



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, respectively.

CORPORATE ADDRESS
One Concho Center | 600 West Illinois Avenue | Midland, Texas 79701
PHONE 432.683.7443 | FAX 432.683.7441

LOCAL ADDRESS
Concho West | 2208 Main Street | Artesia, New Mexico 88210
PHONE 575.748.6940 | FAX 575.746.2096

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.

Cluster State Com #001H		
Sample ID	Date	Chloride 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

Enclosed

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

Cluster State Com #1H

Cluster State Com #1H



200 ft





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

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 www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited 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.

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,

A handwritten signature in black ink that reads "Celey D. Keene".

Celey D. Keene
Lab Director/Quality Manager



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

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	Analyzed 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 whatsoever 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, Lab Director/Quality Manager



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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

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*=Accredited Analyte

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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.

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Lab Director/Quality Manager



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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: S3 - 2-3' (H700496-01)

Chloride, SM4500Cl-B	mg/kg	Analyzed 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	

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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RPD Relative Percent Difference
** Samples not received at proper temperature of 6°C or below.
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Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene

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Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

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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, SM4500Cl-B	mg/kg	Analyzed 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, Lab Director/Quality Manager



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- 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

Celey D. Keene, Lab Director/Quality Manager



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

R. Ashill

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

BILL TO

ANALYSIS REQUEST

Company Name: COG Operating LLC
 Project Manager: Dakota Neel
 Address: 2208 West Main
 City: Artesia State: NM Zip: 88210
 Phone #: 432-215-2783 Fax #:
 Project #: Project Owner:
 Project Name: Cluster State Com #001H
 Project Location:
 Sampler Name: Aaron Lieb
 P.O. #:
 Company: COG Operating LLC
 Attn: Robert McNeill
 Address: 600 W Illinois
 City: Midland
 State: TX Zip: 79701
 Phone #: (432) 221-0388
 Fax #:

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						PRESERV.			DATE	TIME	BTEX	TPH	Chloride
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :					
AT0097	52 - 6-7'											2/27/17	2:15 PM			X	

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Relinquished By: *[Signature]* Date: 2-28-17
 Received By: *[Signature]* Date: 2-28-17
 Time: 9:00

Delivered By: (Circle One)
 Sampler - UPS - Bus - Other:
 Sample Condition: Cool Intact
 Yes No
 CHECKED BY: *[Signature]* (Initials) TD #75

Phone Result: Yes No
 Fax Result: Yes No
 Add'l Phone #:
 Add'l Fax #:
 dhneel2@concho.com
 alieb@concho.com
 rhaskell@concho.com

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

SITE INFORMATION

Report Type: Work Plan 2RP-3820

General Site Information:

Site:	Cluster State Com #001H				
Company:	COG Operating LLC				
Section, Township and Range	Unit D	Sec. 16	T 26S	R 27E	
Lease Number:	API No. 30-015-37547				
County:	Eddy				
Facility GPS:	32.0486679° N			104.2026672° W	
Release GPS:	32.03728° N			104.21032° W	
Surface Owner:	State				
Mineral Owner:					
Directions:	FRM:US-285 & CR-724/WHITES CITY RD, GO W ON WHITES CITY RD APPRX 7.8MI, TRN S APPRX 1.9MI, TRN W APPRX 0.2MI, TRN N ON LEASE RD & FOLLOW RD TO GPS.				

Release Data:

Date Released:	8/3/2016
Type Release:	Produced Water
Source of Contamination:	Damaged Flowline
Fluid Released:	10 bbls
Fluids Recovered:	0 bbls

Official Communication:

Name:	Robert McNeil		Ike Tavaréz
Company:	COG Operating, LLC		Tetra Tech
Address:	One Concho Center 600 W. Illinois Ave.		4000 N. Big Spring Ste 401
City:	Midland Texas, 79701		Midland, Texas
Phone number:	(432) 686-3023		(432) 687-8110
Fax:	(432) 684-7137		
Email:	rmcneil@conchoresources.com		Ike.Tavaréz@tetrattech.com

Ranking Criteria

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

Acceptable Soil RRAL (mg/kg)		
Benzene	Total BTEX	TPH
10	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.tetrattech.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

Handwritten signature of Clair Gonzales in blue ink.

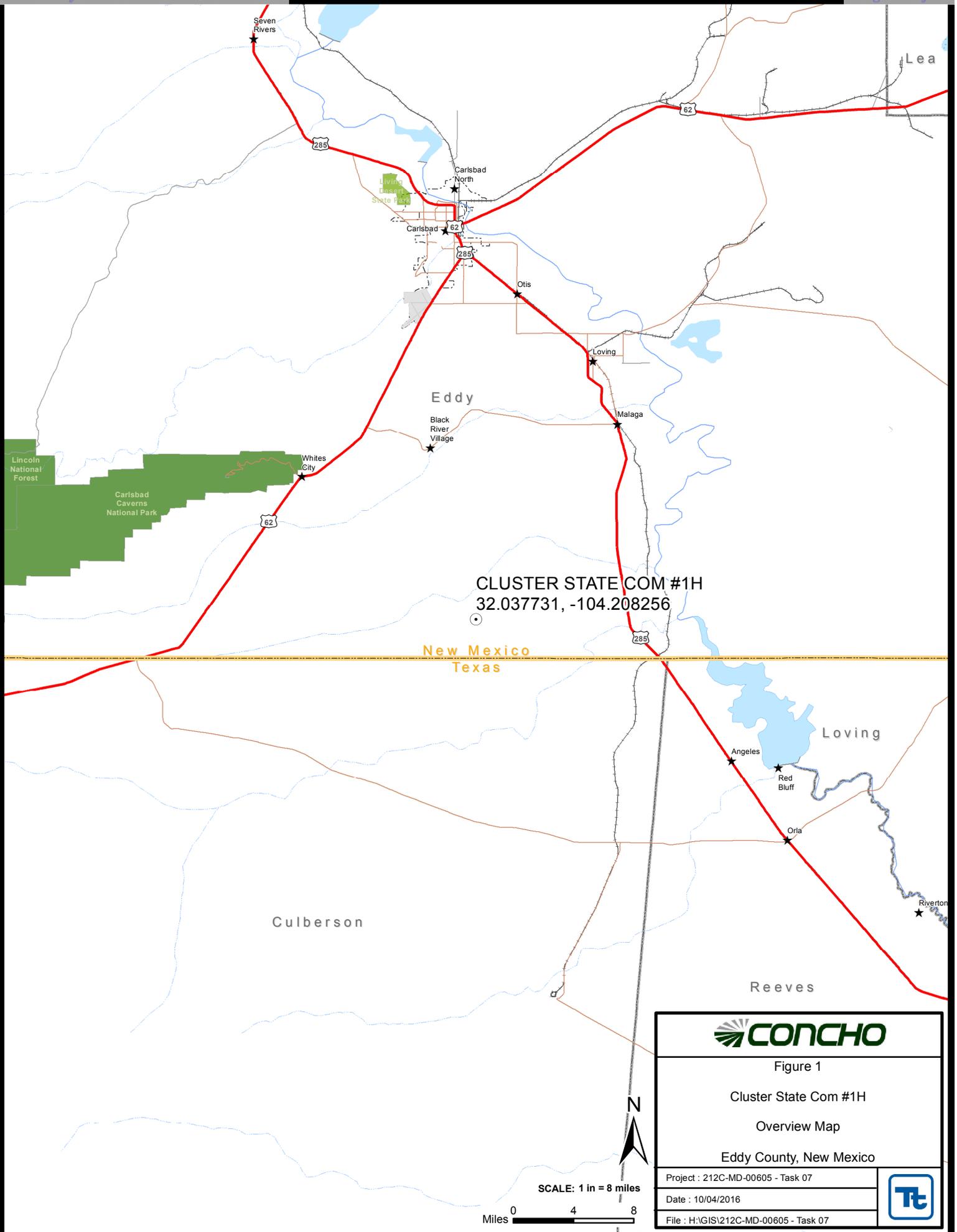
Clair Gonzales,
Geologist I

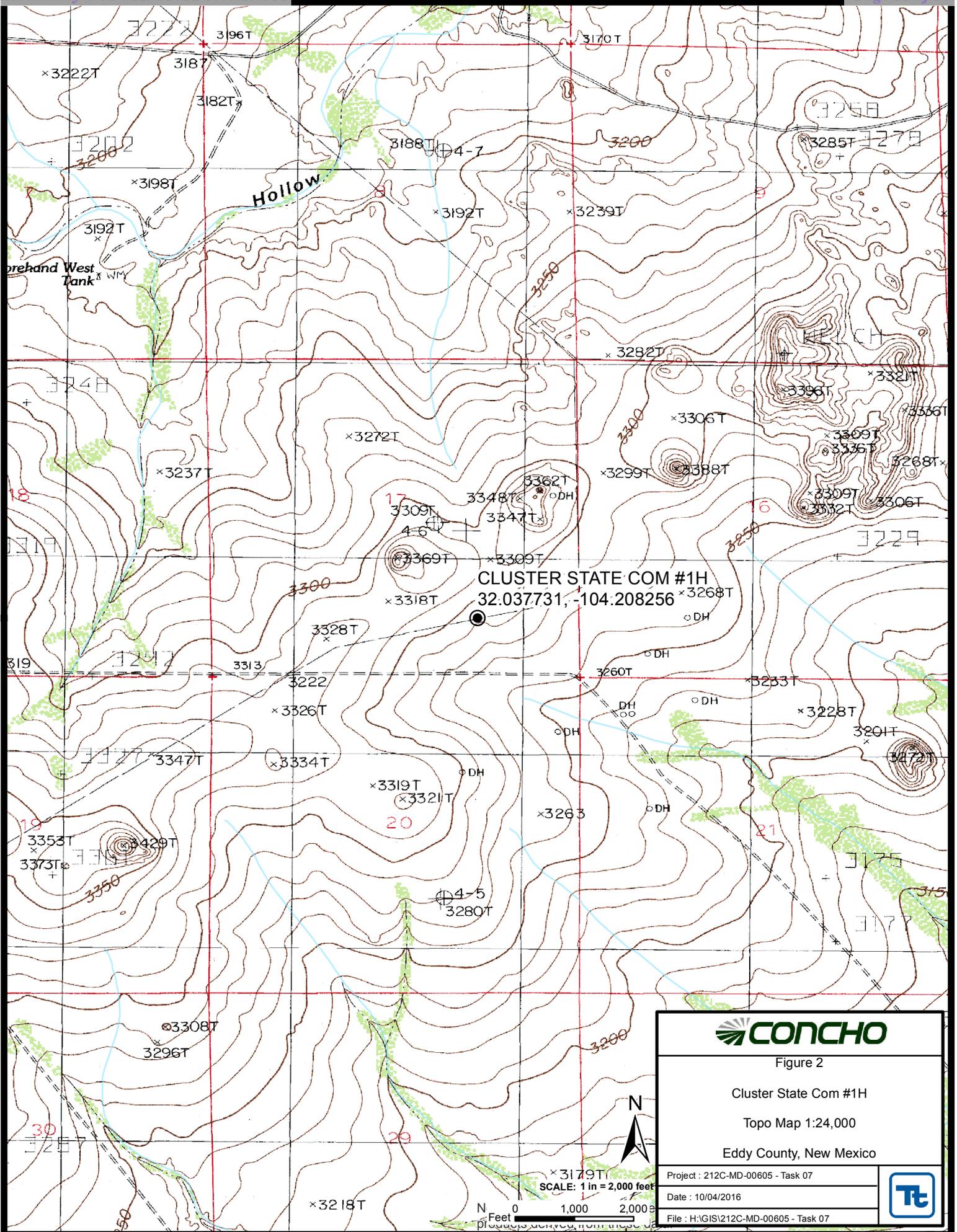
Handwritten signature of Ike Tavarez in blue ink.

Ike Tavarez,
Senior Project Manager, P.G.

cc: Robert McNeill – COG
Dakota Neel – COG

Figures







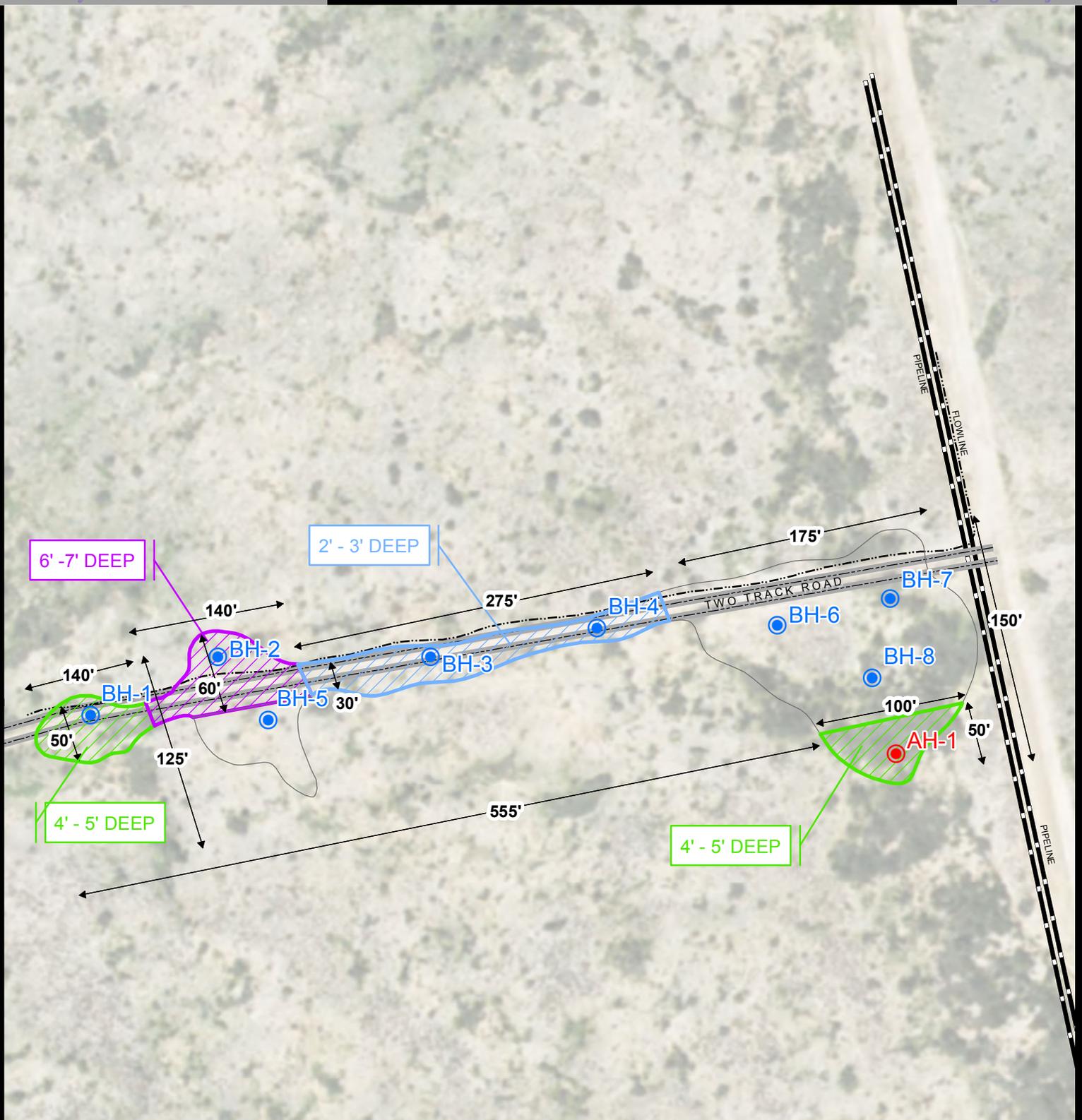
EXPLANATION

- AUGER HOLE SAMPLE LOCATIONS
- BORE HOLE SAMPLE LOCATIONS
- ▨ SPILL AREA



Source: Esri, DigitalGlobe, GeoEye, USDA, USGS, NAVTEQ, CNES, Airphoto, User Community
 NOT TO SCALE

Figure 3	
Cluster State Com #1H (32.037731,-104.208256)	
Spill Assessment Map	
Eddy County, New Mexico	
Project : 212C-MD-00605 - Task 07	
Date : 10/04/2016	
File : H:\GIS\212C-MD-00605 - Task 07	



EXPLANATION	
●	AUGER HOLE SAMPLE LOCATIONS
●	BORE HOLE SAMPLE LOCATIONS
	PROPOSED EXCAVATION AREA



Figure 4

Cluster State Com #1H
(32.037731,-104.208256)

Proposed Excavation Areas & Depths Map

Eddy County, New Mexico

Project : 212C-MD-00605 - Task 07	
Date : 10/04/2016	
File : H:\GIS\212C-MD-00605 - Task 07	

Source: Esri, DigitalGlobe, GeoEye, USDA, USGS, NOT TO SCALE
User Community

Tables

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

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

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

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

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

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

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

Sample ID	Sample Date	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	GRO	DRO	Total						
AH-1	9/15/2016	0-1	X		<10.0	23.8	23.8	<0.050	<0.050	<0.050	<0.150	<0.300	928
	"	1-1.5	X		-	-	-	-	-	-	-	-	11,600
	"	2-2.5	X		-	-	-	-	-	-	-	-	12,000
	"	3-3.5	X		-	-	-	-	-	-	-	-	15,200
	"	4-4.5	X		-	-	-	-	-	-	-	-	3,680
AH-1	9/22/2016	0-1	X		-	-	-	-	-	-	-	-	4,120
	"	1-1.5	X		-	-	-	-	-	-	-	-	9,480
	"	2-2.5	X		-	-	-	-	-	-	-	-	10,800
	"	3-3.5	X		-	-	-	-	-	-	-	-	12,600
	"	4-4.5	X		-	-	-	-	-	-	-	-	3,040
	"	5-5.5	X		-	-	-	-	-	-	-	-	665
	"	6-6.5	X		-	-	-	-	-	-	-	-	373
	"	7-7.5	X		-	-	-	-	-	-	-	-	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 04 2016
Submit Copy to appropriate District Office in accordance with 19.15.29 NMAC.

RECEIVED

Release Notification and Corrective Action

NAB1421834653

OPERATOR

Initial Report Final Report

Name of Company:	COG Operating LLC <i>229137</i>	Contact:	Robert McNeill
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

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	16	26S	27E	380'	North	330'	West	Eddy

Latitude 32.0486679 Longitude 104.2026672

NATURE OF RELEASE

Type of Release:	Produced Water	Volume of Release:	10bbls of Produced Water	Volume Recovered:	0bbls of Produced Water
Source of Release:	Flowline	Date and Hour of Occurrence:	08/03/2016 10:30 am	Date and Hour of Discovery:	08/03/2016 10:30 am
Was Immediate Notice Given?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?			
By Whom?		Date and Hour:			
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			
If a Watercourse was Impacted, Describe Fully.*					
Describe Cause of Problem and Remedial Action Taken.*					
A polyline was damaged by a vehicle or road equipment. Replaced damaged section of line.					
Describe Area Affected and Cleanup Action Taken.*					
This release occurred on a 4" polyline on the side of the road. A spill area of 200'X1'. Concho will have the spill site sampled to delineate any possible contamination from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation work.					

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

Signature:	<i>Robert Grubbs Jr.</i>	OIL CONSERVATION DIVISION	
Printed Name:	Robert Grubbs Jr.	Approved by Environmental Specialist:	<i>Herb</i>
Title:	Senior Environmental Coordinator	Approval Date:	8/5/16
E-mail Address:	rgrubbs@concho.com	Expiration Date:	N/A
Date:	August 4, 2016	Phone:	432-683-7443
		Conditions of Approval:	Attached <input type="checkbox"/>
		REMEDATION per O.C.D. Rules & Guidelines	
		SUBMIT REMEDIATION PROPOSAL NO	

* Attach Additional Sheets If Necessary

LATER THAN: 4/8/16 2RP-3820

Appendix B

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

25 South			26 East		
6	5	4	3	2	1
			45		
7	8	9	45	10	11
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 South			27 East		
6	5	4	3	2	1
7	8	9	10	11	12
					92
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36
		19			

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

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

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

26 South			28 East		
6	5	4	3	2	1
				120	
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 & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed) (quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

POD Number	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
C 02218	CUB	ED		4	1	4	07	26S	27E	573039	3546725*	35		
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	C	ED		2	3	4	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

Appendix D



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

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 www.tceq.texas.gov/field/ga/lab_accred_certif.html.

Cardinal Laboratories is accredited 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)

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



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

Reported:
21-Sep-16 09:19

Sample ID	Laboratory ID	Matrix	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

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 or any other cause whatsoever 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 damage 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, Lab Director/Quality Manager



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	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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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
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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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Analytical Results For:

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

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

Chloride	30800		16.0	mg/kg	4	6091507	AC	16-Sep-16	4500-Cl-B	
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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	
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Petroleum Hydrocarbons by 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	
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Surrogate: 1-Chlorooctadecane			34.9 %		28-171	6091504	MS	16-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
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**BH-1 2-3'
H602073-02 (Soil)**

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

Inorganic Compounds

Chloride	17600		16.0	mg/kg	4	6091507	AC	16-Sep-16	4500-Cl-B	
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Analytical Results For:

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

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

Inorganic Compounds

Chloride	2560		16.0	mg/kg	4	6091507	AC	16-Sep-16	4500-Cl-B	
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Analytical Results For:

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

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

Inorganic Compounds

Chloride	544		16.0	mg/kg	4	6091507	AC	16-Sep-16	4500-Cl-B	
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**BH-1 9-10'
H602073-05 (Soil)**

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

Inorganic Compounds

Chloride	80.0		16.0	mg/kg	4	6091507	AC	16-Sep-16	4500-Cl-B	
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Analytical Results For:

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**BH-1 14-15'
H602073-06 (Soil)**

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

Inorganic Compounds

Chloride	48.0		16.0	mg/kg	4	6091507	AC	16-Sep-16	4500-Cl-B	
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Analytical Results For:

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

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

Inorganic Compounds

Chloride	192		16.0	mg/kg	4	6091605	AC	16-Sep-16	4500-Cl-B	
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Analytical Results For:

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**BH-1 24-25'
H602073-08 (Soil)**

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

Inorganic Compounds

Chloride	144		16.0	mg/kg	4	6091605	AC	16-Sep-16	4500-Cl-B	
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**BH-1 29-30'
H602073-09 (Soil)**

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

Inorganic Compounds

Chloride	96.0		16.0	mg/kg	4	6091605	AC	16-Sep-16	4500-Cl-B	
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Analytical Results For:

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

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

Inorganic Compounds

Chloride	128		16.0	mg/kg	4	6091605	AC	16-Sep-16	4500-Cl-B	
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Analytical Results For:

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

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

Chloride	24400		16.0	mg/kg	4	6091605	AC	16-Sep-16	4500-Cl-B	
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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	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			99.8 %		73.6-140	6091601	MS	16-Sep-16	8021B	
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Petroleum Hydrocarbons by 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	
<i>Surrogate: 1-Chlorooctane</i>			89.8 %		35-147	6091504	MS	16-Sep-16	8015B	
<i>Surrogate: 1-Chlorooctadecane</i>			98.2 %		28-171	6091504	MS	16-Sep-16	8015B	

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Analytical Results For:

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

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

Inorganic Compounds

Chloride	22800		16.0	mg/kg	4	6091605	AC	16-Sep-16	4500-Cl-B	
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Analytical Results For:

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**BH-2 4-5'
H602073-13 (Soil)**

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

Inorganic Compounds

Chloride	8130		16.0	mg/kg	4	6091605	AC	16-Sep-16	4500-Cl-B	
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Analytical Results For:

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

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

Inorganic Compounds

Chloride	2560		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
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**BH-2 9-10'
H602073-15 (Soil)**

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

Inorganic Compounds

Chloride	672		16.0	mg/kg	4	6091605	AC	16-Sep-16	4500-Cl-B	
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**BH-2 14-15'
H602073-16 (Soil)**

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

Inorganic Compounds

Chloride	432		16.0	mg/kg	4	6091605	AC	16-Sep-16	4500-Cl-B	
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Analytical Results For:

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

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

Inorganic Compounds

Chloride	320		16.0	mg/kg	4	6091605	AC	16-Sep-16	4500-Cl-B	
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**BH-2 24-25'
H602073-18 (Soil)**

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

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

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

Inorganic Compounds

Chloride	144		16.0	mg/kg	4	6091605	AC	16-Sep-16	4500-Cl-B	
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Analytical Results For:

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

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

Inorganic Compounds

Chloride	9060		16.0	mg/kg	4	6091605	AC	16-Sep-16	4500-Cl-B	
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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	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			99.9 %		73.6-140	6091601	MS	16-Sep-16	8021B	
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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	
<i>Surrogate: 1-Chlorooctane</i>			91.9 %		35-147	6091901	MS	19-Sep-16	8015B	
<i>Surrogate: 1-Chlorooctadecane</i>			109 %		28-171	6091901	MS	19-Sep-16	8015B	

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Analytical Results For:

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

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

Inorganic Compounds

Chloride	7730		16.0	mg/kg	4	6091605	AC	16-Sep-16	4500-Cl-B	
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Analytical Results For:

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**BH-3 4-5'
H602073-22 (Soil)**

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

Inorganic Compounds

Chloride	832		16.0	mg/kg	4	6091605	AC	16-Sep-16	4500-Cl-B	
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Analytical Results For:

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

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

Inorganic Compounds

Chloride	880		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
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**BH-3 9-10'
H602073-24 (Soil)**

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

Inorganic Compounds

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 Project Manager: IKE TAVAREZ Fax To: NONE	Reported: 21-Sep-16 09:19
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**BH-3 14-15'
H602073-25 (Soil)**

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

Inorganic Compounds

Chloride	528		16.0	mg/kg	4	6091605	AC	16-Sep-16	4500-Cl-B	
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Analytical Results For:

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

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

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	Project: CLUSTER STATE COM #1H Project Number: 212C-MO-00605 Project Manager: IKE TAVAREZ Fax To: NONE	Reported: 21-Sep-16 09:19
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**BH-3 24-25'
H602073-27 (Soil)**

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

Inorganic Compounds

Chloride	288		16.0	mg/kg	4	6091606	AC	16-Sep-16	4500-Cl-B	
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Analytical Results For:

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

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

Inorganic Compounds

Chloride	128		16.0	mg/kg	4	6091606	AC	16-Sep-16	4500-Cl-B	
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Analytical Results For:

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

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

Inorganic Compounds

Chloride	13600		16.0	mg/kg	4	6091606	AC	16-Sep-16	4500-Cl-B	
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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	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			98.0 %		73.6-140	6091601	MS	16-Sep-16	8021B	
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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	
<i>Surrogate: 1-Chlorooctane</i>			85.5 %		35-147	6091901	MS	19-Sep-16	8015B	
<i>Surrogate: 1-Chlorooctadecane</i>			103 %		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
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**BH-4 2-3'
H602073-30 (Soil)**

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

Inorganic Compounds

Chloride	12000		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
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**BH-4 4-5'
H602073-31 (Soil)**

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

Inorganic Compounds

Chloride	176		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
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**BH-4 6-7'
H602073-32 (Soil)**

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

Inorganic Compounds

Chloride	160		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
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**BH-4 9-10'
H602073-33 (Soil)**

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

Inorganic Compounds

Chloride	288		16.0	mg/kg	4	6091606	AC	16-Sep-16	4500-Cl-B	
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Analytical Results For:

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

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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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
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**BH-5 0-1'
H602073-35 (Soil)**

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

Inorganic Compounds

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

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			98.8 %		73.6-140	6091601	MS	16-Sep-16	8021B	
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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	
<i>Surrogate: 1-Chlorooctane</i>			89.1 %		35-147	6091901	MS	19-Sep-16	8015B	
<i>Surrogate: 1-Chlorooctadecane</i>			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
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**BH-5 2-3'
H602073-36 (Soil)**

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

Inorganic Compounds

Chloride	288		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
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**BH-5 4-5'
H602073-37 (Soil)**

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

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

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

Inorganic Compounds

Chloride	144		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
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**BH-5 9-10'
H602073-39 (Soil)**

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

Inorganic Compounds

Chloride	96.0		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	Reported: 21-Sep-16 09:19
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**BH-5 14-15'
H602073-40 (Soil)**

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

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

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

Inorganic Compounds

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

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Analytical Results For:

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

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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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	Project: CLUSTER STATE COM #1H Project Number: 212C-MO-00605 Project Manager: IKE TAVAREZ Fax To: NONE	Reported: 21-Sep-16 09:19
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**BH-6 4-5'
H602073-43 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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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	Project: CLUSTER STATE COM #1H Project Number: 212C-MO-00605 Project Manager: IKE TAVAREZ Fax To: NONE	Reported: 21-Sep-16 09:19
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**BH-6 6-7'
H602073-44 (Soil)**

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

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	Reported: 21-Sep-16 09:19
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**BH-6 9-10'
H602073-45 (Soil)**

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

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:

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**BH-6 14-15'
H602073-46 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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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	Project: CLUSTER STATE COM #1H Project Number: 212C-MO-00605 Project Manager: IKE TAVAREZ Fax To: NONE	Reported: 21-Sep-16 09:19
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**BH-7 0-1'
H602073-47 (Soil)**

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

Inorganic Compounds

Chloride	64.0		16.0	mg/kg	4	6091607	AC	16-Sep-16	4500-Cl-B	
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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	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			99.4 %	73.6-140		6091906	MS	20-Sep-16	8021B	
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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	
<i>Surrogate: 1-Chlorooctane</i>			93.4 %	35-147		6091901	MS	19-Sep-16	8015B	
<i>Surrogate: 1-Chlorooctadecane</i>			113 %	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
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**BH-7 2-3'
H602073-48 (Soil)**

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

Inorganic Compounds

Chloride	64.0		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
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**BH-7 4-5'
H602073-49 (Soil)**

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

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

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

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

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

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:

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

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

Inorganic Compounds

Chloride	<16.0		16.0	mg/kg	4	6091607	AC	16-Sep-16	4500-Cl-B	
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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 (PID)			99.6 %	73.6-140		6091906	MS	20-Sep-16	8021B	
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Petroleum Hydrocarbons by 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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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
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**BH-8 2-3'
H602073-53 (Soil)**

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

Inorganic Compounds

Chloride	<16.0		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
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**BH-8 4-5'
H602073-54 (Soil)**

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

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

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

Inorganic Compounds

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 Project Manager: IKE TAVAREZ Fax To: NONE	Reported: 21-Sep-16 09:19
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**BH-8 9-10'
H602073-56 (Soil)**

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

Inorganic Compounds

Chloride	80.0		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
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**AH-1 0-1'
H602073-57 (Soil)**

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

Inorganic Compounds

Chloride	928		16.0	mg/kg	4	6091607	AC	16-Sep-16	4500-Cl-B	
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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	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			99.5 %		73.6-140	6091906	MS	20-Sep-16	8021B	
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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	
<i>Surrogate: 1-Chlorooctane</i>			88.2 %		35-147	6091901	MS	19-Sep-16	8015B	
<i>Surrogate: 1-Chlorooctadecane</i>			103 %		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
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**AH-1 1-1.5'
H602073-58 (Soil)**

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

Inorganic Compounds

Chloride	11600		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
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**AH-1 2-2.5'
H602073-59 (Soil)**

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

Inorganic Compounds

Chloride	12000		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
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**AH-1 3-3.5'
H602073-60 (Soil)**

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

Inorganic Compounds

Chloride	15200		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
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**AH-1 4-4.5'
H602073-61 (Soil)**

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

Inorganic Compounds

Chloride	3680		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
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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	
Duplicate (6091507-DUP1)										
		Source: H602070-04			Prepared & Analyzed: 15-Sep-16					
Chloride	352	16.0	mg/kg		352			0.00	20	
Matrix Spike (6091507-MS1)										
		Source: 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	
Duplicate (6091605-DUP1)										
		Source: H602073-07			Prepared & Analyzed: 16-Sep-16					
Chloride	224	16.0	mg/kg		192			15.4	20	

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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
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Inorganic Compounds - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 6091605 - 1:4 DI Water

Matrix Spike (6091605-MS1)	Source: 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)	Source: H602073-28		Prepared & Analyzed: 16-Sep-16							
Chloride	144	16.0	mg/kg		128			11.8	20	

Matrix Spike (6091606-MS1)	Source: 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 Project Manager: IKE TAVAREZ Fax To: NONE	Reported: 21-Sep-16 09:19
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Inorganic Compounds - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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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: H602073-48 Prepared & Analyzed: 16-Sep-16						
Chloride	64.0	16.0	mg/kg		64.0			0.00	20	
Matrix Spike (6091607-MS1)				Source: H602073-48 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
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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
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Batch 6091601 - Volatiles

Blank (6091601-BLK1)

Prepared & Analyzed: 16-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		98.6	73.6-140			

LCS (6091601-BS1)

Prepared & Analyzed: 16-Sep-16

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

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)

Source: H602075-01

Prepared & Analyzed: 16-Sep-16

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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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
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Batch 6091601 - Volatiles**Matrix Spike Dup (6091601-MSD1)**

Source: H602075-01

Prepared & Analyzed: 16-Sep-16

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: 19-Sep-16 Analyzed: 20-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: 19-Sep-16 Analyzed: 20-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: 19-Sep-16 Analyzed: 20-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	
Total Xylenes	5.97	0.150	mg/kg	6.00		99.4	73.8-125	5.01	8.66	
Surrogate: 4-Bromofluorobenzene (PID)	0.0493		mg/kg	0.0500		98.6	73.6-140			

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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
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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
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Batch 6091906 - Volatiles

Matrix Spike (6091906-MS1)	Source: H602073-47			Prepared: 19-Sep-16 Analyzed: 20-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)	Source: H602073-47			Prepared: 19-Sep-16 Analyzed: 20-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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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
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Petroleum Hydrocarbons by GC FID - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 6091504 - General Prep - Organics

Blank (6091504-BLK1)		Prepared: 15-Sep-16 Analyzed: 16-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	48.3		mg/kg	50.0		96.7	35-147			
Surrogate: 1-Chlorooctadecane	54.2		mg/kg	50.0		108	28-171			

LCS (6091504-BS1)		Prepared: 15-Sep-16 Analyzed: 16-Sep-16								
GRO C6-C10	182	10.0	mg/kg	200		91.0	76.7-115			
DRO >C10-C28	192	10.0	mg/kg	200		95.8	78.3-122			
Total TPH C6-C28	374	10.0	mg/kg	400		93.4	79.8-117			
Surrogate: 1-Chlorooctane	52.8		mg/kg	50.0		106	35-147			
Surrogate: 1-Chlorooctadecane	53.3		mg/kg	50.0		107	28-171			

LCS Dup (6091504-BSD1)		Prepared: 15-Sep-16 Analyzed: 16-Sep-16								
GRO C6-C10	192	10.0	mg/kg	200		96.0	76.7-115	5.31	9.42	
DRO >C10-C28	207	10.0	mg/kg	200		104	78.3-122	7.89	13.2	
Total TPH C6-C28	399	10.0	mg/kg	400		99.8	79.8-117	6.64	10.7	
Surrogate: 1-Chlorooctane	55.9		mg/kg	50.0		112	35-147			
Surrogate: 1-Chlorooctadecane	57.0		mg/kg	50.0		114	28-171			

Matrix Spike (6091504-MS1)		Source: H602055-04		Prepared: 15-Sep-16 Analyzed: 16-Sep-16						
GRO C6-C10	170	50.0	mg/kg	200	25.0	72.3	66.4-123			
DRO >C10-C28	4540	50.0	mg/kg	200	4710	NR	67.6-126			QM-07
Total TPH C6-C28	4710	50.0	mg/kg	400	4730	NR	60.8-134			QM-07
Surrogate: 1-Chlorooctane	49.0		mg/kg	50.0		98.0	35-147			
Surrogate: 1-Chlorooctadecane	95.1		mg/kg	50.0		190	28-171			S-06

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Celey D. Keene, Lab Director/Quality Manager



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	Reported: 21-Sep-16 09:19
--	---	------------------------------

Petroleum Hydrocarbons by GC FID - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 6091504 - General Prep - Organics

Matrix Spike Dup (6091504-MSD1)	Source: H602055-04			Prepared: 15-Sep-16 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
DRO >C10-C28	4760	50.0	mg/kg	200	4710	25.1	67.6-126	NR	11.6	QM-07
Total TPH C6-C28	4890	50.0	mg/kg	400	4730	38.1	60.8-134	NR	9.02	QM-07, QR-03
Surrogate: 1-Chlorooctane	50.9		mg/kg	50.0		102	35-147			
Surrogate: 1-Chlorooctadecane	94.4		mg/kg	50.0		189	28-171			S-06

Batch 6091901 - General Prep - Organics

Blank (6091901-BLK1)	Prepared & Analyzed: 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 & Analyzed: 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 & Analyzed: 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	
Total TPH C6-C28	424	10.0	mg/kg	400		106	79.8-117	2.61	10.7	
Surrogate: 1-Chlorooctane	51.7		mg/kg	50.0		103	35-147			
Surrogate: 1-Chlorooctadecane	56.9		mg/kg	50.0		114	28-171			

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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
--	---	------------------------------

Petroleum Hydrocarbons by GC FID - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 6091901 - General Prep - Organics

Matrix Spike (6091901-MS1)	Source: H602073-20			Prepared & Analyzed: 19-Sep-16						
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: H602073-20			Prepared & Analyzed: 19-Sep-16						
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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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

Celey D. Keene, Lab Director/Quality Manager

Analysis Request of Chain of Custody Record



TETRA TECH
 1910 N. Big Spring St.
 Midland, Texas 79705
 (432) 682-4559 • Fax (432) 682-3946

CLIENT NAME: **HPG**

PROJECT NO.: **212-MD-0005**

SITE MANAGER: **IKO TAYLOR**

PROJECT NAME: **Cluster State Com #1H**

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION
41	9/14		S	X		BH-6 0-1
42						2-3
43						4-5
44						6-7
45						9-10
46						14-15
47	9/15					BH-7 0-1
48						2-3
49						4-5
50						6-7

NUMBER OF CONTAINERS	FILTERED (Y/N)	HCL	HNO3	ICE	NONE
				X	
				X	
				X	
				X	
				X	
				X	
				X	
				X	
				X	
				X	

PRESERVATIVE METHOD	ANALYSIS REQUEST (Circle or Specify Method No.)
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	
TCLP Semi Volatiles	
RCI	
GC.MS Vol. 8240/8260/624	
GC.MS Semi. Vol. 8270/625	
PCB's 8080/608	
Pest. 808/608	
Chloride	
Gamma Spec.	
Alpha Beta (Air)	
PLM (Asbestos)	
Major Anions/Cations, pH, TDS	

PAGE: 5 OF: 7

RELINQUISHED BY: (Signature) **[Signature]** Date: **9/15/16** Time: **1358**

RELINQUISHED BY: (Signature) **[Signature]** Date: **9/15/16** Time: **1358**

RECEIVED BY: (Signature) **[Signature]** Date: **9/15/16** Time: **1358**

RECEIVED BY: (Signature) **[Signature]** Date: **9/15/16** Time: **1358**

RECEIVING LABORATORY: _____ STATE: _____ PHONE: _____ ZIP: _____ DATE: _____

ADDRESS: _____ CITY: _____

CONTACT: _____

SAMPLE CONDITION WHEN RECEIVED: **2.30c #75**

REMARKS: _____

SAMPLED BY: (Print & Initial) **[Signature]** Date: **9/15/16** Time: **1358**

SAMPLE SHIPPED BY: (Circle) **FEDEX** Date: _____ Time: _____

HAND DELIVERED **UPS** Date: _____ Time: _____

TETRA TECH CONTACT PERSON: **Joanne Fitch**

AIRBILL #: _____ Date: **9/15/16** Time: **1358**

OTHER: _____ Results by: _____

RUSH Charges Authorized: _____ Yes/No

Please fill out all copies - Laboratory retains Yellow copy - Return Original copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

Analysis Request of Chain of Custody Record



TETRA TECH

1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

HL002073

CLIENT NAME: **CDG** SITE MANAGER: **Ko Tavaroz**

PROJECT NO.: **22CND-0005** PROJECT NAME: **Cluster State Com #11H**

LAB I.D. NUMBER: **101 915** DATE: **2016** TIME: **9:15** MATRIX: **COMP. GRAB** SAMPLE IDENTIFICATION: **AT-1 4-4.5**

NUMBER OF CONTAINERS: _____
 FILTERED (Y/N): _____
 PRESERVATIVE METHOD: **HCL** **HNO3** **ICE** **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
- TCLP Semi Volatiles
- RCI
- GC.MS Vol. 8240/8260/624
- GC.MS Semi. Vol. 8270/625
- PCB's 8080/608
- Pest. 808/608
- Chloride
- Gamma Spec.
- Alpha Beta (Air)
- PLM (Asbestos)
- Major Anions/Cations, pH, TDS

PAGE: **7** OF: **7**
 ANALYSIS REQUEST
 (Circle or Specify Method No.)

RELINQUISHED BY: (Signature) **[Signature]** Date: **9/15/16** Time: **1:50**
 RECEIVED BY: (Signature) **[Signature]** Date: **9/15/16** Time: **11:00**

RELINQUISHED BY: (Signature) _____ Date: _____ Time: _____
 RECEIVED BY: (Signature) _____ Date: _____ Time: _____

RELINQUISHED BY: (Signature) _____ Date: _____ Time: _____
 RECEIVED BY: (Signature) _____ Date: _____ Time: _____

RECEIVING LABORATORY: _____ STATE: _____ ZIP: _____
 ADDRESS: _____ CITY: _____ PHONE: _____ DATE: _____ TIME: _____
 CONTACT: _____

SAMPLE BY: (Print & Initial) **[Signature]** Date: **9/15/16** Time: **9:15**

SAMPLE SHIPPED BY: (Circle) **FEDEX** AIRBILL #: _____
HAND DELIVERED UPS OTHER: _____
 TETRA TECH CONTACT PERSON: **Deanne Fitch** Results by: _____

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: **2.36 #74** REMARKS: _____

Please fill out all copies - Laboratory retains Yellow copy - Return Original copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

Analytical Report 537439

for
Tetra Tech- Midland

Project Manager: Ike Tavaréz

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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Explanation of Qualifiers (Flags)	8
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Chain of Custody	11
Sample Receipt Conformance Report	12



30-SEP-16

Project Manager: **Ike Tavaréz**

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 Tavaréz:

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

Project Manager

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Sample Cross Reference 537439

Tetra Tech- Midland, Midland, TX

Cluster State Com #1 H

Sample Id	Matrix	Date Collected	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
Work Order Number(s): 537439

Report Date: 30-SEP-16
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 Tavaréz

Project Location: Eddy Co NM

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

Report Date: 30-SEP-16

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	537439-001	537439-002	537439-003	537439-004	537439-005	537439-006
	<i>Field Id:</i>	AH-1	AH-1	AH-1	AH-1	AH-1	AH-1
	<i>Depth:</i>	0-1	1-1.5	2-2.5	3-3.5	4-4.5	5-5.5
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Sep-22-16 00:00					
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	Sep-30-16 09:00					
	<i>Analyzed:</i>	Sep-30-16 11:19	Sep-30-16 11:40	Sep-30-16 11:47	Sep-30-16 11:54	Sep-30-16 12:01	Sep-30-16 12:22
	<i>Units/RL:</i>	mg/kg RL					
Chloride		4120 50.0	9480 100	10800 100	12600 250	3040 50.0	665 50.0

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

Kelsey Brooks
Project Manager



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 Tavaréz

Project Location: Eddy Co NM

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

Report Date: 30-SEP-16

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	537439-007	537439-008				
	Field Id:	AH-1	AH-1				
	Depth:	6-6.5	7-7.5				
	Matrix:	SOIL	SOIL				
	Sampled:	Sep-22-16 00:00	Sep-22-16 00:00				
Inorganic Anions by EPA 300/300.1	Extracted:	Sep-30-16 09:00	Sep-30-16 09:00				
	Analyzed:	Sep-30-16 12:29	Sep-30-16 12:36				
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		373 50.0	37.8 5.00				

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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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(281) 240-4200	(281) 240-4280
(214) 902 0300	(214) 351-9139
(210) 509-3334	(210) 509-3335
(432) 563-1800	(432) 563-1713
(602) 437-0330	



BS / BSD Recoveries

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: 3001120

Sample: 714399-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
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



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 #: 1 **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: 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	4120	2500	6760	106	2500	6650	101	2	90-110	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*(C-F)/(C+F)

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

537439

Analysis Request of Chain of Custody Record



TETRA TECH
 1910 N. Big Spring St.
 Midland, Texas 79705
 (432) 682-4559 • Fax (432) 682-3946

CLIENT NAME: COG		SITE MANAGER: Mike Tavares	
PROJECT NO.: 212C-MO-00005-D7		PROJECT NAME: Cluster State Comm H	
LAB I.D. NUMBER	DATE	TIME	SAMPLE IDENTIFICATION
	2016		Eddy Co NM
	9/12		AH-1 0-1
			1-1.5
			2-2.5
			3-3.5
			4-4.5
			5-5.5
			6-6.5
			7-7.5

REQUISITIONED BY: (Signature) <i>[Signature]</i>	Date: 9/12/16	Time: 11:55	RECEIVED BY: (Signature) <i>[Signature]</i>	Date: 9/12/16	Time: 11:55
RELINQUISHED BY: (Signature)	Date:	Time:	RECEIVED BY: (Signature)	Date:	Time:
RELINQUISHED BY: (Signature)	Date:	Time:	RECEIVED BY: (Signature)	Date:	Time:
RECEIVING LABORATORY: ADDRESS: CITY: CONTACT:	STATE:	ZIP:	PHONE:	DATE:	TIME:

ANALYSIS REQUEST (Circle or Specify Method No.)	DATE: 9/12/16
Major Anions/Cations, pH, TDS	
PLM (Asbestos)	
Alpha Beta (Air)	
Gamma Spec.	
Chloride	X
Pest. 808/608	X
PCB's 8080/608	X
GC/MS Semi. Vol. 8270/625	X
GC/MS Vol. 8240/8260/624	X
RCI	X
TCLP Semi Volatiles	X
TCLP Volatiles	X
TCLP Metals Ag As Ba Cd Cr Pb Hg Se	X
RCRA Metals Ag As Ba Cd Cr Pb Hg Se	X
PAH 8270	X
TPH 8015 MOD. TX1005 (Ext. to C35)	X
BTEX 8021B	X

PRELIMINARY	DATE: 9/12/16
NUMBER OF CONTAINERS	1
ICF	X
HNO3	X
HCL	X
DATE: 9/12/16	TIME: 11:55

SAMPLED BY: (Print & Initial)	DATE: 9/12/16
SAMPLE SHIPPED BY: (Circle)	TIME: 11:55
FEDEX	
HAND DELIVERED	
UPS	
TETRA TECH CONTACT PERSON:	
RESULTS BY:	
RUSH Charges Authorized:	Yes No

Please fill out all copies - Laboratory retains Yellow copy - Return Original copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech- Midland

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

Work Order #: 537439

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	2.3
#2 *Shipping container in good condition?	N/A
#3 *Samples received on ice?	Yes
#4 *Custody Seal present on shipping container/ cooler?	N/A
#5 *Custody Seals intact on shipping container/ cooler?	N/A
#6 Custody Seals intact on sample bottles?	N/A
#7 *Custody Seals Signed and dated?	N/A
#8 *Chain of Custody present?	Yes
#9 Sample instructions complete on Chain of Custody?	Yes
#10 Any missing/extra samples?	No
#11 Chain of Custody signed when relinquished/ received?	Yes
#12 Chain of Custody agrees with sample label(s)?	Yes
#13 Container label(s) legible and intact?	Yes
#14 Sample matrix/ properties agree with 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 indicated test(s)?	Yes
#19 All samples received within hold time?	Yes
#20 Subcontract of sample(s)?	N/A
#21 VOC samples have zero headspace (less than 1/4 inch bubble)?	N/A
#22 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	N/A
#23 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by: Jessica Kramer
Jessica Kramer

Date: 09/23/2016

Checklist reviewed by: Kelsey Brooks
Kelsey Brooks

Date: 09/23/2016

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

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

Form C-141
Revised August 8, 2011

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

Release Notification and Corrective Action

OPERATOR Initial Report Final Report

Name of Company:	COG Operating LLC	Contact:	Robert McNeill
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
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LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	16	26S	27E	380'	North	330'	West	Eddy

Latitude 32.0486679 Longitude 104.2026672

NATURE OF RELEASE

Type of Release:	Produced Water	Volume of Release:	10bbls of Produced Water	Volume Recovered:	0bbls of Produced Water
Source of Release:	Flowline	Date and Hour of Occurrence:	08/03/2016 10:30 am	Date and Hour of Discovery:	08/03/2016 10:30 am
Was Immediate Notice Given?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?			
By Whom?		Date and Hour:			
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
A polyline was damaged by a vehicle or road equipment. Replaced damaged section of line.

Describe Area Affected and Cleanup Action Taken.*
This release occurred on a 4" polyline on the side of the road. A spill area of 200'X1'. Concho will have the spill site sampled to delineate any possible contamination from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation work.

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

Signature:		OIL CONSERVATION DIVISION		
Printed Name:	Robert Grubbs Jr.	Approved by Environmental Specialist:		
Title:	Senior Environmental Coordinator	Approval Date:	Expiration Date:	
E-mail Address:	rgrubbs@concho.com	Conditions of Approval:		Attached <input type="checkbox"/>
Date:	August 4, 2016	Phone:	432-683-7443	

Attach Additional Sheets If Necessary

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
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Release Notification and Corrective Action

OPERATOR Initial Report Final Report

Name of Company:	COG Operating LLC	Contact:	Robert McNeill
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
----------------	-------	----------------	---------	--------------

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	16	26S	27E	380'	North	330'	West	Eddy

Latitude 32.0486679 Longitude 104.2026672

NATURE OF RELEASE

Type of Release:	Produced Water	Volume of Release:	10bbls of Produced water	Volume Recovered:	0bbls of Produced water
Source of Release:	Poly Flowline	Date and Hour of Occurrence:	07-16-2016 09:00am	Date and Hour of Discovery:	07-16-2016 09:00am
Was Immediate Notice Given?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?			
By Whom?		Date and Hour:			
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
Polyline failure. Cut out bad section of line and refuse the poly line back together.

Describe Area Affected and Cleanup Action Taken.*
This spill affected an area of 2' x 100' and 12' x 10' in the pasture, Concho will have the spill site sampled to delineate any possible contamination from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation work.

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

Signature:		OIL CONSERVATION DIVISION		
Printed Name:	Robert Grubbs Jr.	Approved by Environmental Specialist:		
Title:	Senior Environmental Coordinator	Approval Date:	Expiration Date:	
E-mail Address:	rgrubbs@concho.com	Conditions of Approval:		Attached <input type="checkbox"/>
Date:	July 19, 2016	Phone:	432-683-7443	

Attach Additional Sheets If Necessary

District I
1625 N. French Dr., Hobbs, NM 88240
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Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

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Release Notification and Corrective Action

OPERATOR

Initial Report Final Report

Name of Company: COG Operating LLC	Contact: Robert McNeill
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	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	16	26S	27E	380'	North	330'	West	Eddy

Latitude 32.0486679 Longitude 104.2026672

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release: 10bbls of Produced Water	Volume Recovered: 0bbls of Produced Water
Source of Release: Flowline	Date and Hour of Occurrence: 08/03/2016 10:30 am	Date and Hour of Discovery: 08/03/2016 10:30 am
Was Immediate Notice Given? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour:	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	
If a Watercourse was Impacted, Describe Fully.*		
Describe Cause of Problem and Remedial Action Taken.* A polyline was damaged by a vehicle or road equipment. Replaced damaged section of line.		
Describe Area Affected and Cleanup Action Taken.* This release occurred on a 4" polyline on the side of the road. A spill area of 200'X1'. 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.		
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.		
Signature: 	OIL CONSERVATION DIVISION	
Printed Name: Dakota Neel	Approved by Environmental Specialist: 	
Title: HSE Coordinator	Approval Date: 12/06/2022	Expiration Date:
E-mail Address: dneel2@concho.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: December 19, 2017 Phone: 575-746-2010		

* Attach Additional Sheets If Necessary

District I
1625 N. French Dr., Hobbs, NM 88240
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Release Notification and Corrective Action

OPERATOR

Initial Report Final Report

Name of Company: COG Operating LLC	Contact: Robert McNeill
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	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
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Latitude 32.0486679 Longitude 104.2026672

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release: 10bbls of Produced water	Volume Recovered: 0bbls of Produced water
Source of Release: Poly Flowline	Date and Hour of Occurrence: 07-16-2016 09:00am	Date and Hour of Discovery: 07-16-2016 09:00am
Was Immediate Notice Given? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour:	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	
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Signature: 	OIL CONSERVATION DIVISION	
Printed Name: Dakota Neel	Approved by Environmental Specialist: 	
Title: HSE Coordinator	Approval Date: 12/06/2022	Expiration Date:
E-mail Address: dneel2@concho.com	Conditions of Approval:	
Date: December 19, 2017 Phone: 575-746-2010	Attached <input type="checkbox"/>	

* 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

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

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

CONDITIONS

Action 164521

CONDITIONS

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

CONDITIONS

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