**CONCHO** 

Dakota Neel HSE Coordinator

December 19, 2017

Mike Bratcher Oil Conservation Division District 2 – Artesia 811 S First St. Hobbs, NM 88210

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

Yolanda Jordan Bureau of Land Management 620 E. Green St. Carlsbad, NM 88220

Re: Closure Request Letter Cluster State Com #001H (2RP-3820 & 2RP-3792) Eddy County, NM

Mr. Bratcher/Ms. Tucker,

COG Operating LLC is pleased to submit for your consideration the following Closure Request for the Cluster State Com #001H. This Closure Request Letter is in response to two different produced water releases that occurred on July 16, 2016 and August 3, 2016. A C-141 Initial report was submitted to the New Mexico Oil Conservation Division (NMOCD) and Bureau of Land Management (BLM) on July 19, 2016 (2RP-3792) and August 3, 2016 (2RP-3820). All work has been completed in accordance with the work plan submitted and approved by the NMOCD and BLM on November 21, 2016 and February 1, 2017, respectively.

### **BACKGROUND**

Two reportable releases occurred on this location. On July 16, 2016, a release was discovered on a flow line running from the Cluster State Com #001H. The release was from a ruptured poly flowline and occurred in the pasture. The damaged portion of the flowline was repaired, however on August 3, 2016, another release occurred on the same section of flowline resulting in a release which impacted the same area as the previous release. Each event resulted in the release of approximately ten (10) barrels (bbl.) of produced water for a total of twenty (20) bbl. Work plans were submitted to the NMOCD and BLM on November 18, 2016 and November 21st, 2016, repsectively.

NMOCD December 19, 2017 Page 2

### REMEDIAL ACTIONS

As requested by the BLM, confirmation samples were collected prior to backfilling the excavation. Soil samples were collected from three (3) locations (S1, S2, S3). Bottom hole confirmation samples were collected at 4-5 ft below ground surface (bgs) for S1, 6-7 ft bgs. for S2, and 2-3 ft bgs. for S3. The soil samples were submitted to a laboratory for analysis of chloride.

Analytical results indicate chloride concentration did not migrate vertically past the initial sampling results.

Cluste	r State Com #	‡001H
Sample	Date	Chloride
ID	Date	mg/Kg
S-1 4-5'	2/27/2016	512
S-2 6-7'	2/27/2016	272
S-3 2-3'	2/27/2016	463

### **WORK PLAN**

Based on the information provided, COG Operating, LLC would like to submit the enclosed documents for closure of 2RP-3792 and 2RP-3820. A signed Final C-141 for each release is enclosed for your consideration. Please feel free to contact me with any questions or concerns at (575) 746-2010.

Sincerely,

Dakota Neel

**HSE Coordinator** 

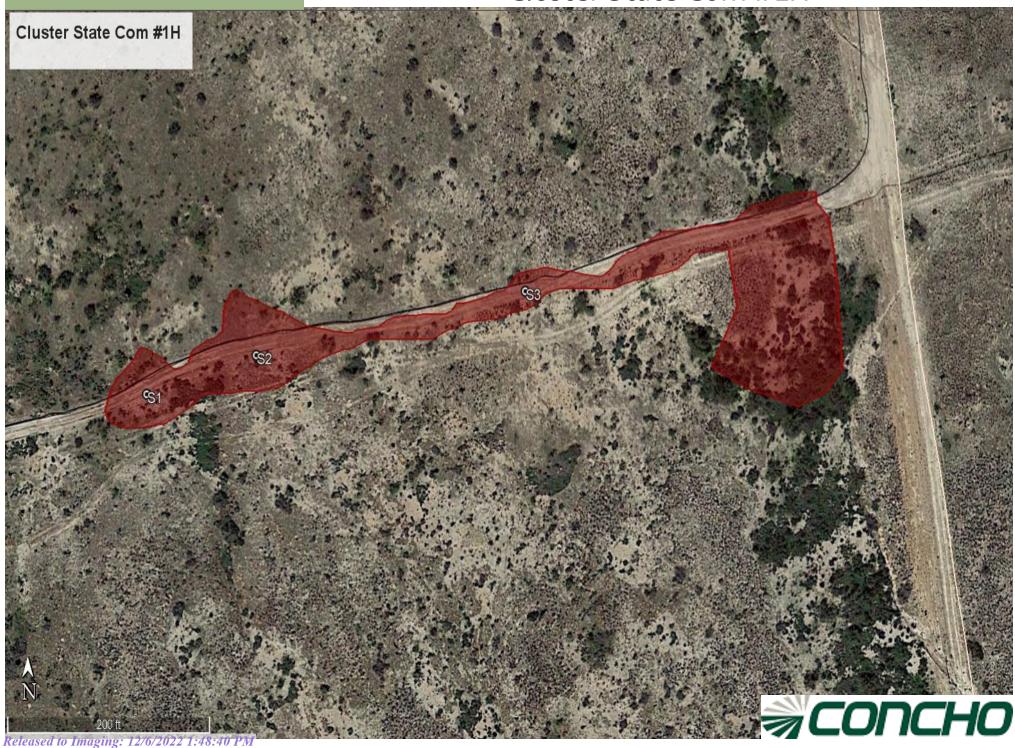
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### **Enclosed**

- 1. Site Diagram
- 2. Laboratory Analysis
- 3. Work Plan
- 4. Initial C-141 (Copy)
- 5. Final C-141

### Cluster State Com #1H

Site Diagram





February 28, 2017

DAKOTA NEEL

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: CLUSTER STATE COM #1H

Enclosed are the results of analyses for samples received by the laboratory on 02/28/17 9:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at <a href="https://www.tceq.texas.gov/field/ga/lab">www.tceq.texas.gov/field/ga/lab</a> accred certif.html.

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

Method EPA 552.2 Haloacetic Acids (HAA-5)
Method EPA 524.2 Total Trihalomethanes (TTHM)
Method EPA 524.4 Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

Celey D. Keene

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

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



### Analytical Results For:

COG OPERATING
DAKOTA NEEL
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

 Received:
 02/28/2017
 Sampling Date:
 02/27/2017

 Reported:
 02/28/2017
 Sampling Type:
 Soil

Project Name: CLUSTER STATE COM #1H Sampling Condition: \*\* (See Notes)
Project Number: NOT GIVEN Sample Received By: Jodi Henson

Project Location: EDDY COUNTY, NM

### Sample ID: S-1 4-5' (H700494-01)

Chloride, SM4500Cl-B	mg/	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	512	16.0	02/28/2017	ND	448	112	400	3.64	

Cardinal Laboratories \*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whistoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene



### **Notes and Definitions**

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

recovery.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

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

\*\*\* Insufficient time to reach temperature.

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

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

Cardinal Laboratories \*=Accredited Analyte

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Celey D. Keene

Relinduished By:

Date: 2-28-1 Time; 00

Received By:

Received By:

ptions, loss of use, or loss of profits incurred by client, its subsidiaries

Phone Result:
Fax Result:
REMARKS:

□ Yes

□ No

Add'l Phone #: Add'l Fax #:

Time: 2-23 -/7

Relinquished by: service. In no event shall Car

# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

### 101 East Marland, Hobbs, NM 88240 (575) 393-2326 FAX (575) 393-2476

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Project Manager:	Dakota Neel	1				P.O.	#																					-
Address: 2208	2208 West Main					Company:	npa	ny:		COG Operating LLC	ng LLC																	-
킀	State: NM	2	Zip	88210		Attn:				Robert McNeill	eiii																	
Phone #:	432-215-2783 Fax #:					Address:	res	S		600 W Illinois	nois																	_
Project #:	Project Owner:	er:				City:				Midland																		-
ame:	Cluster State Com #001H					State: TX	te:	X		Zip: 79701																		
$\underline{\circ}$						Pho	one	#	(43%	Phone #: (432) 221-0388											_							
Sampler Name:	Aaron Lieb					Fax #:	#																					-
FOR LAB USE ONLY			_	MATRIX	×		PRESERV	SE	R <	SAMPLING	G										_							
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER WASTEWATER SOIL OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME	BTEX	ТРН	Chloride						1		1						
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PLEASE NOTE: Liability and analyses. All claims including	PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the cirent for a replicable analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable.	for any claim	arising	whether based in a unless made in w	contrac vriting an	or tor	t, shall	ll be li y Car	mited dinal	to the amount pak within 30 days afte	by the client for a completion of the fient, its subsidian	e applica ies,	ble															

s. Please fax written changes to 575-393-2476

Sampler - UPS - Bus - Other: Delivered By: (Circle One)

Sample Condition
Cool Intact

Yes Yes
No No

jo.

CHECKED BY: (Initials)

rhaskell@concho.com

dneel2@concho.com alieb@concho.com

Page 4 of 4



February 28, 2017

DAKOTA NEEL

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: CLUSTER STATE COM #1H

Enclosed are the results of analyses for samples received by the laboratory on 02/28/17 9:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at <a href="https://www.tceq.texas.gov/field/ga/lab\_accred\_certif.html">www.tceq.texas.gov/field/ga/lab\_accred\_certif.html</a>.

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Method EPA 552.2 Haloacetic Acids (HAA-5)
Method EPA 524.2 Total Trihalomethanes (TTHM)
Method EPA 524.4 Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

Celey D. Keene

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

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



### Analytical Results For:

COG OPERATING
DAKOTA NEEL
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received: 02/28/2017 Reported: 02/28/2017

Project Name: CLUSTER STATE COM #1H
Project Number: NOT GIVEN

Project Location: EDDY COUNTY, NM

Sampling Date: 02/27/2017

Sampling Type: Soil

Sampling Condition: \*\* (See Notes)
Sample Received By: Jodi Henson

### Sample ID: S3 - 2-3' (H700496-01)

Chloride, SM4500Cl-B	mg/	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	464	16.0	02/28/2017	ND	448	112	400	3.64	

Cardinal Laboratories \*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whistoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celeg & Frence



### **Notes and Definitions**

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

recovery.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

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

\*\*\* Insufficient time to reach temperature.

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

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

Cardinal Laboratories \*=Accredited Analyte

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Celeg D. Freene



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(010) 000 2020 170 (010) 000 2710			
Company Name: COG Operating LLC	BILL TO		ANALYSIS REQUEST
Project Manager: Dakota Neel	P.O. #:		
Address: 2208 West Main	Company: COG Operating LLC	ating LLC	
City: Artesia State: NM Zip	88210 Attn: Robert McNeill	Neill	
Phone #: 432-215-2783 Fax #:	Address: 600 W Illinois	linois	
Project #: Project Owner:	City: Midland		
ame: Cluster State Com #0011	State: TX Zip: 79701	3	
Project Location:	Phone #: (432) 221-0388		
Sampler Name: Aaron Lieb	Fax #:		
$\neg$	MATRIX PRESERV. SAMPLING	ING	
H700496  (G)RAB OR (C)OMP. # CONTAINERS GROUNDWATER	WASTEWATER SOIL OIL SLUDGE OTHER: ACID/BASE: ICE / COOL OTHER:	BTEX TPH Chloride	
53 - 2-3'		2:30/A X	
PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after competion of the applicable service. In no event shall Capitral be liable for incidental or consequental damages, including which limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors astign on the far related to the netformance of services hereunder by Capitral, teaching so of whether such claim is based upon any of the above stated reasons or otherwise.	ether based in contract or tort, shall be limited to the amount pa less made in writing and received by Cardinal within 30 days at business interruptions, loss of use, or loss of profits incurred by of whether such claim is based upon any of the above stated in	id by the client for the re completion of the applicable client, its subsidiaries, pasons or otherwise.	
Relinquished By:  Date: 2-28-/7 Time:	By:	Phone Result: ☐ Yes ☐ No Fax Result: ☐ Yes ☐ No REMARKS:	No Add'I Phone #: No Add'I Fax #:
Date: Received	va Ma		dneel2@concho.com alieb@concho.com rhaskell@concho.com
Jun	Sample Condition CHECKED BY:  Cool Intact (Initials)		maskell@concho.com
Sampler - UPS - Bus - Other: 9.20	es Z	2	
s. Please fax written changes to 575-393-2476			

Page 4 of 4



February 28, 2017

DAKOTA NEEL

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: CLUSTER STATE COM #1H

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Celey D. Keene

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Sincerely,

Celey D. Keene

Lab Director/Quality Manager



### Analytical Results For:

COG OPERATING
DAKOTA NEEL
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

 Received:
 02/28/2017
 Sampling Date:
 02/27/2017

 Reported:
 02/28/2017
 Sampling Type:
 Soil

Project Name: CLUSTER STATE COM #1H Sampling Condition: \*\* (See Notes)
Project Number: NOT GIVEN Sample Received By: Jodi Henson

Project Location: EDDY COUNTY, NM

### Sample ID: S2 - 6-7' (H700497-01)

Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	272	16.0	02/28/2017	ND	448	112	400	3.64	

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Celey D. Keene



### **Notes and Definitions**

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recovery.

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RPD Relative Percent Difference

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\*\*\* Insufficient time to reach temperature.

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Celeg D. Freene

s. Please fax written changes to 575-393-2476

## 101 East Marland, Hobbs, NM 88240 (575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

	ŀ	410						
company Name:	COG Operating LLC		BILL TO				ANALYSIS REQUEST	
Project Manager:	: Dakota Neel		P.O. #:			_		
Address: 2208	2208 West Main		Company: COG Operating LLC	ating LLC	, ,			
City: Artesia	State: NM	<b>Zi</b> p 88210		Neill				
Phone #:	432-215-2783 Fax #:		Address: 600 W Illinois	llinois				
Project #:	Project Owner:	n	City: Midland	Δ.				
Project Name: (	Cluster State Com #001H		State: TX Zip: 79701	2				
Project Location:			(432	ω				_
Sampler Name:	Aaron Lieb		Fax #:					
FOR LAB USE ONLY		MATRIX	PRESERV. SAMPLING	ING				
Lab I.D. 1100497	Sample I.D.	(G)RAB OR (C)OMP. # CONTAINERS GROUNDWATER WASTEWATER SOIL OIL SLUDGE		BTEX	ТРН	Chloride		
	52 - 6-7'		14	,>		*		
analyses. All claims including analyses. All claims including service. In no event shall Card affiliates or successor arising	T-CAPSE MVIE: Learning and Jarnages. Cardinal's labrilly and client's exclusive remoty for any claim arising whether based in contract or fort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal writin 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequental damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successor arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.	ny claim arising whether based in contract or deemed waived unless made in writing and without limitation, business interruptions, lo ardinal, regardless of whether such claim is	or tort, shall be limited to the amount pain received by Cardinal within 30 days aftenceived by Cardinal within 30 days aftences of use, or loss of profits incurred by considered representations.	d by the client for the r completion of the applicat lient, its subsidiaries, asons or otherwise.	и́е			
Relinquished By:	Date:	Received By:	_	Phone Result: Fax Result: REMARKS:	□ Yes	O No	Add'l Phone #: Add'l Fax #:	
Relimentshed By:	Date: 28/17	Received By:	Makey				dneel2@concho.com alieb@concho.com	
Delivered By: (Circle One)		~ (0	on CHECKED BY: (Initials)			Th:	rhaskell@concho.com	
Sampler - UPS -	Bus - Other:	9.30 Dyes Dyes	15					

Page 4 of 4

		SIT	E INFORM	MATION						
	R	eport Type	: Work P	lan 2	2RP-382	0				
General Site In	formation:									
Site:		Cluster State	Com #001H							
Company:		COG Operati	_=							
	ship and Range		Sec. 16	T 26S	R 27E					
Lease Number:	:	API No. 30-0	15-37547							
County:		Eddy								
Facility GPS:			32.0486679º N			104.2026672° W				
Release GPS:	-	01-1-	32.03728° N			104.21032° W				
Surface Owner Mineral Owner:		State								
Directions:						HITES CITY RD APPRX 7.8MI, TRN S RD & FOLLOW RD TO GPS.				
Release Data: Date Released:		8/3/2016								
Type Release:		Produced Wa	ter							
Source of Conta	mination:	Damaged Flowline								
Fluid Released:		10 bbls								
Fluids Recovere		0 bbls								
Official Commu	unication:									
Name:	Robert McNeil				Ike Tavare	Z				
Company:	COG Operating, L	LC			Tetra Tech					
Address:	One Concho Cent	er			4000 N. Big Spring					
	600 W. Illinois Ave	).			Ste 401					
City:	Midland Texas, 79	701			exas					
Phone number:	(432) 686-3023			(432) 687-8110						
Fax:	(432) 684-7137				, , , , , ,					
Email:	rmcneil@conchc	presources.com			lke.Tavar	ez@tetratech.com				

Depth to Groundwater:	Ranking Score	Site Data
<50 ft	20	
50-99 ft	10	
>100 ft.	0	
WellHead Protection:	Ranking Score	Site Data
Water Source <1,000 ft., Private <200 ft.	20	
Water Source >1,000 ft., Private >200 ft.	0	0
Surface Body of Water:	Ranking Score	Site Data
<200 ft.	20	
200 ft - 1,000 ft.	10	
>1,000 ft.	0	0
Total Ranking Score:	10	
Ac	cceptable Soil RRAL (m	g/kg)
Benz	ene Total BTEX	TPH
10	0 50	1,000



October 3, 2016

Heather Patterson Environmental Engineer Specialist Oil Conservation Division, District 2 811 S. First Street Artesia, New Mexico 88210

Re: Work Plan for the COG Operating LLC., Cluster State Com #001H, Unit D, Section 16, Township 26 South, Range 27 East, Eddy County, New Mexico. 2RP-3820

Ms. Patterson:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC., (COG) to assess a spill from Cluster State Com #001H, Unit D, Section 16, Township 26 South, Range 27 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.03728°, W 104.21032°. The site location is shown on Figures 1 and 2.

### Background

According to the State of New Mexico C-141 Initial Report, the leak was discovered on August 3, 2016, and released approximately ten (10) barrels of produced water due to a damaged flowline. None of the fluids were recovered. The initial C-141 lists the site as being in Section 16, however the release occurred in the pasture in Section 17, and measured approximately 150'x 175 and 50'x 555'. The initial C-141 form is included in Appendix A.

### Groundwater

According to the NMOCD groundwater map, the average depth to groundwater in this area is less than 50' below surface. No water wells were listed within Sections 16 or 17. The site location shows an approximate surface elevation of 3305'.

One well in Section 22 is listed on the New Mexico State Engineers Well Report showed a depth to groundwater of 50' below surface and has a surface elevation of approximately 3105'. Additionally, the Geology and Groundwater Resources of Eddy County, NM (Report 3) reported two water wells in Section 5 and 13, Township 26 South, Range 27 East. These wells reported groundwater depths of 12.0' and 35.0', with surface elevations of 3105' and 3068', respectively. The well locations appear to be installed in the draw areas and may be producing from

Tetra Tech

4000 North Big Spring, Suite 401, Midland, TX 79705
Tel 432.682.4559 Fax 432.682.3946 www.tetratech.com



the shallow alluvium formation. The main aquifer in the area is from the deeper Rustler Formation. Based on relative elevations, the depth to groundwater in this area appears to be greater than 50' below surface. The groundwater data is shown in Appendix B.

### Regulatory

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, dated August 13, 1993. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the depth to groundwater, the proposed RRAL for TPH is 1,000 mg/kg.

### Soil Assessment and Analytical Results

On September 14, 2016 Tetra Tech personnel were onsite to evaluate and sample the release area. Eight (8) boreholes (BH-1 through BH-8) and one auger hole (AH-1) were installed to depths of 7.5' to 40.0' below surface. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. The borehole drilling logs are included in Appendix C. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix D. The sampling results are summarized in Table 1. The borehole and auger hole locations are shown on Figure 3.

Referring to Table 1, none of the areas sampled showed total TPH or BTEX concentrations above the RRAL's. However, the areas of boreholes (BH-1, BH-2, BH-3 and BH-4) as well as auger hole (AH-1) showed elevated chloride concentrations in the shallow soils.

The area of auger hole (AH-1), showed chloride concentrations that increased with depth to 15,200 mg/kg at 3-3.5' below surface before declining to 3,680 mg/kg at 4-4.5' below surface. Deeper samples were not collected due to a dense formation and the impact area was not vertically defined.

Boreholes (BH-1, BH-2, BH-3 and BH-4) showed chloride highs at 0-1' below surface with concentrations of 30,800 mg/kg, 24,400 mg/kg, 9,060 mg/kg and 13,600 mg/kg, which declined with depth with bottom hole samples of 128 mg/kg at 39-40', 144 mg/kg at 29-30', 128 mg/kg at 29-30' and 576 mg/kg at 14-15', respectively. All of the boreholes were vertically defined or significantly declined with depth. Boreholes (BH-5, BH-6, BH-7 and BH-8) did not show a significant chloride concentrations and do not appear to be an environmental concern.



Based on the results, Tetra Tech returned to the site on September 22, 2016, to confirm and define the extents in the area of auger hole (AH-1) using a stainless steel hand auger. Selected samples were analyzed chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix D. The sampling results are summarized in Table 1. The auger hole location are shown on Figure 3.

Referring to Table 1, the area of auger hole (AH-1) showed chloride concentrations that increased with depth to 12,600 mg/kg at 3-3.5' below surface. However, the chloride impact declined with depth to 37.8 mg/kg at 7-7.5' below surface. The impacted areas was vertically defined.

### Work Plan

Based on the results, COG proposes to remove impacted material as highlighted (green) in Table 1 and shown on Figure 4. The areas of borehole (BH-1) and auger hole (AH-1) will be excavated to a depth of approximately 4.0' to 5.0' below surface. The areas of boreholes (BH-3 and BH-4) will be excavated to a depth of approximately 2.0' to 3.0' and 6.0' to 7.0' in the area of borehole (BH-2) to remove the chloride impacted soils. The excavated areas will be backfilled with clean material to surface grade. The excavated material will be transported offsite for proper disposal.

The proposed excavation depths may not be reached due to wall cave ins and safety concerns for onsite personnel. In addition, impacted soil around oil and gas equipment, structures or lines may not be feasible or practicable to be removed due to safely concerns for onsite personnel. As such, Tetra Tech will excavate the impacted soils to the maximum extent practicable

Upon completion, a final report will be submitted to the NMOCD. If you have any questions or comments concerning the assessment or the proposed remediation activities for this site, please call me at (432) 682-4559.

Respectfully submitted,

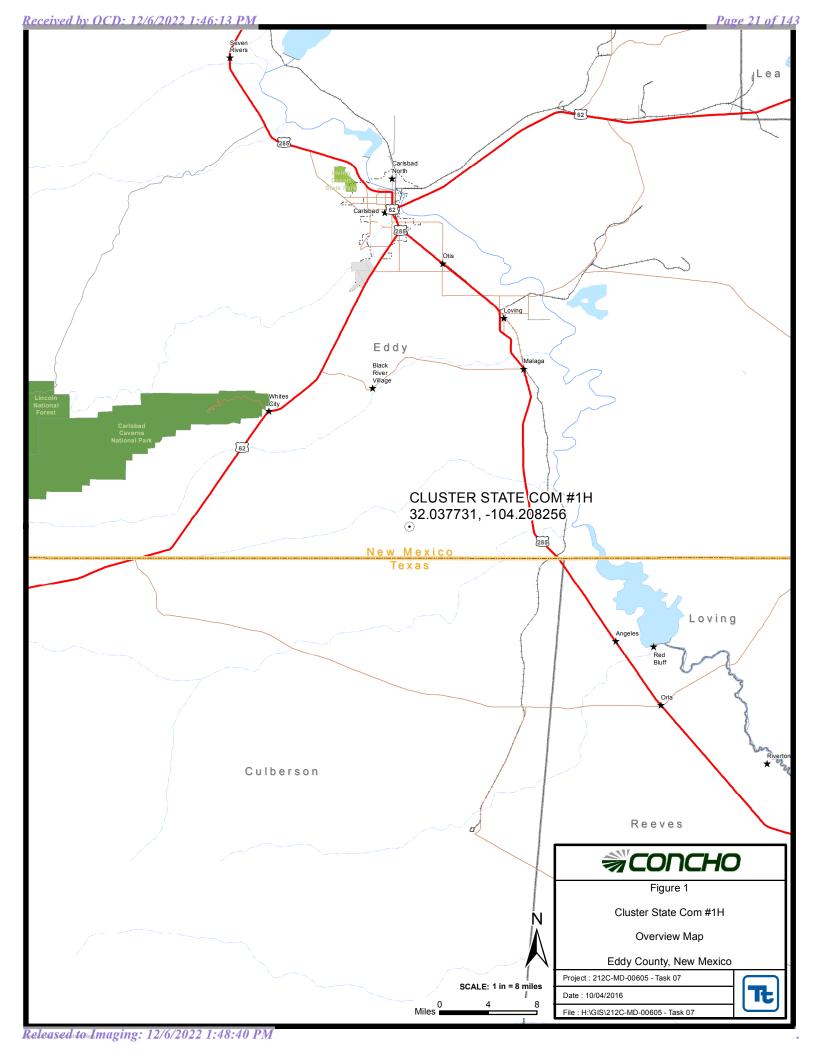
**TETRA TECH** 

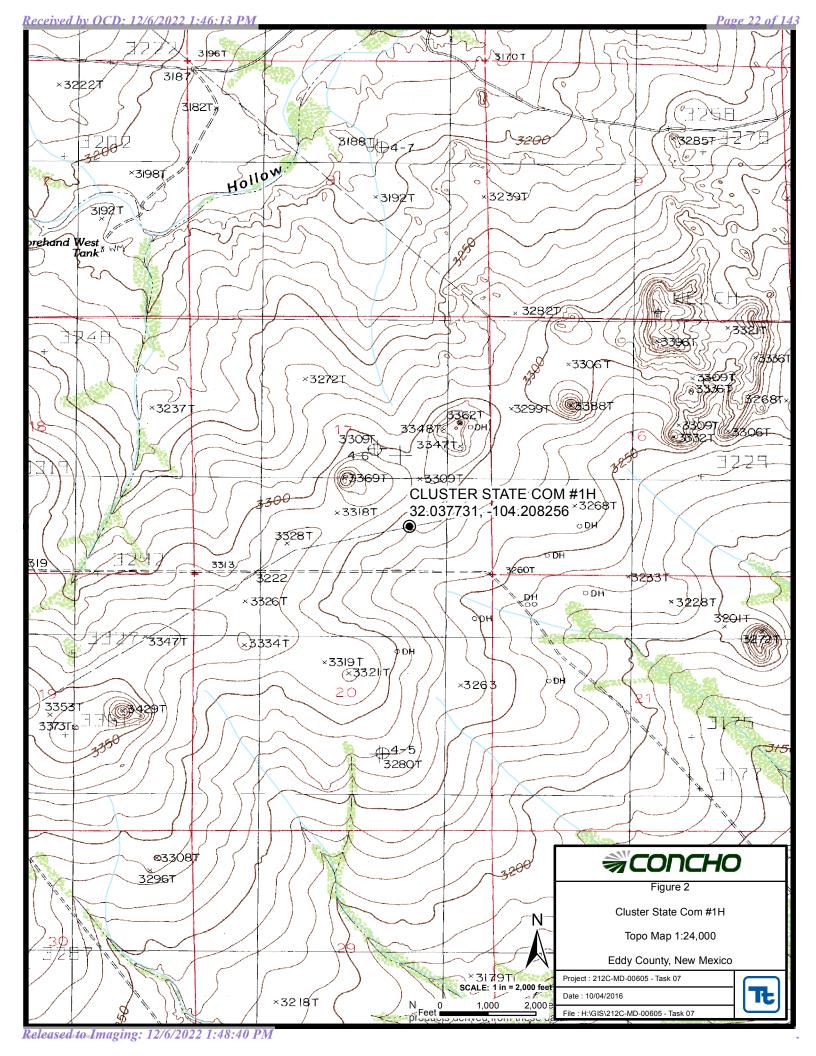
Clair Gonzales, Geologist I Ike Tavarez,

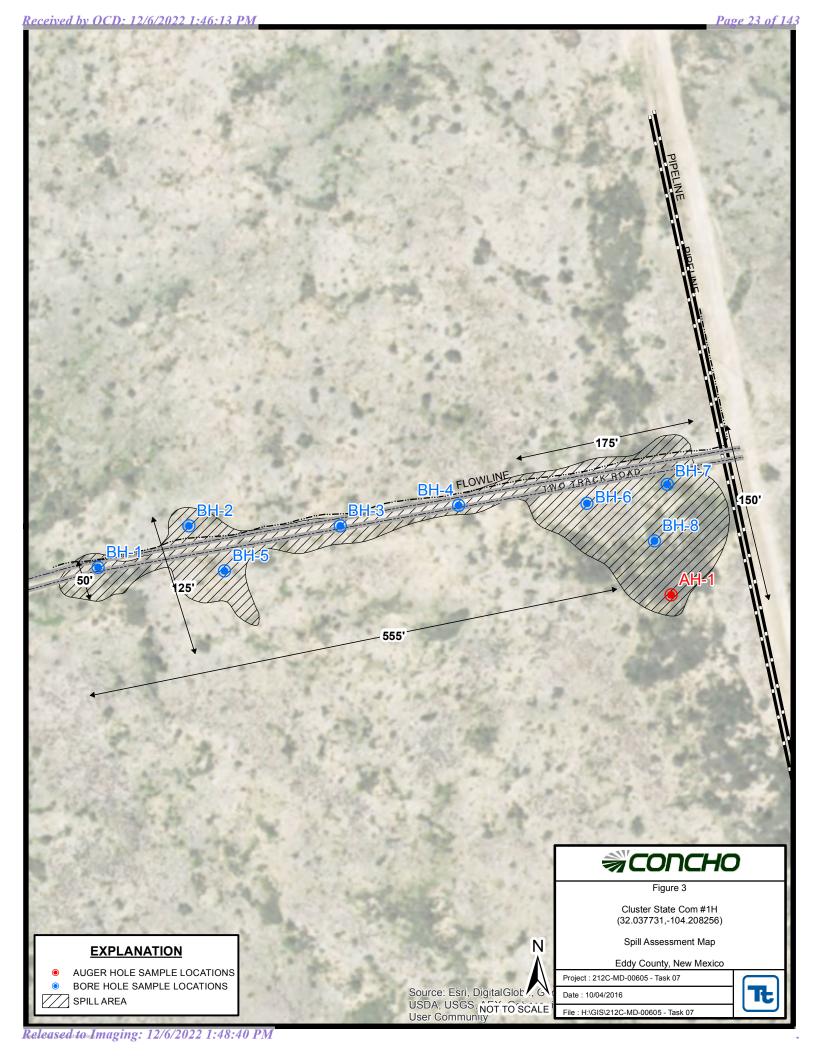
Senior Project Manager, P.G.

cc: Robert McNeill – COG Dakota Neel – COG

Figures







### **Tables**

Table 1
COG Operating LLC.
Cluster State Commingle #1H
Eddy County, New Mexico

Commis ID	Sample	Sample	Soil	Status	7	ΓΡΗ (mg/k	g)	Benzene	Toluene	Ethlybenzene	Xylene	Total BTEX	Chloride
Sample ID	Date	Depth (ft)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
BH-1	9/14/2016	0-1	Χ		<10.0	<10.0	<20.0	<0.050	<0.050	<0.050	<0.150	<0.300	30,800
	"	2-3	Χ			-	-	-	-	-	-	-	17,600
	"	4-5	Χ		•	1	1	-	-	ı	-	-	2,560
	"	6-7	Χ		-	ı	ı	-	-	ı	-	ı	544
	"	9-10	Χ		-	-	-	-	-	-	-	-	80.0
	"	14-15	Χ		-	ı	ı	-	-	ı	-	ı	48.0
	"	19-20	Χ		-	ı	ı	-	-	ı	-	ı	192
	II .	24-25	Χ		-	-	-	-	-	-	-	-	144
	"	29-30	Χ		-	ı	ı	-	-	-	-	ı	96.0
	II .	39-40	Χ		-	ı	ı	-	-	ı	-	ı	128
BH-2	9/14/2016	0-1	Х		<10.0	<10.0	<20.0	<0.050	<0.050	<0.050	<0.150	<0.300	24,400
	"	2-3	Х		-	-	-	-	-	-	-	-	22,800
	"	4-5	Х		-	-	-	-	-	-	-	-	8,130
	"	6-7	Х		-	-	-	-	-	-	-	-	2,560
	"	9-10	Х		-	-	-	-	-	-	-	-	672
	"	14-15	Х		-	-	-	-	-	-	-	-	432
	"	19-20	Х		-	-	-	-	-	-	-	-	320
	"	24-25	Х		-	-	-	-	-	-	-	-	272
	"	29-30	Х		-	-	-	-	-	-	-	-	144

Table 1
COG Operating LLC.
Cluster State Commingle #1H
Eddy County, New Mexico

Onese la ID	Sample	Sample	Soil	Status	1	ΓΡΗ (mg/k	g)	Benzene	Toluene	Ethlybenzene	Xylene	Total BTEX	Chloride
Sample ID	Date	Depth (ft)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
BH-3	9/14/2016	0-1	Χ		<10.0	<10.0	<20.0	<0.050	<0.050	<0.050	<0.150	<0.300	9,060
	"	2-3	Χ		-	-	-	-	-	-	-	-	7,730
	"	4-5	Χ		-	1	1	-	-	ı	-	1	832
	II	6-7	Χ		-	ı	ı	-	-	ı	-	ı	880
	II .	9-10	Χ		-	-	-	-	-	-	-	-	352
	"	14-15	Χ		-	-	-	-	-	-	-	-	528
	"	19-20	Χ		-	-	-	-	-	-	-	-	624
	"	24-25	Χ		-	-	-	-	-	-	-	-	288
	"	29-30	Х		-	-	-	-	-	-	-	-	128
BH-4	9/14/2016	0-1	Х		<10.0	<10.0	<20.0	<0.050	<0.050	<0.050	<0.150	<0.300	13,600
	"	2-3	Х		-	-	-	-	-	-	-	-	12,000
	"	4-5	Х		-	-	-	-	-	-	-	-	176
	"	6-7	Х		-	-	-	-	-	-	-	-	160
	"	9-10	Х		-	-	-	-	-	-	-	-	288
	"	14-15	Х		-	-	-	-	-	-	-	-	576
BH-5	9/14/2016	0-1	Х		<10.0	<10.0	<20.0	<0.050	<0.050	<0.050	<0.150	<0.300	48.0
	II .	2-3	Χ		-	-	-	-	-	-	-	-	288
	"	4-5	Х		-	-	-	-	-	-	-	-	48.0
	II .	6-7	Х		-	-	-	-	-	-	-	-	144
	"	9-10	Х		-	-	-	-	-	-	-	-	96.0
	"	14-15	Х		-	-	-	-	-	-	-	-	48.0

Table 1
COG Operating LLC.
Cluster State Commingle #1H
Eddy County, New Mexico

Sample ID	Sample	Sample	Soil	Status	-	ΓΡΗ (mg/k	g)	Benzene	Toluene	Ethlybenzene	Xylene	Total BTEX	Chloride
	Date	Depth (ft)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
BH-6	9/14/2016	0-1	X		<10.0	<10.0	<20.0	<0.050	<0.050	<0.050	<0.150	<0.300	<16.0
	"	2-3	Х		-	-	-	-	-	-	-	-	48.0
	"	4-5	Χ		-	-	-	-	-	-	-	-	48.0
	"	6-7	Χ		-	-	-	-	-	-	-	-	<16.0
	"	9-10	Х		-	-	-	-	-	-	-	-	<16.0
	II	14-15	Х		-	-	-	-	-	-	-	-	48.0
BH-7	9/15/2016	0-1	Х		<10.0	<10.0	<20.0	<0.050	<0.050	<0.050	<0.150	<0.300	64.0
	"	2-3	Χ		-	-	-	-	-	-	-	-	64.0
	"	4-5	Χ		-	-	-	-	-	-	-	-	32.0
	"	6-7	Χ		-	-	-	-	-	-	-	-	32.0
	II	9-10	Х		-	-	-	-	-	-	-	-	48.0
BH-8	9/15/2016	0-1	Х		<10.0	23.8	23.8	<0.050	<0.050	<0.050	<0.150	<0.300	<16.0
	"	2-3	Х		-	-	-	-	-	-	-	-	<16.0
	"	4-5	Х		-	-	-	-	-	-	-	-	32.0
	"	6-7	Х		-	-	-	-	-	-	-	-	176
	"	9-10	Χ		-	-	-	-	-	-	-	-	80.0

Table 1
COG Operating LLC.
Cluster State Commingle #1H
Eddy County, New Mexico

0 1 15	Sample	Sample	Soil	Status	-	ΓΡΗ (mg/k	g)	Benzene	Toluene	Ethlybenzene	Xylene	Total	Chloride
Sample ID	Date	Depth (ft)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	BTEX (mg/kg)	(mg/kg)
AH-1	9/15/2016	0-1	Х		<10.0	23.8	23.8	<0.050	<0.050	<0.050	<0.150	<0.300	928
	"	1-1.5	Х		-	-	-	-	-	-	-	-	11,600
	"	2-2.5	Х		-	-	-	-	-	-	-	-	12,000
	"	3-3.5	Х		-	-	-	-	-	-	-	-	15,200
	"	4-4.5	Х		-	-	-	-	-	-	-	-	3,680
AH-1	9/22/2016	0-1	Х		-	-	-	-	-	-	-	-	4,120
	"	1-1.5	Х		-	-	-	-	-	-	-	-	9,480
	"	2-2.5	Х		-	-	-	-	-	-	-	-	10,800
	"	3-3.5	Х		-	-	-	-	-	-	-	-	12,600
	"	4-4.5	Х		-	-	-	-	-	-	-	-	3,040
	"	5-5.5	Х		-	-	-	-	-	-	-	-	665
	"	6-6.5	Х		-	-	-	-	-	-	-	-	373
	"	7-7.5	Х		-	-	-	-	-	-	-	-	37.8

( - ) Not Analyzed

Proposed Excavation Depths

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 NM OIL CONSERVATION
ARTESIA DISTRICT

Form C-141 Revised August 8, 2011

AUG (1.4.2)]]6 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

RECEIVED

Durat of this order												
				ase Notific	atior	and Co	rrective A	ction				
nABI	14218	13445	3			OPERAT	OR		☑ Initia	Report		Final Report
Name of Co				ng LLC 224	1137	Contact:		Rol	ert McNe			
Address:				lland TX 79701		Telephone N		432	2-683-7443	}		
Facility Na	me:	CLUSTER	STATE	COM #001H		Facility Typ	e:		Flowline			
Surface Ow	ner:	State		Mineral O	wner:	··········			API No.	30-0	15-37	547
				LOCA	TIOI	N OF REI	EASE					
Unit Letter	Section	Township	Range	Feet from the		/South Line	Feet from the	1	Vest Line	<b></b>	Coun	
D	16	26S	27E	380'		North	330*		Vest		Edd	<u>y</u>
				Latitude 32.04	36679	Longitu	ide 104.202667	2				
			•	NAT	URE	OF RELI	EASE					
Type of Rele	ease:		-			Volume of			Volume R			
Source of Re	1	Produced	Water	· · · · · · · · · · · · · · · · · · ·		1	of Produced Wat			bls of Proc		
Source of Ke	elease:	Flowli	ine				our of Occurrence 3/2016   10:30 am			lour of Dis 18/03/2016		
Was Immedi	iate Notice (					If YES, To			-	,		
			Yes 🛭	]No 🖾 Not Re	quired							
By Whom?						Date and F						
Was a Water	rcourse Read		F-			If YES, Vo	lume Impacting	the Wate	ercourse.			
			Yes 🗵	No								
If a Waterco	urse was Im	pacted, Descr	ibe Fully.	•								_
Í												
Describe Ca	use of Probl	em and Reme	dial Actio	n Taken,*	<u></u>							
		A poly	line was	lamaged by a veh	icle or r	oad equipmen	n. Replaced dama	nged sec	tion of line.			
Describe Ar	en Affected	and Cleanup	Action Ta	ken.*					·	<u></u>		
		-										
This relea	se occurred	on a 4" polyli	ne on the	side of the road. A	spill ar	rea of 200'X1	'. Conche will ha	ve the s	pill site sam	pled to del	ineate a	ny possible
contami	nation from	the release an	d we will	present a remedia	tion wo	rk plan to the	NMOCD for app	roval pr	tor to any si	gnificant re	meala	tion work.
I hereby cer	tify that the	information g	iven abov	e is true and comp	lete to t	he best of my	knowledge and (	ındersta	nd that purs	uant to NM	IOCD I	rules and
regulations :	all operators	are required (	io report a	nd/or file certain r	elease r	notifications a	nd perform corre	ctive act	ions for rele	ases which	n may e	ndanger
public health	h or the envi	ironment. The	e acceptan	ce of a C-141 repo y investigate and r	ort by th	te NMOCD m	iarked as "Final F	teport" (	ioes not reli	eve the ope	rator o	l liability
or the envir	operacions ( noment. In a	nave ratied to addition NM(	acequater ICD acce	y investigate and r ptance of a C-141	renort o	te contaminat foes not reliev	on mar pose a m e the operator of	reat to g	ibility for c	, surface w	uici, m with an	v other
		ws and/or reg		, , , , , , , , , , , , , , , , , , ,	. uport u				,			
							OIL CON	<u>SERV</u>	/ATION	<b>DIVISI</b>	<u> </u>	)
Signature:		7.4	<u>~ 11</u>	<del>/</del>				,	1/			'
Printed Nam	ne:	Rober	n Grubbs .	Jr.	1	Approved by	Environmental 5	Specialis	tr	6/	/	) 
							اجاجات	A		Date: N	/Δ	
Title:	S	Senior Enviror	mental Co	pordinator		Approval Da	ie: 01:///0	<u> </u>	Expiration	Date: 1 y	'/7	
E-mail Add	ress:	rgrubbs@	concho.c	om		Conditions o	f Approval:			A 6 = -1		
_						Remedia	tion per O.C.	.D. Ru	les & Gu	idélines	u LJ	
Date:	August 4, .		Phone:	432-683-7443		SUBMIT	REMEDIAŢĮÇ	)N PR	OPOSAL	NO		7 7010
Attach Add	iitionai She	ets If Neces	sary			LATER T	HAN: <i>'リ</i> //	811/	D		ZK	2.3820

Appendix B

### Water Well Data Average Depth to Groundwater (ft) COG - Cluster State Com #001H Eddy County, New Mexico

	25 Sc	uth	26	East	
6	5	4	3	2	1
			45		
7	8	9 45	10	11	12
60					
18	17	16	15	14	13
19	20	21	22	23	24
			118		
30	29	28	27	26	25
31	32	33	34	35	36

	25 Sc	outh	27	East	
6	5	4	3	2	1
7	8	9	10	11	12 <b>92</b>
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33 19	34	35	36

	25	South	28	B East	
6	5	4 3	<b>3 32</b>	2	1
	59				Site
7	8	9	10	11	12
18	17	16	15 <b>48</b>	14	13
67			49		
19	20	21	22	23	24
	96				
30	29	28	27	26 <b>40</b>	25
	15	90			5
31	32	33	34	35	36
					40

	26 Sc	uth	26	East	
6	5	4	3	2	1
7	8 22	9	10	11	12
18	17	16	15 <b>31</b>	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

	26 Sc	outh	27	East	
6	5	4	3	2	1
	12				
7	8	9	10	11	12
18	17	16	15	14	13
	SITE				35
19	20	21	22	23	24
			50		
30	29	28	27	26	25
31	32	33	34	35	36

	26 Sc	uth	28	East	
6	5	4	3	2 <b>120</b>	1
				21	
7	8	9	10	11	12
					100
18	17	16	15	14	13
				120	56
19	20	21	22	23	24
			120		
30	29	28	27	26	25
31	32	33	34	35	36

- 88 New Mexico State Engineers Well Reports
- 105 USGS Well Reports
- 90 Geology and Groundwater Conditions in Southern Lea, County, NM (Report 6)
- 90 Geology and Groundwater Resources of Eddy County, NM (Report 3)
- 34 NMOCD Groundwater Data
- 123 Tetra Tech installed temporary wells and field water level
- 143 NMOCD Groundwater map well location



### 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

(R=POD has been replaced, O=orphaned,

& no longer serves a C=the file is water right file.) 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	Count	Q Q v 64.16		Sec	Tws	Rna	x	Y	•	Depth Water Water Column
C 02218	CUB	ED	4 1					573039	3546725*		
C 02219	CUB	ED	4 4	4 (	05	26S	27E	575033	3547948* 🌕	35	
C 02474	CUB	ED	4	3 (	02	26S	27E	578964	3548029* 🌕	100	
C 02475	CUB	ED	2	4	13	26S	27E	581450	3545252* 🌕	100	
C 02476	CUB	ED	4	1 :	24	26S	27E	580653	3544032* 🌕	150	
C 02930	С	ED	2 3	4 2	22	26S	27E	577938	3543284* 🌍	100	50 50

Average Depth to Water: 50 feet

> Minimum Depth: 50 feet

Maximum Depth: 50 feet

**Record Count:** 6

**PLSS Search:** 

Township: 26S Range: 27E

\*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.

Appendix C

### SAMPLE LOG

	SAM	PLE LOG		
Client:	cog			
Site Name	Cluster State Com #001H			
Boring/Well:	BH-1			
GPS	32.03728, -104.21032			
Project #:	212C-MD-00605.07			
Total Depth	40'			
Date Installed:	9/14/2016			
DEPTH (Ft)	SAMPLE DESCRIPTION	NOTES	Field Chloride (mg/kg)	CONDUCTIVITY (ppm)
0-1'	Fine to medium brown sand	No stain or odor	-	12,430
2-3'	Friable caliche & medium brown sand	No stain or odor	-	10,830
4-5'	Gypsum, friable caliche & fine red sand	No stain or odor	-	2,750
6-7'	Gypsum, friable caliche & fine red sand	No stain or odor	-	1,430
9-10'	Gypsum, friable caliche & fine red sand	No stain or odor		1,390
14-15'	Gypsum, friable caliche & fine red sand	No stain or odor	-	1,420
19-20'	Sandy red clay & gypsum (40%)	No stain or odor	-	1,750
24-25'	Sandy red clay & gypsum (40%)	No stain or odor	-	1,770
29-30'	Caliche, gypsum & medium red sand (10%)	No stain or odor	500	1,580
39-40'	Caliche, gypsum & medium red sand (10%)	No stain or odor	400	1710
	, , , , , , , , , , , , , , , , , , ,			

### SAMPLE LOG

	SAMPI	LE LOG		
Client:	cog			
Site Name	Cluster State Com #001H			
Boring/Well:	BH-2			
GPS	32.03741, -104.20970			
Project #:	212C-MD-00605.07			
Total Depth	30'			
Date Installed:	9/14/2016			
DEPTH (Ft)	SAMPLE DESCRIPTION	NOTES	Field Chloride (mg/kg)	CONDUCTIVITY (ppm)
0-1'	Red to brown silty sand & caliche	No stain or odor	-	11,440
2-3'	Red to brown silty sand & caliche	No stain or odor	-	9,450
4-5'	Red to brown sand & limestone with caliche	No stain or odor	-	10,460
6-7'	Red to brown sand & limestone with caliche	No stain or odor	-	7,180
9-10'	Red mediums sand, limestone & gypsum (20%)	No stain or odor		2,460
14-15'	Red clay, tan sand & gypsum	No stain or odor	-	1,920
19-20'	Red clay, tan sand & gypsum	No stain or odor	-	1,880
24-25'	Red clay & gypsum	No stain or odor	350	1,910
29-30'	Gypsum	No stain or odor	375	975

	SAMPL	E LOG		
Client:	cog			
Site Name	Cluster State Com #001H			
Boring/Well:	BH-3			
GPS	32.03757, -104.20942			
Project #:	212C-MD-00605.07			
Total Depth	30'			
Date Installed:	9/14/2016			
DEPTH (Ft)	SAMPLE DESCRIPTION	NOTES	Field Chloride (mg/kg)	CONDUCTIVITY (ppm)
0-1'	Medium to fine brown sand	No stain or odor	-	6,620
2-3'	Brown sand & friable caliche	No stain or odor	-	5,270
4-5'	Brown sand with caliche (10%)	No stain or odor	-	2,460
6-7'	Red to brown mediums sand with gypsum (10%)	No stain or odor	-	2,950
9-10'	Red clay & gypsum	No stain or odor	-	2,240
14-15'	Red clay, gypsum & limestone	No stain or odor	-	2,530
19-20'	Red clay & gypsum	No stain or odor	300	2,130
24-25'	Red clay & gypsum	No stain or odor	375	1,980
29-30'	Red clay, gypsum & limestone	No stain or odor	250	1,820
	7,371			•

	SAMP	LE LOG		
Client:	COG			
Site Name	Cluster State Com #001H			
Boring/Well:	BH-4			
GPS	32.03770, -104.20879			
Project #:	212C-MD-00605.07			
Total Depth	15'			
Date Installed:	9/14/2016			
			Field Chloride	
DEPTH (Ft)	SAMPLE DESCRIPTION	NOTES	(mg/kg)	CONDUCTIVITY (ppm)
0-1'	Friable caliche	No stain or odor	-	7,020
2-3'	Friable caliche	No stain or odor	-	9,050
4-5'	Friable caliche & gypsum	No stain or odor	-	1,217
6-7'	Gypsum and fine tan sand	No stain or odor	-	2,160
9-10'	Red to brown sand clay, limestone & gypsum	No stain or odor	250	1,560
14-15'	Red to brown sand clay, limestone & gypsum	No stain or odor	250	1,530

	SA	MPLE LOG		
Client:	cog			
Site Name	Cluster State Com #001H			
Boring/Well:	BH-5			
GPS	32.03729, -104.20988			
Project #:	212C-MD-00605.07			
Total Depth	15'			
Date Installed:	9/14/2016			
			<u> </u>	
DEPTH (Ft)	SAMPLE DESCRIPTION	NOTES	Field Chloride (mg/kg)	CONDUCTIVITY (ppm)
0-1'	Friable caliche	No stain or odor	-	851
2-3'	Friable caliche	No stain or odor	-	1,460
4-5'	Gypsum	No stain or odor	400	1,680
6-7'	Gypsum	No stain or odor	-	1,075
9-10'	Red clay & gypsum	No stain or odor	400	2,050
14-15'	Gypsum	No stain or odor	300	1,100
				·

	SAI	MPLE LOG		
Client:	COG			
Site Name	Cluster State Com #001H			
Boring/Well:	BH-6			
GPS	32.03745, -104.20844			
Project #:	212C-MD-00605.07			
Total Depth	15'			
Date Installed:	9/14/2016			
DEPTH (Ft)	SAMPLE DESCRIPTION	NOTES	Field Chloride (mg/kg)	CONDUCTIVITY (ppm)
0-1'	Fine tan sand & friable caliche	No stain or odor	-	879
2-3'	Fine tan sand & friable caliche	No stain or odor	-	960
4-5'	Fine tan sand, friable caliche & gypsum	No stain or odor	400	1,320
6-7'	Fine tan sand, friable caliche & gypsum	No stain or odor	-	1,243
9-10'	Fine tan sand, friable caliche & gypsum	No stain or odor	175	1,300
14-15'	Red clay & gypsum	No stain or odor	200	1,470
				, .

	SA	MPLE LOG		
Client:	cog			
Site Name	Cluster State Com #001H			
Boring/Well:	BH-7			
GPS	32.03736, -104.20829			
Project #:	212C-MD-00605.07			
Total Depth	10'			
Date Installed:	9/15/2016			
DEPTH (Ft)	SAMPLE DESCRIPTION	NOTES	Field Chloride (mg/kg)	CONDUCTIVITY (ppm)
0-1'	Friable caliche & tan silt	No stain or odor	-	755
2-3'	Friable caliche & tan silt	No stain or odor	-	1,205
4-5'	Fine brown sand & caliche	No stain or odor	-	1,050
6-7'	Silty sand & caliche	No stain or odor	150	1,500
9-10'	Silty sand & caliche	No stain or odor	150	1,340

	SAMI	PLE LOG		
Client:	cog			
Site Name	Cluster State Com #001H			
Boring/Well:	BH-8			
GPS	32.03768, -104.20845			
Project #:	212C-MD-00605.07			
Total Depth	10'			
Date Installed:	9/15/2016			
			L Field Objective	
DEPTH (Ft)	SAMPLE DESCRIPTION	NOTES	Field Chloride (mg/kg)	CONDUCTIVITY (ppm)
0-1'	Caliche & fine brown sand	No stain or odor	-	1,047
2-3'	Caliche	No stain or odor	-	1,159
4-5'	Caliche & fine red to brown sand	No stain or odor	-	1,208
6-7'	Caliche, fine red to brown sand and gypsum	No stain or odor	250	1,510
9-10'	Gypsum	No stain or odor	150	1,470

Appendix D



September 21, 2016

**IKE TAVAREZ** 

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: CLUSTER STATE COM #1H

Enclosed are the results of analyses for samples received by the laboratory on 09/15/16 13:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at <a href="https://www.tceq.texas.gov/field/ga/lab">www.tceq.texas.gov/field/ga/lab</a> accredited certif.html.

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

Method EPA 552.2 Total Haloacetic Acids (HAA-5)
Method EPA 524.2 Total Trihalomethanes (TTHM)
Method EPA 524.4 Regulated VOCs (V1, V2, V3)

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2 Regulated VOCs and Total Trihalomethanes (TTHM)

Method EPA 552.2 Total Haloacetic Acids (HAA-5)

Celey D. Keene

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

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

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



## Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210 Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605 Project Manager: IKE TAVAREZ

Fax To: NONE

Reported: 21-Sep-16 09:19

Sample ID	Laboratory ID		Date Sampled	Date Received	
BH-1 0-1'	H602073-01	Soil	14-Sep-16 00:00	15-Sep-16 13:00	
BH-1 2-3'	H602073-02	Soil	14-Sep-16 00:00	15-Sep-16 13:00	
BH-1 4-5'	H602073-03	Soil	14-Sep-16 00:00	15-Sep-16 13:00	
BH-1 6-7'	H602073-04	Soil	14-Sep-16 00:00	15-Sep-16 13:00	
BH-1 9-10'	H602073-05	Soil	14-Sep-16 00:00	15-Sep-16 13:00	
BH-1 14-15'	H602073-06	Soil	14-Sep-16 00:00	15-Sep-16 13:00	
BH-1 19-20'	H602073-07	Soil	14-Sep-16 00:00	15-Sep-16 13:00	
BH-1 24-25'	H602073-08	Soil	14-Sep-16 00:00	15-Sep-16 13:00	
BH-1 29-30'	H602073-09	Soil	14-Sep-16 00:00	15-Sep-16 13:00	
BH-1 39-40'	H602073-10	Soil	14-Sep-16 00:00	15-Sep-16 13:00	
BH-2 0-1'	H602073-11	Soil	14-Sep-16 00:00	15-Sep-16 13:00	
BH-2 2-3'	H602073-12	Soil	14-Sep-16 00:00	15-Sep-16 13:00	
BH-2 4-5'	H602073-13	Soil	14-Sep-16 00:00	15-Sep-16 13:00	
BH-2 6-7'	H602073-14	Soil	14-Sep-16 00:00	15-Sep-16 13:00	
BH-2 9-10'	H602073-15	Soil	14-Sep-16 00:00	15-Sep-16 13:00	
BH-2 14-15'	H602073-16	Soil	14-Sep-16 00:00	15-Sep-16 13:00	
BH-2 19-20'	H602073-17	Soil	14-Sep-16 00:00	15-Sep-16 13:00	
BH-2 24-25'	H602073-18	Soil	14-Sep-16 00:00	15-Sep-16 13:00	
BH-2 29-30'	H602073-19	Soil	14-Sep-16 00:00	15-Sep-16 13:00	
BH-3 0-1'	H602073-20	Soil	14-Sep-16 00:00	15-Sep-16 13:00	
BH-3 2-3'	H602073-21	Soil	14-Sep-16 00:00	15-Sep-16 13:00	
BH-3 4-5'	H602073-22	Soil	14-Sep-16 00:00	15-Sep-16 13:00	
BH-3 6-7'	H602073-23	Soil	14-Sep-16 00:00	15-Sep-16 13:00	
BH-3 9-10'	H602073-24	Soil	14-Sep-16 00:00	15-Sep-16 13:00	
BH-3 14-15'	H602073-25	Soil	14-Sep-16 00:00	15-Sep-16 13:00	
BH-3 19-20'	H602073-26	Soil	14-Sep-16 00:00	15-Sep-16 13:00	
BH-3 24-25'	H602073-27	Soil	14-Sep-16 00:00	15-Sep-16 13:00	

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Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager



# **Analytical Results For:**

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210				Reported: 21-Sep-16 09:19
BH-3 29-30'	H602073-28	Soil	14-Sep-16 00:00	15-Sep-16 13:00
BH-4 0-1'	H602073-29	Soil	14-Sep-16 00:00	15-Sep-16 13:00
BH-4 2-3'	H602073-30	Soil	14-Sep-16 00:00	15-Sep-16 13:00
BH-4 4-5'	H602073-31	Soil	14-Sep-16 00:00	15-Sep-16 13:00
BH-4 6-7'	H602073-32	Soil	14-Sep-16 00:00	15-Sep-16 13:00
BH-4 9-10'	H602073-33	Soil	14-Sep-16 00:00	15-Sep-16 13:00
BH-4 14-15'	H602073-34	Soil	14-Sep-16 00:00	15-Sep-16 13:00
BH-5 0-1'	H602073-35	Soil	14-Sep-16 00:00	15-Sep-16 13:00
BH-5 2-3'	H602073-36	Soil	14-Sep-16 00:00	15-Sep-16 13:00
BH-5 4-5'	H602073-37	Soil	14-Sep-16 00:00	15-Sep-16 13:00
BH-5 6-7'	H602073-38	Soil	14-Sep-16 00:00	15-Sep-16 13:00
BH-5 9-10'	H602073-39	Soil	14-Sep-16 00:00	15-Sep-16 13:00
BH-5 14-15'	H602073-40	Soil	14-Sep-16 00:00	15-Sep-16 13:00
BH-6 0-1'	H602073-41	Soil	14-Sep-16 00:00	15-Sep-16 13:00
BH-6 2-3'	H602073-42	Soil	14-Sep-16 00:00	15-Sep-16 13:00
BH-6 4-5'	H602073-43	Soil	14-Sep-16 00:00	15-Sep-16 13:00
BH-6 6-7'	H602073-44	Soil	14-Sep-16 00:00	15-Sep-16 13:00
BH-6 9-10'	H602073-45	Soil	14-Sep-16 00:00	15-Sep-16 13:00
BH-6 14-15'	H602073-46	Soil	14-Sep-16 00:00	15-Sep-16 13:00
BH-7 0-1'	H602073-47	Soil	15-Sep-16 00:00	15-Sep-16 13:00
BH-7 2-3'	H602073-48	Soil	15-Sep-16 00:00	15-Sep-16 13:00
BH-7 4-5'	H602073-49	Soil	15-Sep-16 00:00	15-Sep-16 13:00
BH-7 6-7'	H602073-50	Soil	15-Sep-16 00:00	15-Sep-16 13:00
BH-7 9-10'	H602073-51	Soil	15-Sep-16 00:00	15-Sep-16 13:00
BH-8 0-1'	H602073-52	Soil	15-Sep-16 00:00	15-Sep-16 13:00
BH-8 2-3'	H602073-53	Soil	15-Sep-16 00:00	15-Sep-16 13:00
BH-8 4-5'	H602073-54	Soil	15-Sep-16 00:00	15-Sep-16 13:00
BH-8 6-7'	H602073-55	Soil	15-Sep-16 00:00	15-Sep-16 13:00
BH-8 9-10'	H602073-56	Soil	15-Sep-16 00:00	15-Sep-16 13:00
AH-1 0-1'	H602073-57	Soil	15-Sep-16 00:00	15-Sep-16 13:00

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Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager



# **Analytical Results For:**

1. G. BOX 1030		•		Reported: 21-Sep-16 09:19		
AH-1 1-1.5'	H602073-58	Soil	15-Sep-16 00:00	15-Sep-16 13:00		
AH-1 2-2.5'	H602073-59	Soil	15-Sep-16 00:00	15-Sep-16 13:00		
AH-1 3-3.5'	H602073-60	Soil	15-Sep-16 00:00	15-Sep-16 13:00		
AH-1 4-4.5'	H602073-61	Soil	15-Sep-16 00:00	15-Sep-16 13:00		

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Celey D. Keine



# Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210 Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605

Project Manager: IKE TAVAREZ

Fax To: NONE

Reported: 21-Sep-16 09:19

# BH-1 0-1' H602073-01 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes	
Cardinal Laboratories											
<b>Inorganic Compounds</b>	Inorganic Compounds										
Chloride	30800		16.0	mg/kg	4	6091507	AC	16-Sep-16	4500-Cl-B		
Volatile Organic Compounds	by EPA Method	8021									
Benzene*	< 0.050		0.050	mg/kg	50	6091601	MS	16-Sep-16	8021B		
Toluene*	< 0.050		0.050	mg/kg	50	6091601	MS	16-Sep-16	8021B		
Ethylbenzene*	< 0.050		0.050	mg/kg	50	6091601	MS	16-Sep-16	8021B		
Total Xylenes*	< 0.150		0.150	mg/kg	50	6091601	MS	16-Sep-16	8021B		
Total BTEX	< 0.300		0.300	mg/kg	50	6091601	MS	16-Sep-16	8021B		
Surrogate: 4-Bromofluorobenzene (PID	))		98.1 %	73.6	-140	6091601	MS	16-Sep-16	8021B		
Petroleum Hydrocarbons by C	GC FID										
GRO C6-C10	<10.0		10.0	mg/kg	1	6091504	MS	16-Sep-16	8015B		
DRO >C10-C28	<10.0		10.0	mg/kg	1	6091504	MS	16-Sep-16	8015B		
Surrogate: 1-Chlorooctane			35.0 %	35-	147	6091504	MS	16-Sep-16	8015B		
Surrogate: 1-Chlorooctadecane			34.9 %	28	171	6091504	MS	16-Sep-16	8015B		

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Celey D. Keene



# Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210 Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605

Project Manager: IKE TAVAREZ

Reported: 21-Sep-16 09:19

Fax To: NONE

BH-1 2-3' H602073-02 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	17600		16.0	mg/kg	4	6091507	AC	16-Sep-16	4500-Cl-B	

Cardinal Laboratories \*=Accredited Analyte

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Celey D. Keine

21-Sep-16 09:19



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

# Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210 Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605 Project Manager: IKE TAVAREZ

Fax To: NONE

Tax To: NONE

BH-1 4-5' H602073-03 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardinal	Laborato	ries					

 Inorganic Compounds

 Chloride
 2560
 16.0
 mg/kg
 4
 6091507
 AC
 16-Sep-16
 4500-Cl-B

Cardinal Laboratories \*=Accredited Analyte

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Celeg D. Keine

4500-Cl-B

21-Sep-16 09:19



544

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## Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210

Chloride

Project: CLUSTER STATE COM #1H

6091507

AC

16-Sep-16

Project Number: 212C-MO-00605 Project Manager: IKE TAVAREZ

Fax To: NONE

BH-1 6-7' H602073-04 (Soil)

Α	Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Inc	organic Compounds			Cardina	ıl Laborat	ories					

mg/kg

16.0

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Celey D. Keine



80.0

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# Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210

Chloride

Project: CLUSTER STATE COM #1H

6091507

Project Number: 212C-MO-00605 Project Manager: IKE TAVAREZ

Fax To: NONE

Reported: 21-Sep-16 09:19

4500-Cl-B

16-Sep-16

BH-1 9-10' H602073-05 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardina	al Laborat	ories					
<b>Inorganic Compounds</b>										

mg/kg

16.0

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Celey D. Keine

4500-Cl-B

21-Sep-16 09:19



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

## Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210 Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605

Project Manager: IKE TAVAREZ

Fax To: NONE

BH-1 14-15'

H602073-06 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardinal	Laborato	ries					

 Inorganic Compounds
 48.0
 16.0
 mg/kg
 4
 6091507
 AC
 16-Sep-16

Cardinal Laboratories \*=Accredited Analyte

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4500-Cl-B

21-Sep-16 09:19



192

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## Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210

Chloride

Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605

6091605

AC

16-Sep-16

Project Manager: IKE TAVAREZ

Fax To: NONE

BH-1 19-20' H602073-07 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Inorganic Compounds			Cardina	al Laborat	ories					

mg/kg

16.0

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## Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210 Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605

Project Manager: IKE TAVAREZ

Fax To: NONE

BH-1 24-25'

H602073-08 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardin	al Lahorat	ories					

### Cardinal Laboratories

**Inorganic Compounds** 16.0 mg/kg 6091605 AC 16-Sep-16 4500-Cl-B Chloride

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## Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210 Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605

Project Manager: IKE TAVAREZ

Fax To: NONE

BH-1 29-30' H602073-09 (Soil)

Analyte	Result	MDL	Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Note
			Reporting							

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**Inorganic Compounds** 6091605 AC 16-Sep-16 4500-Cl-B Chloride 96.0 16.0 mg/kg

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# Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210

Chloride

Project: CLUSTER STATE COM #1H

6091605

AC

16-Sep-16

Project Number: 212C-MO-00605 Project Manager: IKE TAVAREZ

Fax To: NONE

Reported: 21-Sep-16 09:19

4500-Cl-B

BH-1 39-40' H602073-10 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardina	al Laborat	ories					
Inorganic Compounds										

mg/kg

16.0

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## Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210 Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605

Project Manager: IKE TAVAREZ

Fax To: NONE

BH-2 0-1' H602073-11 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardina	l Laborat	tories					
Inorganic Compounds										
Chloride	24400		16.0	mg/kg	4	6091605	AC	16-Sep-16	4500-Cl-B	
Volatile Organic Compounds b	y EPA Method	8021								
Benzene*	< 0.050		0.050	mg/kg	50	6091601	MS	16-Sep-16	8021B	
Toluene*	< 0.050		0.050	mg/kg	50	6091601	MS	16-Sep-16	8021B	
Ethylbenzene*	< 0.050		0.050	mg/kg	50	6091601	MS	16-Sep-16	8021B	
Total Xylenes*	< 0.150		0.150	mg/kg	50	6091601	MS	16-Sep-16	8021B	
Total BTEX	< 0.300		0.300	mg/kg	50	6091601	MS	16-Sep-16	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			99.8 %	73.6	-140	6091601	MS	16-Sep-16	8021B	
Petroleum Hydrocarbons by G	C FID									
GRO C6-C10	<10.0		10.0	mg/kg	1	6091504	MS	16-Sep-16	8015B	
DRO >C10-C28	<10.0		10.0	mg/kg	1	6091504	MS	16-Sep-16	8015B	
Surrogate: 1-Chlorooctane			89.8 %	35-	147	6091504	MS	16-Sep-16	8015B	
Surrogate: 1-Chlorooctadecane			98.2 %	28-	171	6091504	MS	16-Sep-16	8015B	

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Celey D. Keene, Lab Director/Quality Manager

21-Sep-16 09:19



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## Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210 Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605

Project Manager: IKE TAVAREZ

Fax To: NONE

BH-2 2-3' H602073-12 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardina	l Laborato	ories					

 Inorganic Compounds

 Chloride
 22800
 16.0
 mg/kg
 4
 6091605
 AC
 16-Sep-16
 4500-Cl-B

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8130

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# Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210

Chloride

Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605

6091605

AC

16-Sep-16

Project Manager: IKE TAVAREZ

Fax To: NONE

BH-2 4-5'

H602073-13 (Soil)

	Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories											
	Inorganic Compounds										

mg/kg

16.0

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# Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210 Project: CLUSTER STATE COM #1H

21-Sep-16 09:19 Project Number: 212C-MO-00605

Project Manager: IKE TAVAREZ

Fax To: NONE

BH-2 6-7' H602073-14 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Not
			Cardin	al Lahorai	tories					

### Cardinal Laboratories

**Inorganic Compounds** mg/kg 6091605 AC 16-Sep-16 4500-Cl-B Chloride 2560 16.0

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21-Sep-16 09:19



672

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# Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210

Chloride

Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605

6091605

AC

16-Sep-16

Project Manager: IKE TAVAREZ

Fax To: NONE

BH-2 9-10' H602073-15 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes			
Cardinal Laboratories													
Inorganic Compounds													

mg/kg

16.0

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432

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## Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210

Chloride

Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605

6091605

AC

16-Sep-16

Reported: 21-Sep-16 09:19

4500-Cl-B

Project Manager: IKE TAVAREZ

Fax To: NONE

BH-2 14-15' H602073-16 (Soil)

Cardinal Laboratories	Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes			
Inorganic Compounds														

mg/kg

16.0

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## Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210 Project: CLUSTER STATE COM #1H

Reported: 21-Sep-16 09:19

Project Number: 212C-MO-00605

Project Manager: IKE TAVAREZ

Fax To: NONE

BH-2 19-20' H602073-17 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes			
Cardinal Laboratories													
Inorganic Compounds													
Chloride	320		16.0	mg/kg	4	6091605	AC	16-Sep-16	4500-Cl-B				

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## Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210 Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605

Project Manager: IKE TAVAREZ

Fax To: NONE

Reported: 21-Sep-16 09:19

BH-2 24-25'

H602073-18 (Soil)

	Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes		
	Cardinal Laboratories												
Inorganic Compounds													
(	Chloride	272		16.0	mg/kg	4	6091605	AC	16-Sep-16	4500-Cl-B			

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## Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210

Chloride

Project: CLUSTER STATE COM #1H

6091605

AC

16-Sep-16

Project Number: 212C-MO-00605

Fax To: NONE

Reported: 21-Sep-16 09:19

4500-Cl-B

Project Manager: IKE TAVAREZ

BH-2 29-30' H602073-19 (Soil)

Analyte	R	Result ME	Reporting L Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes		
Cardinal Laboratories Inorganic Compounds												

mg/kg

16.0

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## Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210 Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605 Project Manager: IKE TAVAREZ

Fax To: NONE

Reported: 21-Sep-16 09:19

# BH-3 0-1' H602073-20 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardina	ıl Laborat	tories					
Inorganic Compounds										
Chloride	9060		16.0	mg/kg	4	6091605	AC	16-Sep-16	4500-Cl-B	
Volatile Organic Compounds b	oy EPA Method	8021								
Benzene*	< 0.050		0.050	mg/kg	50	6091601	MS	16-Sep-16	8021B	
Toluene*	< 0.050		0.050	mg/kg	50	6091601	MS	16-Sep-16	8021B	
Ethylbenzene*	< 0.050		0.050	mg/kg	50	6091601	MS	16-Sep-16	8021B	
Total Xylenes*	< 0.150		0.150	mg/kg	50	6091601	MS	16-Sep-16	8021B	
Total BTEX	< 0.300		0.300	mg/kg	50	6091601	MS	16-Sep-16	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			99.9 %	73.6	-140	6091601	MS	16-Sep-16	8021B	_
Petroleum Hydrocarbons by G	C FID									
GRO C6-C10	<10.0		10.0	mg/kg	1	6091901	MS	19-Sep-16	8015B	
DRO >C10-C28	<10.0		10.0	mg/kg	1	6091901	MS	19-Sep-16	8015B	
Surrogate: 1-Chlorooctane			91.9 %	35-	147	6091901	MS	19-Sep-16	8015B	
Surrogate: 1-Chlorooctadecane			109 %	28-	171	6091901	MS	19-Sep-16	8015B	

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7730

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# Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210

Chloride

Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605

6091605

AC

16-Sep-16

Project Manager: IKE TAVAREZ

Fax To: NONE

BH-3 2-3' H602073-21 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes	
Cardinal Laboratories  Inorganic Compounds											

mg/kg

16.0

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# Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210 Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605

Project Manager: IKE TAVAREZ

Fax To: NONE

BH-3 4-5'

H602073-22 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardina	l Laborato	ories					

 Inorganic Compounds

 Chloride
 832
 16.0
 mg/kg
 4
 6091605
 AC
 16-Sep-16
 4500-Cl-B

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## Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210 Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605

Project Manager: IKE TAVAREZ

Fax To: NONE

Reported: 21-Sep-16 09:19

BH-3 6-7' H602073-23 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardina	ıl Laborat	ories					

**Inorganic Compounds** 16.0 6091605 AC 16-Sep-16 4500-Cl-B Chloride mg/kg

Cardinal Laboratories \*=Accredited Analyte

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Celey D. Keene



# Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210 Project: CLUSTER STATE COM #1H
Project Number: 212C-MO-00605

Reported: 21-Sep-16 09:19

Project Manager: IKE TAVAREZ

Fax To: NONE

BH-3 9-10' H602073-24 (Soil)

	Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes		
	Cardinal Laboratories												
<u>I</u>	Inorganic Compounds												
C	Chloride	352		16.0	mg/kg	4	6091605	AC	16-Sep-16	4500-Cl-B			

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## Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210 Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605

Reported: 21-Sep-16 09:19

Project Manager: IKE TAVAREZ

Fax To: NONE

BH-3 14-15' H602073-25 (Soil)

	Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
				Cardin	al Laborat	ories					
<u>Ir</u>	organic Compounds										
C	hloride	528		16.0	mg/kg	4	6091605	AC	16-Sep-16	4500-Cl-B	

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### Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210 Project: CLUSTER STATE COM #1H
Project Number: 212C-MO-00605

COM #1H Reported: 21-Sep-16 09:19

Project Manager: IKE TAVAREZ

Fax To: NONE

BH-3 19-20' H602073-26 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardina	al Laborat	ories					
Inorganic Compounds										
Chloride	624		16.0	mg/kg	4	6091605	AC	16-Sep-16	4500-Cl-B	

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## Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210

Chloride

Project: CLUSTER STATE COM #1H

6091606

AC

16-Sep-16

Project Number: 212C-MO-00605

Project Manager: IKE TAVAREZ

Fax To: NONE

Reported: 21-Sep-16 09:19

4500-Cl-B

BH-3 24-25' H602073-27 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardina	ıl Laborat	ories					
Inorganic Compounds										

mg/kg

16.0

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4500-Cl-B

16-Sep-16

21-Sep-16 09:19



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## Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210

Chloride

Project: CLUSTER STATE COM #1H

6091606

AC

Project Number: 212C-MO-00605

Project Manager: IKE TAVAREZ

Fax To: NONE

BH-3 29-30' H602073-28 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Inorganic Compounds			Cardin	al Laborat	ories					

mg/kg

16.0

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### Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210 Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605

Project Manager: IKE TAVAREZ

Fax To: NONE

BH-4 0-1' H602073-29 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardina	l Laborat	tories					
Inorganic Compounds										
Chloride	13600		16.0	mg/kg	4	6091606	AC	16-Sep-16	4500-Cl-B	
Volatile Organic Compounds b	oy EPA Method	8021								
Benzene*	< 0.050		0.050	mg/kg	50	6091601	MS	16-Sep-16	8021B	
Toluene*	< 0.050		0.050	mg/kg	50	6091601	MS	16-Sep-16	8021B	
Ethylbenzene*	< 0.050		0.050	mg/kg	50	6091601	MS	16-Sep-16	8021B	
Total Xylenes*	< 0.150		0.150	mg/kg	50	6091601	MS	16-Sep-16	8021B	
Total BTEX	< 0.300		0.300	mg/kg	50	6091601	MS	16-Sep-16	8021B	
Surrogate: 4-Bromofluorobenzene (PID)	)		98.0 %	73.6	-140	6091601	MS	16-Sep-16	8021B	
Petroleum Hydrocarbons by G	C FID									
GRO C6-C10	<10.0		10.0	mg/kg	1	6091901	MS	19-Sep-16	8015B	
DRO >C10-C28	<10.0		10.0	mg/kg	1	6091901	MS	19-Sep-16	8015B	
Surrogate: 1-Chlorooctane			85.5 %	35-	147	6091901	MS	19-Sep-16	8015B	
Surrogate: 1-Chlorooctadecane			103 %	28-	171	6091901	MS	19-Sep-16	8015B	

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Celey D. Keene, Lab Director/Quality Manager

4500-Cl-B

16-Sep-16

21-Sep-16 09:19



12000

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## Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210

Chloride

Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605

6091606

AC

Project Manager: IKE TAVAREZ

Fax To: NONE

DII 4 2 21

BH-4 2-3' H602073-30 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardina	al Laborat	ories					
Inorganic Compounds										

mg/kg

16.0

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## Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210 Project: CLUSTER STATE COM #1H

Reported: 21-Sep-16 09:19

Project Number: 212C-MO-00605

Project Manager: IKE TAVAREZ

Fax To: NONE

BH-4 4-5'

H602073-31 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardin	al Laborat	ories					

**Inorganic Compounds** 16.0 6091606 AC 16-Sep-16 4500-Cl-B Chloride 176 mg/kg

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### Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210 Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605

Project Manager: IKE TAVAREZ

Fax To: NONE

BH-4 6-7' H602073-32 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes

#### **Cardinal Laboratories**

 Inorganic Compounds

 Chloride
 160
 16.0
 mg/kg
 4
 6091606
 AC
 16-Sep-16
 4500-Cl-B

Cardinal Laboratories \*=Accredited Analyte

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### Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210

Chloride

Project: CLUSTER STATE COM #1H

6091606

AC

Project Number: 212C-MO-00605

Fax To: NONE

Reported: 21-Sep-16 09:19

4500-Cl-B

16-Sep-16

Project Manager: IKE TAVAREZ

BH-4 9-10' H602073-33 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes		
Cardinal Laboratories												
<b>Inorganic Compounds</b>												

mg/kg

16.0

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### Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210 Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605

Project Manager: IKE TAVAREZ

Fax To: NONE

BH-4 14-15' H602073-34 (Soil)

Analyte Result MDL Reporting Units Dilution Batch Analyst Analyzed Method Notes

**Cardinal Laboratories** 

Inorganic Compounds

**Chloride** 576 16.0 mg/kg 4 6091606 AC 16-Sep-16 4500-Cl-B

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### Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210 Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605

Project Manager: IKE TAVAREZ

Fax To: NONE

Reported: 21-Sep-16 09:19

# BH-5 0-1' H602073-35 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardina	l Laborat	tories					
Inorganic Compounds										
Chloride	48.0		16.0	mg/kg	4	6091606	AC	16-Sep-16	4500-Cl-B	
Volatile Organic Compounds	by EPA Method	8021								
Benzene*	< 0.050		0.050	mg/kg	50	6091601	MS	16-Sep-16	8021B	
Toluene*	< 0.050		0.050	mg/kg	50	6091601	MS	16-Sep-16	8021B	
Ethylbenzene*	< 0.050		0.050	mg/kg	50	6091601	MS	16-Sep-16	8021B	
Total Xylenes*	< 0.150		0.150	mg/kg	50	6091601	MS	16-Sep-16	8021B	
Total BTEX	< 0.300		0.300	mg/kg	50	6091601	MS	16-Sep-16	8021B	
Surrogate: 4-Bromofluorobenzene (PID	))		98.8 %	73.6	-140	6091601	MS	16-Sep-16	8021B	
Petroleum Hydrocarbons by C	GC FID									
GRO C6-C10	<10.0		10.0	mg/kg	1	6091901	MS	19-Sep-16	8015B	
DRO >C10-C28	<10.0		10.0	mg/kg	1	6091901	MS	19-Sep-16	8015B	
Surrogate: 1-Chlorooctane			89.1 %	35-	147	6091901	MS	19-Sep-16	8015B	
Surrogate: 1-Chlorooctadecane			106 %	28-	171	6091901	MS	19-Sep-16	8015B	

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## Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210 Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605 Project Manager: IKE TAVAREZ

Fax To: NONE

Reported: 21-Sep-16 09:19

BH-5 2-3' H602073-36 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardina	l Laborato	ories					

**Inorganic Compounds** 16.0 6091606 AC 16-Sep-16 4500-Cl-B Chloride 288 mg/kg

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### Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210 Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605

Project Manager: IKE TAVAREZ

Fax To: NONE

BH-5 4-5'

H602073-37 (Soil)

Analyte Result MDL Reporting Units Dilution Batch Analyst Analyzed Method Notes

**Cardinal Laboratories** 

**Inorganic Compounds** 

**Chloride** 48.0 16.0 mg/kg 4 6091606 AC 16-Sep-16 4500-Cl-B

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## Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210

Chloride

Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605

6091606

AC

Project Manager: IKE TAVAREZ

Reported: 21-Sep-16 09:19

4500-Cl-B

16-Sep-16

Fax To: NONE

BH-5 6-7' H602073-38 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Inorganic Compounds			Cardin	al Laborat	ories					

mg/kg

16.0

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## Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210 Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605

Project Manager: IKE TAVAREZ

Fax To: NONE

BH-5 9-10' H602073-39 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardin	al Laborat	tories					

 Inorganic Compounds

 Chloride
 96.0
 16.0
 mg/kg
 4
 6091606
 AC
 16-Sep-16
 4500-Cl-B

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48.0

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### Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210

Chloride

Project: CLUSTER STATE COM #1H

6091606

AC

16-Sep-16

Project Number: 212C-MO-00605 Project Manager: IKE TAVAREZ

Fax To: NONE

Reported: 21-Sep-16 09:19

4500-Cl-B

BH-5 14-15' H602073-40 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardina	al Laborat	ories					
Inorganic Compounds										

mg/kg

16.0

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## Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210 Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605

Project Manager: IKE TAVAREZ

Fax To: NONE

BH-6 0-1' H602073-41 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardina	l Laborat	ories					
Inorganic Compounds										
Chloride	<16.0		16.0	mg/kg	4	6091606	AC	16-Sep-16	4500-Cl-B	
Volatile Organic Compounds by	EPA Method	8021								
Benzene*	< 0.050		0.050	mg/kg	50	6091601	MS	16-Sep-16	8021B	
Toluene*	< 0.050		0.050	mg/kg	50	6091601	MS	16-Sep-16	8021B	
Ethylbenzene*	< 0.050		0.050	mg/kg	50	6091601	MS	16-Sep-16	8021B	
Total Xylenes*	< 0.150		0.150	mg/kg	50	6091601	MS	16-Sep-16	8021B	
Total BTEX	< 0.300		0.300	mg/kg	50	6091601	MS	16-Sep-16	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			98.3 %	73.6	-140	6091601	MS	16-Sep-16	8021B	
Petroleum Hydrocarbons by GC	FID									
GRO C6-C10	<10.0		10.0	mg/kg	1	6091901	MS	19-Sep-16	8015B	
DRO >C10-C28	<10.0		10.0	mg/kg	1	6091901	MS	19-Sep-16	8015B	
Surrogate: 1-Chlorooctane			80.3 %	35-	147	6091901	MS	19-Sep-16	8015B	
Surrogate: 1-Chlorooctadecane			88.3 %	28-	171	6091901	MS	19-Sep-16	8015B	

Cardinal Laboratories \*=Accredited Analyte

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21-Sep-16 09:19



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## Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210

**Inorganic Compounds** 

Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605

Project Manager: IKE TAVAREZ

Fax To: NONE

BH-6 2-3' H602073-42 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardinal	Laborato	ries					

 Chloride
 48.0
 16.0
 mg/kg
 4
 6091606
 AC
 16-Sep-16
 4500-Cl-B

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## Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210 Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605

Project Manager: IKE TAVAREZ

Fax To: NONE

BH-6 4-5' H602073-43 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardina	l Laborat	ories					

 Inorganic Compounds
 48.0
 16.0
 mg/kg
 4
 6091606
 AC
 16-Sep-16
 4500-Cl-B

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4500-Cl-B

21-Sep-16 09:19



<16.0

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### Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210

Chloride

Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605

6091606

AC

16-Sep-16

Project Manager: IKE TAVAREZ

Fax To: NONE

BH-6 6-7' H602073-44 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardin	al Labora	tories					
Inorganic Compounds										

mg/kg

16.0

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### Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210 Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605 Project Manager: IKE TAVAREZ

Fax To: NONE

Reported: 21-Sep-16 09:19

BH-6 9-10' H602073-45 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardina	ıl Laborat	ories					
Inorganic Compounds										
Chloride	<16.0		16.0	mg/kg	4	6091606	AC	16-Sep-16	4500-Cl-B	

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## Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210 Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605

Project Manager: IKE TAVAREZ

Fax To: NONE

BH-6 14-15'

H602073-46 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardinal	Laborato	ries					

 Inorganic Compounds

 Chloride
 48.0
 16.0
 mg/kg
 4
 6091606
 AC
 16-Sep-16
 4500-Cl-B

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### Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210 Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605

Project Manager: IKE TAVAREZ

Fax To: NONE

BH-7 0-1' H602073-47 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardina	l Laborat	tories					
Inorganic Compounds										
Chloride	64.0		16.0	mg/kg	4	6091607	AC	16-Sep-16	4500-Cl-B	
Volatile Organic Compounds	by EPA Method	8021								
Benzene*	< 0.050		0.050	mg/kg	50	6091906	MS	20-Sep-16	8021B	
Toluene*	< 0.050		0.050	mg/kg	50	6091906	MS	20-Sep-16	8021B	
Ethylbenzene*	< 0.050		0.050	mg/kg	50	6091906	MS	20-Sep-16	8021B	
Total Xylenes*	< 0.150		0.150	mg/kg	50	6091906	MS	20-Sep-16	8021B	
Total BTEX	< 0.300		0.300	mg/kg	50	6091906	MS	20-Sep-16	8021B	
Surrogate: 4-Bromofluorobenzene (PIL	D)		99.4 %	73.6	-140	6091906	MS	20-Sep-16	8021B	
Petroleum Hydrocarbons by	GC FID									
GRO C6-C10	<10.0		10.0	mg/kg	1	6091901	MS	19-Sep-16	8015B	
DRO >C10-C28	<10.0		10.0	mg/kg	1	6091901	MS	19-Sep-16	8015B	
Surrogate: 1-Chlorooctane			93.4 %	35-	147	6091901	MS	19-Sep-16	8015B	
Surrogate: 1-Chlorooctadecane			113 %	28-	171	6091901	MS	19-Sep-16	8015B	

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64.0

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## Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210

Chloride

Project: CLUSTER STATE COM #1H

6091607

AC

Project Number: 212C-MO-00605 Project Manager: IKE TAVAREZ

Reported: 21-Sep-16 09:19

4500-Cl-B

16-Sep-16

Fax To: NONE

BH-7 2-3' H602073-48 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Inorganic Compounds			Cardin	al Laborat	ories					

mg/kg

16.0

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## Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210 Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605

Project Manager: IKE TAVAREZ

Fax To: NONE

BH-7 4-5'

H602073-49 (Soil)

	Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes		
	Cardinal Laboratories												
<u>I</u>	norganic Compounds												
(	Chloride	32.0		16.0	mg/kg	4	6091607	AC	16-Sep-16	4500-Cl-B			

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### Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210 Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605

Project Manager: IKE TAVAREZ

Fax To: NONE

BH-7 6-7' H602073-50 (Soil)

Analyte Result MDL Reporting Units Dilution Batch Analyst Analyzed Method Notes

Cardinal Laboratories

 Inorganic Compounds

 Chloride
 32.0
 16.0
 mg/kg
 4
 6091607
 AC
 16-Sep-16
 4500-Cl-B

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### Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210 Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605

Project Manager: IKE TAVAREZ

Fax To: NONE

21-Sep-16 09:19

Reported:

BH-7 9-10' H602073-51 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardin	al Laborat	ories					

 Inorganic Compounds

 Chloride
 48.0
 16.0
 mg/kg
 4
 6091607
 AC
 16-Sep-16
 4500-Cl-B

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## Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210 Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605 Project Manager: IKE TAVAREZ

Fax To: NONE

Reported: 21-Sep-16 09:19

BH-8 0-1' H602073-52 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardina	l Laborat	ories					
Inorganic Compounds										
Chloride	<16.0		16.0	mg/kg	4	6091607	AC	16-Sep-16	4500-Cl-B	
Volatile Organic Compounds I	by EPA Method	8021								
Benzene*	< 0.050		0.050	mg/kg	50	6091906	MS	20-Sep-16	8021B	
Toluene*	< 0.050		0.050	mg/kg	50	6091906	MS	20-Sep-16	8021B	
Ethylbenzene*	< 0.050		0.050	mg/kg	50	6091906	MS	20-Sep-16	8021B	
Total Xylenes*	< 0.150		0.150	mg/kg	50	6091906	MS	20-Sep-16	8021B	
Total BTEX	< 0.300		0.300	mg/kg	50	6091906	MS	20-Sep-16	8021B	
Surrogate: 4-Bromofluorobenzene (PID)	)		99.6 %	73.6	-140	6091906	MS	20-Sep-16	8021B	
Petroleum Hydrocarbons by C	GC FID									
GRO C6-C10	<10.0		10.0	mg/kg	1	6091901	MS	19-Sep-16	8015B	
DRO >C10-C28	23.8		10.0	mg/kg	1	6091901	MS	19-Sep-16	8015B	
Surrogate: 1-Chlorooctane			78.1 %	35-	147	6091901	MS	19-Sep-16	8015B	
Surrogate: 1-Chlorooctadecane			89.4 %	28-	171	6091901	MS	19-Sep-16	8015B	

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Celey D. Keene, Lab Director/Quality Manager

4500-Cl-B

21-Sep-16 09:19



<16.0

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## Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210

**Inorganic Compounds** 

Chloride

Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605

6091607

AC

16-Sep-16

Project Manager: IKE TAVAREZ

Fax To: NONE

BH-8 2-3' H602073-53 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardin	al Laborat	tories					

mg/kg

16.0

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### Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210 Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605 Project Manager: IKE TAVAREZ Reported: 21-Sep-16 09:19

Fax To: NONE

BH-8 4-5' H602073-54 (Soil)

	Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories											
Inorganic Compounds											
	Chloride	32.0		16.0	mg/kg	4	6091607	AC	16-Sep-16	4500-Cl-B	

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## Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210 Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605 Project Manager: IKE TAVAREZ

Fax To: NONE

21-Sep-16 09:19

Reported:

BH-8 6-7' H602073-55 (Soil)

Analyte	Result	MDL Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes		
	Cardinal Laboratories										
Inorganic Compound	ls										
Chloride	176	16.0	mg/kg	4	6091607	AC	16-Sep-16	4500-Cl-B			

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## Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210 Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605

Reported: 21-Sep-16 09:19

Project Manager: IKE TAVAREZ

Fax To: NONE

BH-8 9-10' H602073-56 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardinal	Laborato	ries					

**Inorganic Compounds** 16.0 6091607 AC 16-Sep-16 4500-Cl-B Chloride 80.0 mg/kg

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### Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210 Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605 Project Manager: IKE TAVAREZ

Fax To: NONE

Reported: 21-Sep-16 09:19

# AH-1 0-1' H602073-57 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardina	l Laborat	ories					
Inorganic Compounds										
Chloride	928		16.0	mg/kg	4	6091607	AC	16-Sep-16	4500-Cl-B	
Volatile Organic Compounds	by EPA Method	8021								
Benzene*	< 0.050		0.050	mg/kg	50	6091906	MS	20-Sep-16	8021B	
Toluene*	< 0.050		0.050	mg/kg	50	6091906	MS	20-Sep-16	8021B	
Ethylbenzene*	< 0.050		0.050	mg/kg	50	6091906	MS	20-Sep-16	8021B	
Total Xylenes*	< 0.150		0.150	mg/kg	50	6091906	MS	20-Sep-16	8021B	
Total BTEX	< 0.300		0.300	mg/kg	50	6091906	MS	20-Sep-16	8021B	
Surrogate: 4-Bromofluorobenzene (PIL	))		99.5 %	73.6	-140	6091906	MS	20-Sep-16	8021B	
Petroleum Hydrocarbons by	GC FID									
GRO C6-C10	<10.0		10.0	mg/kg	1	6091901	MS	19-Sep-16	8015B	
DRO >C10-C28	<10.0		10.0	mg/kg	1	6091901	MS	19-Sep-16	8015B	
Surrogate: 1-Chlorooctane			88.2 %	35-	147	6091901	MS	19-Sep-16	8015B	
Surrogate: 1-Chlorooctadecane			103 %	28-	171	6091901	MS	19-Sep-16	8015B	

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11600

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### Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210

Chloride

Project: CLUSTER STATE COM #1H

6091607

AC

Project Number: 212C-MO-00605

Fax To: NONE

Reported: 21-Sep-16 09:19

4500-Cl-B

16-Sep-16

Project Manager: IKE TAVAREZ

AH-1 1-1.5' H602073-58 (Soil)

	Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories											
	Inorganic Compounds										

mg/kg

16.0

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4500-Cl-B

21-Sep-16 09:19



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### Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210 Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605

Project Manager: IKE TAVAREZ

Fax To: NONE

AH-1 2-2.5'

H602073-59 (Soil)

	Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories											

 Inorganic Compounds
 12000
 16.0
 mg/kg
 4
 6091607
 AC
 16-Sep-16

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21-Sep-16 09:19



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### Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210 Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605

Project Manager: IKE TAVAREZ

Fax To: NONE

AH-1 3-3.5' H602073-60 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										

 Inorganic Compounds

 Chloride
 15200
 16.0
 mg/kg
 4
 6091607
 AC
 16-Sep-16
 4500-Cl-B

Cardinal Laboratories \*=Accredited Analyte

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#### Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210

Chloride

Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605

6091607

AC

16-Sep-16

Fax To: NONE

Reported: 21-Sep-16 09:19

4500-Cl-B

Project Manager: IKE TAVAREZ

AH-1 4-4.5' H602073-61 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardin	al Laborat	ories					
Inorganic Compounds										

mg/kg

16.0

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#### Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210 Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605 Project Manager: IKE TAVAREZ

Fax To: NONE

Reported: 21-Sep-16 09:19

#### **Inorganic Compounds - Quality Control**

#### **Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6091507 - 1:4 DI Water										
Blank (6091507-BLK1)				Prepared &	: Analyzed:	15-Sep-16				
Chloride	ND	16.0	mg/kg							
LCS (6091507-BS1)				Prepared &	: Analyzed:	15-Sep-16				
Chloride	432	16.0	mg/kg	400		108	80-120			
LCS Dup (6091507-BSD1)				Prepared &	: Analyzed:	15-Sep-16				
Chloride	432	16.0	mg/kg	400		108	80-120	0.00	20	
<b>Duplicate (6091507-DUP1)</b>	Source	e: H602070-	-04	Prepared &	: Analyzed:	15-Sep-16				
Chloride	352	16.0	mg/kg		352			0.00	20	
Matrix Spike (6091507-MS1)	Source	e: H602070-	-04	Prepared &	: Analyzed:	15-Sep-16				
Chloride	800	16.0	mg/kg	400	352	112	80-120			
Batch 6091605 - 1:4 DI Water										
Blank (6091605-BLK1)				Prepared &	: Analyzed:	16-Sep-16				
Chloride	ND	16.0	mg/kg							
LCS (6091605-BS1)				Prepared &	: Analyzed:	16-Sep-16				
Chloride	432	16.0	mg/kg	400		108	80-120			
LCS Dup (6091605-BSD1)				Prepared &	Analyzed:	16-Sep-16				
Chloride	432	16.0	mg/kg	400		108	80-120	0.00	20	
<b>Duplicate (6091605-DUP1)</b>	Source	е: Н602073-	-07	Prepared &	Analyzed:	16-Sep-16				
Chloride										

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#### Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210 Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605
Project Manager: IKE TAVAREZ

Fax To: NONE

Reported: 21-Sep-16 09:19

#### **Inorganic Compounds - Quality Control**

#### **Cardinal Laboratories**

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 6091605 - 1:4 DI Water										
Matrix Spike (6091605-MS1)	Sour	ce: H602073	-07	Prepared &	Analyzed:	16-Sep-16				
Chloride	624	16.0	mg/kg	400	192	108	80-120			
Batch 6091606 - 1:4 DI Water										
Blank (6091606-BLK1)				Prepared &	Analyzed:	16-Sep-16				
Chloride	ND	16.0	mg/kg							
LCS (6091606-BS1)				Prepared &	Analyzed:	16-Sep-16				
Chloride	432	16.0	mg/kg	400		108	80-120			
LCS Dup (6091606-BSD1)				Prepared &	Analyzed:	16-Sep-16				
Chloride	432	16.0	mg/kg	400		108	80-120	0.00	20	
Duplicate (6091606-DUP1)	Sour	се: Н602073-	-28	Prepared &	Analyzed:	16-Sep-16				
Chloride	144	16.0	mg/kg		128			11.8	20	
Matrix Spike (6091606-MS1)	Sour	ce: H602073	-28	Prepared &	Analyzed:	16-Sep-16				
Chloride	576	16.0	mg/kg	400	128	112	80-120			
Batch 6091607 - 1:4 DI Water										
Blank (6091607-BLK1)				Prepared &	Analyzed:	16-Sep-16				
Chloride	ND	16.0	mg/kg							
LCS (6091607-BS1)				Prepared &	Analyzed:	16-Sep-16				
Chloride	416	16.0	mg/kg	400		104	80-120			

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#### Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210 Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605

Spike

Source

Project Manager: IKE TAVAREZ

Reported: 21-Sep-16 09:19

RPD

Fax To: NONE

#### **Inorganic Compounds - Quality Control**

#### **Cardinal Laboratories**

Reporting

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 6091607 - 1:4 DI Water										
LCS Dup (6091607-BSD1)				Prepared &	Analyzed:	16-Sep-16				
Chloride	416	16.0	mg/kg	400		104	80-120	0.00	20	
Duplicate (6091607-DUP1)	Source	е: Н602073-	48	Prepared &	Analyzed:	16-Sep-16				
Chloride	64.0	16.0	mg/kg		64.0			0.00	20	
Matrix Spike (6091607-MS1)	Source	е: Н602073-	48	Prepared &	Analyzed:	16-Sep-16				
Chloride	480	16.0	mg/kg	400	64.0	104	80-120			

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#### Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210 Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605 Project Manager: IKE TAVAREZ

Fax To: NONE

Reported: 21-Sep-16 09:19

#### Volatile Organic Compounds by EPA Method 8021 - Quality Control

#### **Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6091601 - Volatiles						, , , , , ,				
Blank (6091601-BLK1)				Prepared &	Analyzed:	16-Sep-16	<u> </u>			
Benzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Total Xylenes	ND	0.150	mg/kg							
Total BTEX	ND	0.300	mg/kg							
Surrogate: 4-Bromofluorobenzene (PID)	ND		mg/kg	0.0500		98.6	73.6-140			
LCS (6091601-BS1)				Prepared &	Analyzed:	16-Sep-16	5			
Benzene	2.17	0.050	mg/kg	2.00		109	82.6-122			
Toluene	2.22	0.050	mg/kg	2.00		111	72.9-122			
Ethylbenzene	2.13	0.050	mg/kg	2.00		106	65.4-131			
Total Xylenes	6.39	0.150	mg/kg	6.00		107	73.8-125			
Surrogate: 4-Bromofluorobenzene (PID)	0.0495		mg/kg	0.0500		99.1	73.6-140			
LCS Dup (6091601-BSD1)				Prepared &	Analyzed:	16-Sep-16	5			
Benzene	2.21	0.050	mg/kg	2.00		110	82.6-122	1.46	8.23	
Toluene	2.25	0.050	mg/kg	2.00		112	72.9-122	1.09	8.71	
Ethylbenzene	2.15	0.050	mg/kg	2.00		107	65.4-131	1.02	9.46	
Total Xylenes	6.45	0.150	mg/kg	6.00		107	73.8-125	0.838	8.66	
Surrogate: 4-Bromofluorobenzene (PID)	0.0488		mg/kg	0.0500		97.6	73.6-140			
Matrix Spike (6091601-MS1)	Sou	rce: H602075	-01	Prepared &	: Analyzed:	16-Sep-16	5			
Benzene	2.05	0.050	mg/kg	2.00	0.006	102	66.7-126			
Toluene	2.11	0.050	mg/kg	2.00	0.037	103	58.1-125			
Ethylbenzene	2.04	0.050	mg/kg	2.00	0.041	99.7	45.6-142			
Total Xylenes	6.09	0.150	mg/kg	6.00	0.022	101	52-138			
Surrogate: 4-Bromofluorobenzene (PID)	0.0502		mg/kg	0.0500		100	73.6-140			

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Celey D. Keene, Lab Director/Quality Manager



%REC

#### Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210 Project: CLUSTER STATE COM #1H
Project Number: 212C-MO-00605

Spike

Source

Project Manager: IKE TAVAREZ

Fax To: NONE

Reported: 21-Sep-16 09:19

RPD

#### Volatile Organic Compounds by EPA Method 8021 - Quality Control

#### **Cardinal Laboratories**

Reporting

		Reporting		Spike	Source		/OICEC		KI D	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 6091601 - Volatiles										
Matrix Spike Dup (6091601-MSD1)	Sour	ce: H602075	-01	Prepared &	: Analyzed:	16-Sep-16	i			
Benzene	2.06	0.050	mg/kg	2.00	0.006	103	66.7-126	0.594	12.2	
Toluene	2.12	0.050	mg/kg	2.00	0.037	104	58.1-125	0.694	18.1	
Ethylbenzene	2.05	0.050	mg/kg	2.00	0.041	100	45.6-142	0.687	33.4	
Total Xylenes	6.12	0.150	mg/kg	6.00	0.022	102	52-138	0.604	36.2	
Surrogate: 4-Bromofluorobenzene (PID)	0.0493		mg/kg	0.0500		98.6	73.6-140			
Batch 6091906 - Volatiles										
Blank (6091906-BLK1)				Prepared: 1	9-Sep-16 A	Analyzed: 2	0-Sep-16			
Benzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Total Xylenes	ND	0.150	mg/kg							
Total BTEX	ND	0.300	mg/kg							
Surrogate: 4-Bromofluorobenzene (PID)	ND		mg/kg	0.0500		99.7	73.6-140			
LCS (6091906-BS1)				Prepared: 1	9-Sep-16 A	Analyzed: 2	0-Sep-16			
Benzene	1.95	0.050	mg/kg	2.00		97.5	82.6-122			
Toluene	1.98	0.050	mg/kg	2.00		99.1	72.9-122			
Ethylbenzene	1.89	0.050	mg/kg	2.00		94.6	65.4-131			
Total Xylenes	5.67	0.150	mg/kg	6.00		94.6	73.8-125			
Surrogate: 4-Bromofluorobenzene (PID)	0.0497		mg/kg	0.0500		99.4	73.6-140			
LCS Dup (6091906-BSD1)				Prepared: 1	9-Sep-16 A	Analyzed: 2	0-Sep-16			
Benzene	2.05	0.050	mg/kg	2.00		102	82.6-122	4.78	8.23	
Toluene	2.08	0.050	mg/kg	2.00		104	72.9-122	5.01	8.71	
Ethylbenzene	1.99	0.050	mg/kg	2.00		99.6	65.4-131	5.15	9.46	

#### Cardinal Laboratories

Surrogate: 4-Bromofluorobenzene (PID)

Total Xylenes

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mg/kg

mg/kg

6.00

0.0500

99.4

98.6

73.8-125

73.6-140

5.01

8.66

5.97

0.0493

0.150

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

Reported:

21-Sep-16 09:19



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#### Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210 Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605

Project Manager: IKE TAVAREZ

Fax To: NONE

Volatile Organic Compounds by EPA Method 8021 - Quality Control

#### **Cardinal Laboratories**

		Reporting	** *	Spike	Source	a/ppg	%REC	222	RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 6091906 - Volatiles										
Matrix Spike (6091906-MS1)	Sour	ce: H602073	-47	Prepared: 1	9-Sep-16 A	Analyzed: 2	0-Sep-16			
Benzene	2.18	0.050	mg/kg	2.00	ND	109	66.7-126			
Toluene	2.21	0.050	mg/kg	2.00	0.010	110	58.1-125			
Ethylbenzene	2.13	0.050	mg/kg	2.00	0.012	106	45.6-142			
Total Xylenes	6.45	0.150	mg/kg	6.00	0.017	107	52-138			
Surrogate: 4-Bromofluorobenzene (PID)	0.0504		mg/kg	0.0500		101	73.6-140			
Matrix Spike Dup (6091906-MSD1)	Sour	ce: H602073	-47	Prepared: 1	9-Sep-16 A	analyzed: 2	0-Sep-16			
Benzene	2.17	0.050	mg/kg	2.00	ND	109	66.7-126	0.0729	12.2	
Toluene	2.21	0.050	mg/kg	2.00	0.010	110	58.1-125	0.187	18.1	
Ethylbenzene	2.13	0.050	mg/kg	2.00	0.012	106	45.6-142	0.272	33.4	
Total Xylenes	6.45	0.150	mg/kg	6.00	0.017	107	52-138	0.0453	36.2	
Surrogate: 4-Bromofluorobenzene (PID)	0.0507		mg/kg	0.0500		101	73.6-140			

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%REC

Limits

RPD

#### Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210

Analyte

GRO C6-C10

DRO >C10-C28

Total TPH C6-C28

Surrogate: 1-Chlorooctane

Surrogate: 1-Chlorooctadecane

Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605
Project Manager: IKE TAVAREZ

Fax To: NONE

Reported: 21-Sep-16 09:19

RPD

Limit

Notes

# Petroleum Hydrocarbons by GC FID - Quality Control

Spike

Level

Source

Result

%REC

#### **Cardinal Laboratories**

Units

Reporting

Limit

Result

170

4540

4710

49.0

95.1

50.0

50.0

50.0

mg/kg

mg/kg

mg/kg

mg/kg

mg/kg

200

200

400

50.0

50.0

25.0

4710

4730

72.3

NR

NR

98.0

190

66 4-123

67.6-126

60.8-134

35-147

28-171

Matrix Spike (6091504-MS1)	Source	е: Н602055-	-04	Prepared: 15-Sep	-16 Analyzed: 1	6-Sep-16			
Surrogate: 1-Chlorooctadecane	57.0		mg/kg	50.0	114	28-171			
Surrogate: 1-Chlorooctane	55.9		mg/kg	50.0	112	35-147			
Total TPH C6-C28	399	10.0	mg/kg	400	99.8	79.8-117	6.64	10.7	
DRO >C10-C28	207	10.0	mg/kg	200	104	78.3-122	7.89	13.2	
GRO C6-C10	192	10.0	mg/kg	200	96.0	76.7-115	5.31	9.42	
LCS Dup (6091504-BSD1)				Prepared: 15-Sep	-16 Analyzed: 1	6-Sep-16			
Surrogate: 1-Chlorooctadecane	53.3		mg/kg	50.0	107	28-171			
Surrogate: 1-Chlorooctane	52.8		mg/kg	50.0	106	35-147			
Total TPH C6-C28	374	10.0	mg/kg	400	93.4	79.8-117			
DRO >C10-C28	192	10.0	mg/kg	200	95.8	78.3-122			
GRO C6-C10	182	10.0	mg/kg	200	91.0	76.7-115			
LCS (6091504-BS1)				Prepared: 15-Sep	-16 Analyzed: 1	6-Sep-16			
Surrogate: 1-Chlorooctadecane	54.2		mg/kg	50.0	108	28-171			
Surrogate: 1-Chlorooctane	48.3		mg/kg	50.0	96.7	35-147			
Total TPH C6-C28	ND	10.0	mg/kg						
EXT DRO >C28-C35	ND	10.0	mg/kg						
DRO >C10-C28	ND	10.0	mg/kg						
GRO C6-C10	ND	10.0	mg/kg						
Blank (6091504-BLK1)				Prepared: 15-Sep	-16 Analyzed: 1	6-Sep-16			

Cardinal Laboratories \*=Accredited Analyte

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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

QM-07

QM-07

S-06



%REC

Limits

67.6-126

60.8-134

RPD

NR

NR

#### Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210

Analyte

DRO >C10-C28

Total TPH C6-C28

Total TPH C6-C28

Surrogate: 1-Chlorooctane

Surrogate: 1-Chlorooctadecane

Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605 Project Manager: IKE TAVAREZ

Spike

Level

200

400

Source

Result

4710

4730

%REC

25.1

38.1

106

103

114

79.8-117

35-147

28-171

2.61

10.7

Fax To: NONE

Reported: 21-Sep-16 09:19

RPD

Limit

11.6

9.02

Notes

QM-07

QM-07,

#### Petroleum Hydrocarbons by GC FID - Quality Control

#### **Cardinal Laboratories**

Units

Reporting

Limit

50.0

50.0

Result

4760

4890

424

51.7

56.9

Batch 6091504 - General Prep - Organics										
Matrix Spike Dup (6091504-MSD1)	Sourc	е: Н602055	-04	Prepared: 1	15-Sep-16 A	analyzed:	16-Sep-16			
GRO C6-C10	127	50.0	mg/kg	200	25.0	51.1	66.4-123	34.3	10.2	QM-07, QR-03

mg/kg

mg/kg

QR-03 Surrogate: 1-Chlorooctane 50.9 102 35-147 mg/kg 50.0 Surrogate: 1-Chlorooctadecane 94.4 mg/kg 50.0 189 28-171 S-06

Batch 6091901 - General Prep - Orga	nics								
Blank (6091901-BLK1)				Prepared & Ana	lyzed: 19-Sep-16				
GRO C6-C10	ND	10.0	mg/kg						
DRO >C10-C28	ND	10.0	mg/kg						
EXT DRO >C28-C35	ND	10.0	mg/kg						
Total TPH C6-C28	ND	10.0	mg/kg						
Surrogate: 1-Chlorooctane	49.0		mg/kg	50.0	98.0	35-147			
Surrogate: 1-Chlorooctadecane	53.2		mg/kg	50.0	106	28-171			
LCS (6091901-BS1)				Prepared & Ana	lyzed: 19-Sep-16				
GRO C6-C10	202	10.0	mg/kg	200	101	76.7-115			
DRO >C10-C28	211	10.0	mg/kg	200	106	78.3-122			
Total TPH C6-C28	413	10.0	mg/kg	400	103	79.8-117			
Surrogate: 1-Chlorooctane	50.9		mg/kg	50.0	102	35-147			
Surrogate: 1-Chlorooctadecane	55.3		mg/kg	50.0	111	28-171			
LCS Dup (6091901-BSD1)				Prepared & Ana	lyzed: 19-Sep-16				
GRO C6-C10	208	10.0	mg/kg	200	104	76.7-115	2.97	9.42	
DRO >C10-C28	216	10.0	mg/kg	200	108	78.3-122	2.27	13.2	

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mg/kg

mg/kg

mg/kg

400

50.0

50.0

10.0

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Celey D. Keens

Celey D. Keene, Lab Director/Quality Manager



%REC

Limits

RPD

#### Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210

Analyte

Project: CLUSTER STATE COM #1H

Project Number: 212C-MO-00605

Spike

Level

Source

Result

%REC

Project Manager: IKE TAVAREZ

Fax To: NONE

Reported: 21-Sep-16 09:19

RPD

Limit

Notes

#### Petroleum Hydrocarbons by GC FID - Quality Control

#### **Cardinal Laboratories**

Units

Reporting

Limit

Result

Matrix Spike (6091901-MS1)	Source	e: H602073	-20	Prepared &	Analyzed:	19-Sep-16	5			
GRO C6-C10	173	10.0	mg/kg	200	ND	86.4	66.4-123			
DRO >C10-C28	188	10.0	mg/kg	200	3.73	92.4	67.6-126			
Total TPH C6-C28	361	10.0	mg/kg	400	5.32	89.0	60.8-134			
Surrogate: 1-Chlorooctane	47.1		mg/kg	50.0		94.2	35-147			
Surrogate: 1-Chlorooctadecane	52.4		mg/kg	50.0		105	28-171			
Matrix Spike Dup (6091901-MSD1)	Source	е: Н602073	-20	Prepared &	Analyzed:	19-Sep-16	5			
GPO C6 C10	162	10.0	ma/ka	200	ND	91.0	66 4 122	6.41	10.2	

Matrix Spike Dup (6091901-MSD1)	Source	e: H602073	-20	Prepared &	ά Analyzed:	19-Sep-16	5		
GRO C6-C10	162	10.0	mg/kg	200	ND	81.0	66.4-123	6.41	10.2
DRO >C10-C28	173	10.0	mg/kg	200	3.73	84.5	67.6-126	8.82	11.6
Total TPH C6-C28	335	10.0	mg/kg	400	5.32	82.4	60.8-134	7.69	9.02
Surrogate: 1-Chlorooctane	43.2		mg/kg	50.0		86.5	35-147		
Surrogate: 1-Chlorooctadecane	47.8		mg/kg	50.0		95.5	28-171		

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Celey D. Keene



#### **Notes and Definitions**

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
QR-03	The RPD value for the sample duplicate or MS/MSD was outside if QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.

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

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Celey D. Keene

ONDITION WHEN RECEIVED:  10 NO 14  Please fill out all copies - Laboratory retains Yellow	ADDRESS:  ADDRESS:  CITY:  STATE:  PHONE:  PHONE:	ure) Date:		REPURCISHED BY, January 1000	T + T	9 29	8 1 1 1 24	7   19	6 1 24	5	4	3	2       2	1 9/14 5 XBH-1 0	MATRIX COMP. GRAB	15.00	CLIENT NAME: COG SITE MANAGER:	073	Midland, Texas 79705	TETRA		Analysis Request of Chain
OLDEN SCINDUS IC TPH A  1 total BIEX exceeds  - Return Orginal copy to Tetra Tech - Project	RECEIVED BY: (Signature)  DATE: TIME:	RECEIVED BY: (Signature)  Time:		WED BY (Signatury) WAS WAS A SIGNATURE OF THE SIGNATURE O	-40 // Ob-	29-30	24-25	19-20 K	1478 1478	9-10 K	6-7 X	7	2-3	)-1     X	FICATION	CONTA	xalez_	(+52) 002-4539 • FdX (452) 002-3840	Spring St. xas 79705	TECH		ain of Custody Record
Keeds 100 mg/rg, Benzen exceeds	Juanne Flatch  Rush Charges  Authorized:  Yes	CT PERSON:	SAMPLE SHIPPED BY: (Circle)  FEDEX  BUS  LAND DELIVERED  LAND DELIVERED  THER.	SAMPED (Print & Initial)  Date: 4141	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	**	φ	<b>X</b>	7	TO TO	***	У	**	X (	BTEX 8021B TPH 8015 PAH 8270 RCRA Metal: TCLP Metal: TCLP Semi V RCI GC.MS Vol. 8 GC.MS Semi PCB's 8080/0 Pest. 808/60 Chloride Gamma Spec Alpha Beta ( PLM (Asbest Major Anions	MOD. Is Ag A Is Ag A es Volatiles 8240/822 i. Vol. 8 608 8 b. cc. Air)	s Ba C	d Cr P		Se	ANALYSIS REQUEST (Circle or Specify Method No.)	PAGE: OF:

FETRA TECH  1910 N. Big Spring St. Midland, Texas 79705  (432) 682-4559 • Fax (432) 682-3946  SITE MANAGER: KO TONOLOZ  SAMPLE IDENTIFICATION FEDOM & 1 H  SAMPLE IDENTIFICATION FOLIAND  1-2  1-1  1-2  1-1  1-2  1-1  1-3  1-3	Analysis Request of Chain of Custody Record  TETRA TECH 1910 N. Big Spring St. Micland, Texas 19705 (42) 682-4559 * Fax (42) 682-3946  LD. DATE TIME LA STATE CAN # 1 # 075  CONSTRUCTION BER 2014 MARE LA STATE CONTROL TOWN BER 2014 MARE LA STATE CONTROL TOWN BER 2014 MARE LA STATE CONTROL TOWN BER 2014 MARE LA STATE MARE LA STATE CONTROL TOWN DATE TIME LA STATE CONTROL TOWN DATE	Chain of Custody Record  ANALYSIS REDUCTION  TOWNOLE IDENTIFICATION  FACTOR OF TOWNOLE INTEREST AND TOWNOLE IN THE CONTROL OF THE			RELINOUISHED BY: (Signature)  Date:	RELINQUISHED BY: (Signature)  Date:	RELINCUISHED BY: (Signature)  Date: 91151	30 + 1 +BH-3	19	8	3	Ē	び	14	25	172	11 9/14 S KBH-2	LAB I.D. DATE TIME TIME GRAB SAN	NO.: PROJECT NAME:	73	
	NUMBER OF CONTAINERS FILTERED (Y/N) HCL HNO3 HNO3 NONE Date: Time: Time:	NONE  NONE  NONE  BTEX 80219  THL 8015 MOD TX1005 (Ext. to C35)  PAH 8270  RCRA Metals Ag As Ba Cd Cr Pb Hg Se  TCLP Metals Ag As Ba Cd Vr Pd Hg Se  TCLP Volatiles	RECEIVED BY: (Signature)  DATE:	RECEIVED BY (Signature)	DECENTED BY (Signature)	REGEIVED BY: (Signature)	10	0-10-11	1		M-20	1478	9-10	6-7	4-5	23	0-1	SAMPLE IDENTIFICATION Eddy & NIN	70107	RA LECH  Big Spring St.  d, Texas 79705  -4559 • Fax (432) 682-3946	

SAMPLE CONDITION WHEN RECEIVED: #74 REMARKS:	CONTACT: PHONE: ZIP:	LABORATORY:	RELINQUISHED BY: (Signature)  Time:		RELINQUISHED BY: (Signature)  Date:	Date:	70 × 1	29   184-4	28	25	26	25	24	25	77	21 9/14 6 XBH-3	NUMBER 2016 TIME TIME COMP. GRAB	212C-MD-60005 Chuster St	36	3		1910 1910		Analysis Request of Chain of Custody Record
REMARKS:	DATE:	RECEIVED BY: (Signature)	RECEIVED BY: (Signature)	0	RECEIVED BY: (Signature)	RECEIVED BY: (Signatury)	2-3	0-1	29-30	24-25	19-26	14-15	9-10	67	4-5	2-3	SAMPLE IDENTIFICATION	State Com #1H	SITE MANAGER:		Midland, Texas 79705 (432) 682-4559 • Fax (432) 682-3946	TETRA TECH 1910 N. Big Spring St.		Chain of Custo
	TIME:		Date:	Time:	Date:		X	8	×	8	_	Κ.	*	*	~	*	NUMBER OF FILTERED HCL HNO3	(Y/N)	PRESERVATIVE METHOD					dv Record
Project Manager retains Birk paper. Apparating receives Gold const	Ocamo Pron	1	TETRA TECH CONTACT PERSON:	FEDEX BUS	SAMPLE SHIPPED BY: (Circle)	SAMPLED BY: (Bajnt & Initial)		XX									PAH 8270  RCRA Met TCLP Met TCLP Vola TCLP Sem RCI GC.MS Vo GC.MS Se PCB's 808	tals Ag // tals Ag // tals Ag // titles ni Volatile 1. 8240/8 mi. Vol. 100/608	As Ba ( As Ba ( es	Od Cr Od Vr		Se	ANALYSIS REQUEST (Circle or Specify Method No.)	PAGE:
see Gold copy	Authorized: Yes No	RUSH Charges	Results by:	OTHER:	AIRRII 1 #	Date: af14/1	× 	7	4	X	X	X	*	×	×	6	Gamma S Alpha Beta PLM (Asbo Major Anio	a (Air) estos)	ons, pH,	, TDS		Page		OF: 17

CITY STATE:  CONTACT:  SAMPLE CONDITION WHEN RECEIVED:  SAMPLE CON	LABORATORY:	RELINQUISHED BY: (Signature)	6	The same of the sa	0		- 55	38	37	36	35	2	33	52	31 9/H 6	NUMBER ZONO MATRIX	212C-MD-10165		H602073				Analysis Rec	^
PHONE: ZIP: DATE:		Date: REC		Date: HSQ	Date: 9115116 REP	141	9-1	6-	4.5	2-	-0 s-HB	14	-1-	1-0	X 13H-4 TW	GRAB	Chuster State Co	SITE MANAGER:		Midland, Texas 79705 (432) 682-4559 • Fax (432) 682-3946	1910 N. Big Spring St	TBAT	Analysis Request of Chain of Custody Record	
	RECEIVED BY: (Signature)	RECEIVED BY: (Signature)		RECEIVED BY: (Signature)	EWEDAY: (Signatury) MASA	Ä	0	7	01	W	_	Ā	Ö	7	44	SAMPLE IDENTIFICATION  BBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB	OTM #1#	NAVOT		<b>79705</b> (432) 682-3946	ring St.	<u></u>	1 of Custody F	- LOtady
TIME:		Date:	Time:	Date:	Date: 4115116	X	<b>K</b>	**	*	*	ざ	*	×	*	×	FILTERED HCL HNO3 ICE NONE BTEX 802		PRESERVATIVE METHOD		(F-1) 1-1	- 005		record	10052
Charlet Turket	1	TETRA TECH CONTACT PERSON:	FEDEX BUS	SAMPLE SAIPPED BY: (Circle)	SAMPLE BY (Print & Initial)						<b>*</b>					PAH 8270 RCRA Me TCLP Me TCLP Vola TCLP Sen RCI GC.MS Vo GC.MS Se PCB's 808	tals Ag // tals Ag // atiles ni Volatile pl. 8240/8 pmi. Vol. 830/608	As Ba C As Ba C es	Od Or		g Se	(Circle or Specify Method No.)	ANALYSIS REQUEST	PAGE:
Authorized: Yes No	BIICH Charges	Results by:	OTHER:	AIRRII #	Date VIAIIO	×	7	1	7	7	8	グ	X	~	×′	Gamma S Alpha Bet PLM (Asb Major Ani	a (Air) estos)	ons, pH,	TDS		Pag			OF:

TETRA TECH  1910 N. Big Spring St. Midland, Texas 79705  (432) 682-4559 • Fax (432) 682-3946  SITE MANAGER:    KO   COVOLUTION     KO   COVOLUTION	TETRA TECH  1910 N. Big Spring St. Midland, Texas 79705  (432) 682-4559 • Fax (432) 682-3946  SITE MANAGER:    KO   OXOXOT    CO   OXOXOT	CONTACT: STATE: CONTACT: SAMPLE CONDITION WHEN RECEIVED:	RESS:	RELINQUISHED BY: (Signature)		BELINOUISHED BY: (Signature)		49	181	47 9/16	+ %	45	th h	43	1 24	1/6 1/	NUMBER 200	212 MD - COLOS	CLIENT NAME:	H602073	-		
Spring St. xas 79705  • Fax (432) 682-3946  • Fax (432) 682-3946  • Fax (432) 682-3946   PRESERVATIVE  METHOD  METHOD  METHOD  METHOD  METHOD  JUMENTIFICATION  PRESERVATIVE  METHOD  A CON H I H CON DAIR  FILLT ERRED  H I I CON DAIR  FILLT ERRED  METHOD  JUMENTIFICATION  METHOD  JUMENTIFICATION  METHOD  A CON DAIR  Time:  Dair  Time:  PRESERVATIVE  METHOD  A CON DAIR  Time:  Dair  Time:  Time	BTEX 8021B  BTEX 8021B  TPH 8015 MOD. TX1005 (Ext. to C35)  PAH 8270  RCRA Metals Ag As Ba Cd Cr Pb Hg Se  TCLP Metals Ag As Ba Cd Vr Pd Hg Se  TCLP Volatiles	PHONE:		Time:	Time:	Time: 1356	+			BH-7		0				XBH-L	COMP. GRAB	(1			Midland, Te: (432) 682-4559	TETRA 1910 N. Big	)-
NUMBER OF CONTAINERS FILTERED (Y/N) HCL HNO3 HNO3 HNO3 Date: Time: NONE NONE	BTEX 8021B  TPH 8015 MOD. TX1005 (Ext. to C35)  PAH 8270  RCRA Metals Ag As Ba Cd Cr Pb Hg Se  TCLP Metals Ag As Ba Cd Vr Pd Hg Se  TCLP Volatiles	DATE:	RECEIVED BY: (Signature)	RECEIVED BY: (Signature)		RECEIVED BY: (Signature)	7	54	2-3	01	14-15	7-10	u-7		23	0-1	PLE IDENTIFICATION		8,		• Fax (432) 682-3946	Spring St.	
	BTEX 8021B  TPH 8015 MOD. TX1005 (Ext. to C35)  PAH 8270  RCRA Metals Ag As Ba Cd Cr Pb Hg Se  TCLP Metals Ag As Ba Cd Vr Pd Hg Se  TCLP Volatiles	TIME		Time:	Time:	Time:		6	<b>**</b>	3	8	8	7	*	75	×	FILTERED HCL HNO3						

SAMPLE CONDITION WHEN BECEIVED:	CITY: STATE: CONTACT:	RECEIVING LABORATORY:	RELINQUISHED BY: (Signature)		RELINQUISHED BY: (Signeture)	RELINGUISHED BX: (Signature)	9 00	59	58	57	56	55	72	53		51 0/15	NUMBER ZOID	212C MD 10105	CLIENT NAME: COS	H602075				Analysis R
#74 REMARKS:	PHONE: ZIP:		Date:	Time:	Date:	Time: LZW	4 +			AH-)					1 134-8	6 XBH-7	MATRIX COMP. GRAB	PROJECT NAME: Stoke	SITE MANAGER:		Midland, To (432) 682-455	TETRA 1910 N. Big		equest of Ch
	DATE:	RECEIVED BY: (Signature)	RECEIVED BY: (Signature)	•	REQUIVED BY: (Signature)	RECEIVED BX (Signature)	w	2-25	1-1.5	0-1	9-10	10-7	24	2-3	9	2-10	SAMPLE IDENTIFICATION	Com #IF	GER: TONGNOT		Midland, Texas 79705 (432) 682-4559 • Fax (432) 682-3946	TETRA TECH 1910 N. Big Spring St.		Analysis Request of Chain of Custody Record
	TIME:		Date:	Time:	Date:	Date of 11211	X	K	0	8	<b>♂</b>	<b>X</b> -	70	χ.	*	<b>~</b>	NUMBER OF FILTERED HCL HNO3		PRESERVATIVE METHOD					dy Record
	Jeans 11713	1	3	HAND DELIVERED LIPS	SAMPLE SHIPPED BY: (Circle)	SAMPLED BY: (Print & Dittal)				**					*		BTEX 802 TPH 80 PAH 8270 RCRA Me TCLP Me TCLP Sen RCI GC.MS Vc GC.MS Se PCB's 808	tals Ag // tals Ag //	As Ba C As Ba C es	Od Or		g Se	(Circle or Specify Method No.)	ANALYSIS BEO
	Authorized: Yes No	RUSH Charges	Results by:	OTHER:	AIRBILL #:	Date: All	X	6	3	5	6	0	8	8	6	70	Chloride Gamma S Alpha Bet PLM (Asb Major Ani	a (Air) estos)	ons, pH,	TDS		Page		O.

Please fill out all copies - Laboratory retains Yellov	ADDRESS: ZIP: DATE: TIME:	RECEIVING LABORATORY: RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)  Date: RECEIVED BY: (Signature)  Time:	Time:	BOTH WILLIAM STATE OF THE STATE	DECEMEND BY (Sidnatura						NUMBER ZOLV MATRIX COMP. GRAB SAMPLE IDENTIFICATION NUMBER FILTERE HCL	OF CONTA	SITE MANAGER:	H607075	1910 N. Big Spring St. Midland, Texas 79705		Analysis Request of Chain of Custody Record	- COLDINATOR DO
- Project Manager retains Pink copy			Time:	Time:	Date:	Date: 9 5					×	HNO3 ICE NONE		PRESERVATIVE METHOD				DIO	5
er ret					0							BTEX 80	21B 015 MOD	TV10	05 (E	xt. to C35)	-		
ains	1	_	1	1	S	S						TPH 8		. 1710	, L				
Pink	1	1	ETRA TECH CONTACT PERSON:	FEDEX FEDEX	SAMPLE SHIPPED BY: (Circle)	SAMPLE PRY.										b Hg Se			
CO	K		TEC	FEDEX HAND DELIVEBED	LE SI	9								As Ba (	Cd Vr P	d Hg Se	-	3.4	
by	1	•	HCC	LIVE	TIES TO	Y.Y.						TCLP Vo	emi Volatil				1	5	5.4
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# **Analytical Report 537439**

for Tetra Tech- Midland

Project Manager: Ike Tavarez
Cluster State Com #1 H
212c-MD-00605.07
30-SEP-16

Collected By: Client





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

Xenco-Houston (EPA Lab code: TX00122): Texas (T104704215), Arizona (AZ0765), Florida (E871002), Louisiana (03054) Oklahoma (9218)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295) Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400) Xenco-San Antonio: Texas (T104704534)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757) Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)



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Case Narrative	5
Certificate of Analysis Summary	6
Explanation of Qualifiers (Flags)	8
LCS / LCSD Recoveries	9
MS / MSD Recoveries	10
Chain of Custody	11
Sample Receipt Conformance Report	12





30-SEP-16

Project Manager: **Ike Tavarez Tetra Tech- Midland**4000 N. Big Spring Suite 401
Midland, TX 79705

Reference: XENCO Report No(s): 537439

Cluster State Com #1 H
Project Address: Eddy Co NM

#### **Ike Tavarez**:

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) 537439. 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. 537439 will be filed for 60 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** 

Knus Roah

Project Manager

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# **Sample Cross Reference 537439**



# Tetra Tech- Midland, Midland, TX

Cluster State Com #1 H

Sample Id	Matrix	<b>Date Collected</b>	Sample Depth	Lab Sample Id
AH-1	S	09-22-16 00:00	0 - 1	537439-001
AH-1	S	09-22-16 00:00	1 - 1.5	537439-002
AH-1	S	09-22-16 00:00	2 - 2.5	537439-003
AH-1	S	09-22-16 00:00	3 - 3.5	537439-004
AH-1	S	09-22-16 00:00	4 - 4.5	537439-005
AH-1	S	09-22-16 00:00	5 - 5.5	537439-006
AH-1	S	09-22-16 00:00	6 - 6.5	537439-007
AH-1	S	09-22-16 00:00	7 - 7.5	537439-008



## CASE NARRATIVE



Client Name: Tetra Tech- Midland Project Name: Cluster State Com #1 H

Project ID: 212c-MD-00605.07 Report Date: 30-SEP-16
Work Order Number(s): 537439 Date Received: 09/23/2016

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



# Certificate of Analysis Summary 537439

Tetra Tech- Midland, Midland, TX

Project Name: Cluster State Com #1 H

**Project Id:** 212c-MD-00605.07

**Contact:** Ike Tavarez Eddy Co NM

**Project Location:** 

Date Received in Lab: Fri Sep-23-16 11:55 am

**Report Date:** 30-SEP-16 Project Manager: Kelsey Brooks

	Lab Id:	537439-0	01	537439-0	02	537439-00	)3	537439-00	)4	537439-0	05	537439-0	06
Analysis Requested	Field Id:	AH-1		AH-1		AH-1		AH-1		AH-1		AH-1	
Anaiysis Kequesieu	Depth:	0-1		1-1.5		2-2.5		3-3.5		4-4.5		5-5.5	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Sep-22-16 0	00:00	Sep-22-16 0	00:00	Sep-22-16 0	0:00	Sep-22-16 0	0:00	Sep-22-16 (	00:00	Sep-22-16 0	00:00
Inorganic Anions by EPA 300/300.1	Extracted:	Sep-30-16 (	9:00	Sep-30-16 0	9:00	Sep-30-16 0	9:00	Sep-30-16 0	9:00	Sep-30-16 0	9:00	Sep-30-16 0	9:00
	Analyzed:	Sep-30-16 1	1:19	Sep-30-16 1	1:40	Sep-30-16 1	1:47	Sep-30-16 1	1:54	Sep-30-16 1	2:01	Sep-30-16 1	2:22
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		4120	50.0	9480	100	10800	100	12600	250	3040	50.0	665	50.0

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

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

Knis Roah



# Certificate of Analysis Summary 537439

Tetra Tech- Midland, Midland, TX

Project Name: Cluster State Com #1 H



**Project Id:** 212c-MD-00605.07

**Contact:** Ike Tavarez Eddy Co NM

**Project Location:** 

Date Received in Lab: Fri Sep-23-16 11:55 am

**Report Date:** 30-SEP-16 Project Manager: Kelsey Brooks

	Lab Id:	537439-00	)7	537439-0	08			
			, ,					
Analysis Requested	Field Id:	AH-1		AH-1				
Times year are queeseen	Depth:	6-6.5		7-7.5				
	Matrix:	SOIL		SOIL				
	Sampled:	Sep-22-16 0	0:00	Sep-22-16 0	00:00			
Inorganic Anions by EPA 300/300.1	Extracted:	Sep-30-16 0	9:00	Sep-30-16 0	9:00			
	Analyzed:	Sep-30-16 1	2:29	Sep-30-16 1	2:36			
	Units/RL:	mg/kg	RL	mg/kg	RL			
Chloride		373	50.0	37.8	5.00			

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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Huns Roah Kelsey Brooks Project Manager





# Flagging Criteria



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

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

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

**DL** Method Detection Limit

NC Non-Calculable

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

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(214) 902 0300	(214) 351-9139
(210) 509-3334	(210) 509-3335
(432) 563-1800	(432) 563-1713
(602) 437-0330	
	(281) 240-4200 (214) 902 0300 (210) 509-3334 (432) 563-1800



mg/kg

**Units:** 

## **BS / BSD Recoveries**

RI ANK /RI ANK SPIKE / RI ANK SPIKE DIDI ICATE DECOVEDY STIDY



Project Name: Cluster State Com #1 H

Work Order #: 537439 Project ID: 212c-MD-00605.07

Analyst: MNR Date Prepared: 09/30/2016 Date Analyzed: 09/30/2016

Lab Batch ID: 3001120Sample: 714399-1-BKSBatch #: 1Matrix: Solid

		DLAN	(K/DLANK)	31 1KE / 1	DLAINK S	I IKE DUI I	LICATE	KECOVI	ZKI SIUL	,, 	
Inorganic Anions by EPA 300/300.1	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
Chloride	< 5.00	250	233	93	250	234	94	0	90-110	20	

Relative Percent Difference RPD = 200\*|(C-F)/(C+F)| Blank Spike Recovery [D] = 100\*(C)/[B] Blank Spike Duplicate Recovery [G] = 100\*(F)/[E] All results are based on MDL and Validated for QC Purposes



## Form 3 - MS / MSD Recoveries



Page 136 of 143

Project Name: Cluster State Com #1 H

**Work Order #:** 537439

**Project ID:** 212c-MD-00605.07

Lab Batch ID:

3001120

**QC- Sample ID:** 536657-006 S

Batch #:

Matrix: Soil

Date Analyzed:

09/30/2016

**Date Prepared:** 09/30/2016

Analyst: MNR

**Reporting Units:** 

mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1  Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	920	250	1160	96	250	1150	92	1	90-110	20	

**Lab Batch ID:** 3001120

**QC- Sample ID:** 537439-001 S

Batch #:

1 Matrix: Soil

Date Analyzed:

**Reporting Units:** 

09/30/2016

mg/kg

**Date Prepared:** 09/30/2016

Analyst: MNR

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA Analytes	A 300/300.1 Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	4120	2500	6760	106	2500	6650	101	2	90-110	20	

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

	ANALYSIS REQUEST (Circle or Specify Method No.)	d Vr Pd Hg Se	TX100  12 Ba C  260/624  270/625	6 MOD.  als Ag Asla Asla Ag Asla Ag Asla Ag Asla Ag Asla Ag Asla Ag	PAH 8270 RCRA Met	) %	<b>X</b>	X	X		<b>X</b>	× .	***		SAMPLED BY THE BY TIME: 9 173 HW	SAMPLE SHIPPED BY: (Gircle) AIRBILL #: FEDEX BUS CTHED.	TETRA TECH CONTACT PERSON: Results by:	RUSH Charges	Aumonzea: Yes No	ger retains Pink copy - Accounting receives Gold copy.
Analysis Reduest of Chain of Custody Record		1910 N. Big Spring St. Midland, Texas 79705 (432) 682-4559 • Fax (432) 682-3946	CLENT NAME: SITE MANAGER: $\frac{6}{2}$ PRESERVATIVE NETHOD	E CONTA	LAB I.D. DATE TIME EX SAMPLE IDENTIFICATION EN	1-0 1-H4 X S	メンフ	7 1 52-7	V 1 1 52-8	X 1 5 7 7		١	3 1 36-6		Date: 4123/16	Date: REÇEIVED BY: (Signature)	ure)         Date:         RECEIVED           Time:		PHONE	SAMPLE CONDITION WHEN RECEIVED: REMARKS: $\mathcal{T}$ Sequence of the sequence of t



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



Client: Tetra Tech- Midland

Date/ Time Received: 09/23/2016 11:55:00 AM

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

Work Order #: 537439

Temperature Measuring device used: R8

	Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?		2.3
#2 *Shipping container in good condition	?	N/A
#3 *Samples received on ice?		Yes
#4 *Custody Seal present on shipping co	ontainer/ cooler?	N/A
#5 *Custody Seals intact on shipping cor	ntainer/ cooler?	N/A
#6 Custody Seals intact on sample bottle	es?	N/A
#7 *Custody Seals Signed and dated?		N/A
#8 *Chain of Custody present?		Yes
#9 Sample instructions complete on Cha	in of Custody?	Yes
#10 Any missing/extra samples?		No
#11 Chain of Custody signed when relind	quished/ received?	Yes
#12 Chain of Custody agrees with sample	e label(s)?	Yes
#13 Container label(s) legible and intact	?	Yes
#14 Sample matrix/ properties agree with	n Chain of Custody?	Yes
#15 Samples in proper container/ bottle?		Yes
#16 Samples properly preserved?		Yes
#17 Sample container(s) intact?		Yes
#18 Sufficient sample amount for indicat	ed test(s)?	Yes
#19 All samples received within hold time	e?	Yes
#20 Subcontract of sample(s)?		N/A
#21 VOC samples have zero headspace		N/A
#22 <2 for all samples preserved with HI samples for the analysis of HEM or HEM-analysts.		N/A
#23 >10 for all samples preserved with N	laAsO2+NaOH, ZnAc+NaOH?	N/A
* Must be completed for after-hours de	livery of samples prior to placing in	the refrigerator
Analyst:	PH Device/Lot#:	
, maryot.	i i i Dovido/ Lotπ.	
Checklist completed by:	Jessica Kramer	Date: 09/23/2016
Checklist reviewed by:	Mus Hoah  Kelsey Brooks	Date: 09/23/2016

## State of New Mexico **Energy Minerals and Natural Resources**

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

Form C-141 Revised August 8, 2011

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

			Rele			n and Co	rrective A	ction	<u> </u>			
			12010	ase I (other		OPERAT		Ction		l Report		Final Report
Name of Co	mpany:	COC	G Operati	ng LLC	Т	Contact:	OK	Ro	bert McNe			mai Report
Address:	600 Wes	t Illinois Ave	enue, Mic	lland TX 79701		Telephone N		43.	2-683-7443	3		
Facility Nar	ne:	CLUSTER	STATE	COM #001H		Facility Typ	e:		Flowline			
Surface Ow	ner:	State		Mineral C	)wner:				API No.	30-0	15-375	47
						N OF REI	LEASE					
Unit Letter D	Section 16	Township 26S	Range 27E	Feet from the 380'		/South Line North	Feet from the 330'		West Line West		County Eddy	,
				Latitude 32.04	86679	Longitu	ıde 104.202667	2				
			-	NAT	URE	OF RELI						<u> </u>
Type of Relea	ase:	Produced	Water			Volume of	Release: of Produced Wat	er	Volume R	ecovered: obls of Proc	luced W	iter
Source of Re	lease:					Date and H	our of Occurrenc	e:	Date and I	Hour of Dis	covery:	
Was Immedia	ate Notice (	Flowli	ine			08/03	3/2016 10:30 am	1	(	08/03/2016	10:30 a	m
was minicula	ite Notice C		Yes 🗵	No 🛭 Not Re	equired	11 1 23, 10	wiloni:					·
By Whom?						Date and H						
Was a Water	course Read		Yes 🗵	l No		If YES, Vo	lume Impacting t	he Wat	ercourse.			
If a Watercon	ırse was Im	pacted, Descr										
		<b>,</b>										
Describe Cau	se of Probl	em and Reme	dial Action	ı Taken.*								
		A nots	ilina wac d	amaged by a yeb	icle or r	and equipmen	t. Replaced dama	and con	tion of line			
					icic or r	oaa equipmen	ii. ivepiaeed daina	iged sec	tion of fine.			
Describe Are	a Affected	and Cleanup A	Action Tak	en.*								
							'. Concho will has NMOCD for appr					
regulations al public health should their of or the environ	If operators or the envi- operations h nment. In a	are required to ronment. The nave failed to a	o report and acceptance acceptanc	d/or file certain r e of a C-141 repo investigate and r	elease nort by the emediat	otifications ar e NMOCD ma e contamination	knowledge and und perform correct arked as "Final Roon that pose a three the operator of	tive act eport" of eat to g	ions for rele loes not relic round water.	ases which eve the ope , surface wa	may end rator of l ater, hum	langer iability an health
Signatures							OIL CON	SERV	ATION	DIVISIO	<u>NC</u>	
Signature: Printed Name		Rober	t Grubbs J	r.		Anneared by	Environmental S		÷.			
Title:						Approval Dat				Onta:		
4 111101									Expiration I	Jaic.		
E-mail Addre	E-mail Address: rgrubbs@concho.com					Conditions of	Approval:			Attached		
Date:	August 4, 2			432-683-7443								
Attach Addi	tional She	ets If Necess	ary									
Received by OCD:												
d b												
eive												
Rec												

# District I 1625 N. French Dr., Hobbs, NM 88240 1000 Rio Brazos Road, Aztec, NM 87410

## State of New Mexico **Energy Minerals and Natural Resources**

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

Form C-141

Revised August 8, 2011

1220 South St. Francis Dr. Santa Fe, NM 87505

Oil Conservation Division

Release Notification	on and Corrective Ac	tion	
	OPERATOR		Report  Final Repor
Name of Company: COG Operating LLC	Contact:	Robert McNei	11
Address: 600 West Illinois Avenue, Midland TX 79701	Telephone No.	432-683-7443	
Facility Name: CLUSTER STATE COM #001H	Facility Type:	Flowline	
Surface Owner: State Mineral Owner	•	API No.	30-015-37547
		111110.	30-013-31341
	N OF RELEASE  h/South Line   Feet from the	East/West Line	County
D 16 26S 27E 380'	North 330'	West	Eddy
<b>Latitude 32.0486679</b>	3		
	E OF RELEASE	1	
Type of Release: Produced Water	Volume of Release: 10bbls of Produced water	Volume Re	ecovered: obls of Produced water
Source of Release:	Date and Hour of Occurrence		lour of Discovery:
Poly Flowline	07-16-2016 09:00am		7-16-2016 09:00am
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	e Watercourse.	
If a Watercourse was Impacted, Describe Fully.*			
Describe Cause of Problem and Remedial Action Taken.*			
Polyline failure. Cut out bad section	n of line and refuse the poly line b	ack together.	
Describe Area Affected and Cleanup Action Taken.*			
This spill affected an area of 2' x 100' and 12' x 10' in the pasture, Co the release and we will present a remediation work plan to			
I hereby certify that the information given above is true and complete to regulations all operators are required to report and/or file certain release public health or the environment. The acceptance of a C-141 report by t should their operations have failed to adequately investigate and remedia or the environment. In addition, NMOCD acceptance of a C-141 report federal, state, or local laws and/or regulations.	notifications and perform correcti the NMOCD marked as "Final Re- ate contamination that pose a threa does not relieve the operator of re-	ive actions for rele port" does not relie at to ground water, esponsibility for co	ases which may endanger we the operator of liability surface water, human health impliance with any other
Signature: Related	OIL CONS	ERVATION I	<u>DIVISION</u>
Printed Name: Robert Grubbs Jr.	Approved by Environmental Sp	ecialist:	
Title: Senior Environmental Coordinator	Approval Date:	Expiration D	Date:
Title: Senior Environmental Coordinator  E-mail Address: rgrubbs@concho.com  Date: July 19, 2016 Phone: 432-683-7443	Conditions of Approval:		Attached
Date: July 19, 2016 Phone: 432-683-7443			
Attach Additional Sheets If Necessary			

Form C-141

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

Revised August 8, 2011
Submit 1 Copy to appropriate District Office in

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.

			Rele	ase Notific	atio	n and Co	orrective A	ctior	1				
						<b>OPERA</b>	ГOR		Initial	l Report		Report	
Name of Co			G Operati			Contact:		Ro	bert McNe	ill			
Address:				lland TX 79701		Telephone N			32-683-7443				
Facility Nar	ne:	CLUSTER	STATE	COM #001H		Facility Typ	e:		Flowline				
Surface Ow	ner:	State		Mineral C	)wner:				API No. 30-015-37547				
				LOCA	ATIO	N OF REI	LEASE						
Unit Letter	Section	Township	Range	Feet from the	North	n/South Line	Feet from the	East/	West Line		County		
D	16	26S	27E	380'		North	330'	,	West		Eddy		
				Latitude 32.04	86679	Longitu	ıde 104.2026672	2					
				NAT	URE	OF REL			T				
Type of Rele	ase:	Produced	Water			Volume of 10bbls	Release: of Produced Wate	er	Volume Re		uced Water		
Source of Re	lease:	Flowli	na				Iour of Occurrence 3/2016 10:30 am			Hour of Dis 08/03/2016			
Was Immedia	ate Notice C		ne			If YES, To			C	08/03/2010	10.30 aiii		
			Yes 🛚	No 🛛 Not Ro	equired								
By Whom?						Date and H							
Was a Water	course Reac	_	<b>v</b>	NI.		If YES, Vo	olume Impacting the	he Wat	ercourse.				
		Ш		No									
If a Watercou													
Describe Cau	ise of Proble	em and Remed	dial Action	Taken.*									
		A poly	line was d	amaged by a veh	icle or	road equipmer	nt. Replaced dama	ged sec	ction of line.				
Describe Are	a Affected a	and Cleanup A	Action Tak	en.*									
This releas	se occurred	on a 4" polyli	ne on the	side of the road.	A spill a	area of 200'X1	'. All work has be	een con	npleted in ac	cordance w	ith the work p	olan	
	su	bmitted and a	pproved by	y the NMOCD ar	d BLM	I on Novembe	r 21, 2016 and Fel	bruary	1, 2017, resp	ectively.			
regulations a public health should their of or the environ	Il operators or the envir operations h nment. In a	are required to conment. The ave failed to a	o report an acceptance dequately OCD accep	d/or file certain r e of a C-141 repo investigate and r	elease i ort by th emedia	notifications and ne NMOCD mate to contaminati	knowledge and und perform correct arked as "Final Roon that pose a three the operator of r	tive act eport" c eat to g	ions for releated loes not relies round water,	ases which eve the oper surface wa	may endanger ator of liabilit ter, human he	r ty	
							OIL CONS	SERV	ATION	DIVISIO	N		
Signature:  Printed Name: Dakota Neel						Approved by Environmental Specialist:  Ashley Maxwell					ll		
Title:	Н.	SE Coordinate	or			Approval Da	te: 12/06/2022	2	Expiration D	Date:			
E-mail Addre	ess:	dneel2@c	concho.cor	m		Conditions of	f Approval:			Attached	П		

Date:

December 19, 2017

Phone:

575-746-2010

<sup>\*</sup> Attach Additional Sheets If Necessary

Form C-141

<u>District I</u> 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**

Revised August 8, 2011

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.

			Rele	ease Notific	catio	n and Co	rrective A	Actio	n					
						<b>OPERA</b>	ΓOR		☐ Initia	l Report	$\boxtimes$	Final Report		
Name of Co			G Operati			Contact:		R	obert McNe	ill				
Address:				dland TX 79701		Telephone N	lo.	4	432-683-7443					
Facility Nat	ne:	CLUSTER	STATE (	COM #001H		Facility Typ	e:	F	Flowline					
Surface Ow	ner:	State		Mineral O	)wner:				API No.	. 30-0	)15-37	547		
				LOCA	TIO	N OF REI	LEASE							
Unit Letter	Section	Township	Range	Feet from the		h/South Line	Feet from the	East	/West Line		Count	v		
D	16	26S	27E	380'		North	330'		West		Eddy	-		
				Latitude 32.048		Longitu	ide 104.20266 E <b>ASE</b>	72						
Type of Rele	ase:					Volume of	Release:		Volume R	ecovered:				
		Produced	Water				of Produced wa		_	bbls of Pro				
Source of Re	lease:	Poly Flov	velim o				lour of Occurren 6-2016 09:00ar			Hour of Dis 07-16-2016				
Was Immedi	ate Notice (		MIIIE			If YES, To		11		<i>J7-</i> 10-2010	09.00	aiii		
,, <b>u</b> o 111111001			Yes 🛚	No 🛭 Not Re	equired		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,							
By Whom?						Date and H								
Was a Water	course Reac		Yes 🗵	] No		If YES, Vo	lume Impacting	the Wa	atercourse.					
If a Watercon	ırse was Im	pacted, Descri	be Fully.*											
Describe Cau	ise of Proble	em and Remed	dial Action	n Taken.*										
		Po	olyline fai	lure. Cut out bad	section	of line and re	fuse the poly line	e back t	ogether.					
Describe Are	a Affected	and Cleanup A	Action Tak	ten.*										
This spi	ll affected a			12' x 10' in the pa MOCD and BLM							n submi	tted and		
regulations a public health	ll operators or the envi	are required to ronment. The	o report an acceptance	e is true and complete is true and complete of a C-141 repo	elease i ort by th	notifications and ne NMOCD m	nd perform corre arked as "Final l	ective ac Report"	ctions for rele does not relie	ases which eve the ope	may en	idanger liability		
or the enviro	nment. In a		CD accep	investigate and restance of a C-141										
							OIL CON	<b>ISER</b>	VATION	DIVISIO	<u>N</u>			
		atot New												
Signature:						Approved by	Environmental 3	Special	ist:	home	W	dus 00		
Printed Name	e:	Dakota	ı Neel						XYU	wey	m	gwell		
Title:	Н	ISE Coordinate	or			Approval Da	e: 12/06/20	22	Expiration I	Date:				
						• •								
E-mail Addre	ess:	dneel2@c	oncho.com	n		Conditions of	Approval:			Attached				

575-746-2010

Phone:

Date: December 19, 2017

<sup>\*</sup> Attach Additional Sheets If Necessary

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

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 164521

#### **CONDITIONS**

Operator:	OGRID:
COG OPERATING LLC	229137
600 W Illinois Ave	Action Number:
Midland, TX 79701	164521
	Action Type:
	[IM-SD] Incident File Support Doc (ENV) (IM-BNF)

#### CONDITIONS

Created By	Condition	Condition Date
amaxwel	None None	12/6/2022