13/18)**

Project ID:

Work Order Number(s): 596933

Report Date: 31-AUG-18

Date Received: 08/24/2018

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**Sample receipt non conformances and comments:**None

---

**Sample receipt non conformances and comments per sample:**

None

**Analytical non conformances and comments:**

Batch: LBA-3061326 Inorganic Anions by EPA 300

Lab Sample ID 596933-002 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 596933-001, -002.

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

Batch: LBA-3061797 BTEX by EPA 8021B

Lab Sample ID 596933-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Benzene, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 596933-001, -002.

The Laboratory Control Sample for Toluene, Benzene, m,p-Xylenes, Ethylbenzene, o-Xylene is within laboratory Control Limits, therefore the data was accepted.

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





# Certificate of Analytical Results 596933

## COG Operating LLC, Artesia, NM

Lightning #2 SWD (8/13/18)

Sample Id: **AH-1 (0-0.5')**

Matrix: Soil

Date Received: 08.24.18 08.53

Lab Sample Id: 596933-001

Date Collected: 08.23.18 00.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 08.27.18 08.15

Basis: Wet Weight

Seq Number: 3061326

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	380	4.96	mg/kg	08.27.18 12.41		1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 08.27.18 11.00

Basis: Wet Weight

Seq Number: 3061397

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	08.27.18 14.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	08.27.18 14.15	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9	mg/kg	08.27.18 14.15	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	08.27.18 14.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	08.27.18 14.15	
o-Terphenyl	84-15-1	96	%	70-135	08.27.18 14.15	





# Certificate of Analytical Results 596933



## COG Operating LLC, Artesia, NM

Lightning #2 SWD (8/13/18)

Sample Id: **AH-1 (0-0.5')**

Matrix: Soil

Date Received: 08.24.18 08.53

Lab Sample Id: 596933-001

Date Collected: 08.23.18 00.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.30.18 09.00

Basis: Wet Weight

Seq Number: 3061797

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.30.18 10.53	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.30.18 10.53	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.30.18 10.53	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.30.18 10.53	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.30.18 10.53	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.30.18 10.53	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.30.18 10.53	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	91	%	70-130	08.30.18 10.53		
1,4-Difluorobenzene	540-36-3	95	%	70-130	08.30.18 10.53		





## Certificate of Analytical Results 596933



## COG Operating LLC, Artesia, NM

Lightning #2 SWD (8/13/18)

Sample Id: AH-2 (0-0.5')

Matrix: Soil

Date Received: 08.24.18 08.53

Lab Sample Id: 596933-002

Date Collected: 08.23.18 00.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 08.27.18 08.15

Basis: Wet Weight

Seq Number: 3061326

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	926	4.98	mg/kg	08.27.18 13.57		1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 08.27.18 11.00

Basis: Wet Weight

Seq Number: 3061397

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.27.18 14.35	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.27.18 14.35	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.27.18 14.35	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.27.18 14.35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	08.27.18 14.35	
o-Terphenyl	84-15-1	94	%	70-135	08.27.18 14.35	





# Certificate of Analytical Results 596933



## COG Operating LLC, Artesia, NM

Lightning #2 SWD (8/13/18)

Sample Id: **AH-2 (0-0.5')**

Matrix: Soil

Date Received: 08.24.18 08.53

Lab Sample Id: 596933-002

Date Collected: 08.23.18 00.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.30.18 09.00

Basis: Wet Weight

Seq Number: 3061797

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.30.18 11.14	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.30.18 11.14	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.30.18 11.14	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.30.18 11.14	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.30.18 11.14	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.30.18 11.14	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.30.18 11.14	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	93	%	70-130	08.30.18 11.14		
1,4-Difluorobenzene	540-36-3	97	%	70-130	08.30.18 11.14		





## 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

**SMP** Client Sample      **BLK** Method Blank

**BKS/LCS** Blank Spike/Laboratory Control Sample      **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

**MD/SD** Method Duplicate/Sample Duplicate      **MS** Matrix Spike      **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

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





**COG Operating LLC**  
Lightning #2 SWD (8/13/18)

**Analytical Method: Chloride by EPA 300**

Seq Number: 3061326

MB Sample Id: 7661166-1-BLK

Matrix: Solid

LCS Sample Id: 7661166-1-BKS

Prep Method: E300P

Date Prep: 08.27.18

LCSD Sample Id: 7661166-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<4.99	250	241	96	240	96	90-110	0	20	mg/kg	08.27.18 12:30	

**Analytical Method: Chloride by EPA 300**

Seq Number: 3061326

Parent Sample Id: 596933-001

Matrix: Soil

MS Sample Id: 596933-001 S

Prep Method: E300P

Date Prep: 08.27.18

MSD Sample Id: 596933-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	380	248	627	100	624	98	90-110	0	20	mg/kg	08.27.18 12:46	

**Analytical Method: Chloride by EPA 300**

Seq Number: 3061326

Parent Sample Id: 596933-002

Matrix: Soil

MS Sample Id: 596933-002 S

Prep Method: E300P

Date Prep: 08.27.18

MSD Sample Id: 596933-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	926	249	1110	74	1100	70	90-110	1	20	mg/kg	08.27.18 14:03	X

**Analytical Method: TPH By SW8015 Mod**

Seq Number: 3061397

MB Sample Id: 7661243-1-BLK

Matrix: Solid

LCS Sample Id: 7661243-1-BKS

Prep Method: TX1005P

Date Prep: 08.27.18

LCSD Sample Id: 7661243-1-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	915	92	1020	102	70-135	11	20	mg/kg	08.27.18 12:35	
Diesel Range Organics (DRO)	<15.0	1000	935	94	1050	105	70-135	12	20	mg/kg	08.27.18 12:35	

**Surrogate**

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	98		113		126		70-135	%	08.27.18 12:35
o-Terphenyl	100		100		109		70-135	%	08.27.18 12:35

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

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

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

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





**COG Operating LLC**  
Lightning #2 SWD (8/13/18)

**Analytical Method:** TPH By SW8015 Mod

Seq Number: 3061397

Parent Sample Id: 596931-009

Matrix: Soil

MS Sample Id: 596931-009 S

Prep Method: TX1005P

Date Prep: 08.27.18

MSD Sample Id: 596931-009 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	999	888	89	886	89	70-135	0	20	mg/kg	08.27.18 13:35	
Diesel Range Organics (DRO)	<15.0	999	917	92	925	93	70-135	1	20	mg/kg	08.27.18 13:35	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	115		112		70-135	%	08.27.18 13:35
o-Terphenyl	101		102		70-135	%	08.27.18 13:35

**Analytical Method:** BTEX by EPA 8021B

Seq Number: 3061797

MB Sample Id: 7661475-1-BLK

Matrix: Solid

LCS Sample Id: 7661475-1-BKS

Prep Method: SW5030B

Date Prep: 08.30.18

LCSD Sample Id: 7661475-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0822	82	0.0892	89	70-130	8	35	mg/kg	08.30.18 08:51	
Toluene	<0.00200	0.0998	0.0804	81	0.0844	84	70-130	5	35	mg/kg	08.30.18 08:51	
Ethylbenzene	<0.00200	0.0998	0.0924	93	0.0965	97	70-130	4	35	mg/kg	08.30.18 08:51	
m,p-Xylenes	<0.00399	0.200	0.177	89	0.184	92	70-130	4	35	mg/kg	08.30.18 08:51	
o-Xylene	<0.00200	0.0998	0.0834	84	0.0869	87	70-130	4	35	mg/kg	08.30.18 08:51	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	94		94		97		70-130	%	08.30.18 08:51
4-Bromofluorobenzene	91		94		93		70-130	%	08.30.18 08:51

**Analytical Method:** BTEX by EPA 8021B

Seq Number: 3061797

Parent Sample Id: 596933-001

Matrix: Soil

MS Sample Id: 596933-001 S

Prep Method: SW5030B

Date Prep: 08.30.18

MSD Sample Id: 596933-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0453	45	0.0634	64	70-130	33	35	mg/kg	08.30.18 09:31	X
Toluene	<0.00202	0.101	0.0417	41	0.0580	58	70-130	33	35	mg/kg	08.30.18 09:31	X
Ethylbenzene	<0.00202	0.101	0.0460	46	0.0644	65	70-130	33	35	mg/kg	08.30.18 09:31	X
m,p-Xylenes	<0.00403	0.202	0.0872	43	0.122	61	70-130	33	35	mg/kg	08.30.18 09:31	X
o-Xylene	<0.00202	0.101	0.0395	39	0.0563	57	70-130	35	35	mg/kg	08.30.18 09:31	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	96		96		70-130	%	08.30.18 09:31
4-Bromofluorobenzene	83		87		70-130	%	08.30.18 09:31

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

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

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

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









Client: COG Operating LLC

Date/ Time Received: 08/24/2018 08:53:00 AM

Work Order #: 596933

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

Brianna Teel

Date: 08/24/2018

Checklist reviewed by:

Jessica Kramer

Date: 08/27/2018



**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 157312

CONDITIONS

Operator: COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701	OGRID: 229137
	Action Number: 157312
	Action Type: [IM-SD] Incident File Support Doc (ENV) (IM-BNF)

CONDITIONS

Created By	Condition	Condition Date
bhall	Requirements of 19.15.29.13 NMAC will need to be met when the site is no longer being used for production operations.	11/9/2022