



COG (ConocoPhillips)

2024 Soil Deferral Request Report

GC Federal #27 TB

Incident # nOY1802648272

April 2024

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GC Fed #27 Soil Deferral Request Rpt_Final_042624

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1 Introduction

Arcadis U.S., Inc. (Arcadis) has prepared this Soil Deferral Request Report (Report), on behalf of Concho Operating, LLC (COG – now ConocoPhillips), for the release site known as the GC Federal #27 Tank Battery (Site). Details of the release are summarized in the Initial C-141 Form included as **Appendix A**.

2 Project Summary

The Site is located approximately 12 miles east of Loco Hills in Unit N, Section 20, Township 17 South, Range 32 East, Lea County, New Mexico at coordinates 32.8155738, -103.789845. A Site Location Map is included as **Figure 1**.

2.1 Incident # nOY1802648272

According to the Initial C-141 Form, on January 20, 2018, a tank overflow was discovered at the Site as a result of a transducer malfunction that caused the tank gauge to read incorrectly. The leak resulted in the release of approximately 80 barrels (bbls) of produced water and 0.25 bbls of oil to the ground surface at the Site. A vacuum truck recovered approximately 78 bbls of produced water and 0 bbls of oil. The release occurred in a lined facility. The Initial C-141 Form was submitted to the New Mexico Oil Conservation Division (NMOCD) on November 8, 2021, and assigned Incident ID number NAPP2130843614. The Initial C-141 Form is included as **Appendix A**.

3 Site Characterization

3.1 Initial Site Characterization

After a review of the New Mexico Office of State Engineers (NMOSE) and USGS databases, there are no known water sources within a 0.5-mile radius of the Site. A water well was located approximately 0.99 miles southeast of the site with a depth to water of 81 feet below ground surface (bgs). As such, assessment activities completed to date at the Site have been evaluated assuming a Site with a depth to groundwater as less than 50 feet bgs. The following site characteristics were determined in accordance with 19.15.29 New Mexico Administrative Code (NMAC):

What is the minimum distance, between the closest lateral extents of the release and the following surface areas:

- A continuously flowing watercourse or any other significant watercourse: Between 1 and 5 miles
- Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark): Between 1/2 and 1 mile
- An occupied permanent residence, school, hospital, institution, or church: Between 1 and 5 miles
- A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes: Between 1 and 5 miles
- Any other fresh water well or spring: Between 1 and 5 miles
- Incorporated municipal boundaries or a defined municipal fresh water well field: >5 miles
- A wetland: Between 1 and 5 miles

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- A subsurface mine: Between 1 and 5 miles
- A (non-karst) unstable area: >5 miles
- Categorize the risk of this well/site being in Karst Geology: Low
- A 100-year floodplain: Between 1 and 5 miles
- Did the release impact areas not on an exploration, development, production, or storage site? No

The site characterization data is presented in **Appendix B**.

3.2 COG Assessment Activities

Soil assessment activities were performed at the Site during March 2018 by COG, LLC (NTGE) to determine the horizontal and lateral extent of the release area. Four sample locations were assessed inside the impacted area ranging from (0-5 feet below ground surface (bgs)). Upon review, AH-1 (0-1') and AH-2 (0-1') exceeded the closure criteria Per Table I of New Mexico Administrative Code (NMAC) part 19.15.29.12 for a site with groundwater less than 50 feet bgs with a chloride concentration of 27,300 milligrams per kilogram (mg/kg) at AH-1 (surface sample) and a total petroleum hydrocarbon (TPH) concentration of 14,769 mg/kg at AH-2 (surface sample). The chloride and TPH concentrations were reported below the closure criteria listed by the NMOCD at a depth of 1-foot bgs. The assessment activities and associated analytical soil sample results for the impacted areas are detailed in the "Deferment Report" submitted previously by COG to the NMOCD (see **Appendix C**) on November 7, 2018. All vertical delineation and assessment analytical results from those activities are provided in **Table 1**.

On April 10, 2023 the NMOCD rejected the COG deferral request stating horizontal delineation is needed to ensure the release did not extend to areas that are not reasonably needed for production operations.

3.3 Subsequent Assessment Activities

Per NMOCD request, Arcadis conducted additional assessment activities inclusive of installation of horizontal delineation borings on October 10, 2023. Four (4) soil samples were collected with a hand auger outside the impacted area to the north, south, east, and west of previously sampled area (refer to **Figure 2**). Photographic documentation of the assessment activities is contained in the **2023 Soil Assessment Photographic Log**.

4 Closure Criteria for Soils Impacted by a Release

Per Table I of New Mexico Administrative Code (NMAC) part 19.15.29.12, the following closure criteria apply to a Site with depth to ground water less than 50 feet bgs and no documented water wells within ½ mile of the site:

Constituent	Limit (mg/kg)
Chloride	600 mg/kg
TPH (GRO+DRO+MRO)	100 mg/kg
BTEX (total)	50 mg/kg
Benzene	10 mg/kg

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4.1 Chloride

All soil samples collected (S-1 through S-4) within the subsequently assessed areas were reported below the NMAC reclamation limit of 600 mg/kg for chloride.

4.2 TPH

Total petroleum hydrocarbons (total TPH -gasoline range organics [GRO] + diesel range organics [DRO]+ motor oil range organics [MRO]) were not reported in soil at concentrations above laboratory detection limits and/or the NMAC screening standard of 100 mg/kg within the horizontal delineation samples collected.

4.3 BTEX

Benzene and total BTEX soil concentrations were reported below the NMAC standards of 10 mg/kg and 50 mg/kg respectively at all horizontal delineation sample locations.

All horizontal delineation soil samples collected were reported with analytical concentrations below the NMAC reclamation limits for chloride, total TPH (GRO, DRO and MRO), total BTEX, and benzene for a site with groundwater less than 50 feet bgs. For reference, analytical soil sample results from the subsequent horizontal delineation activities are summarized in **Table 2**.

5 Summary

Analytical results associated with recent assessment activities conducted in 2018 and 2023 indicate that the horizontal and vertical extent of chloride, TPH, and BTEX impact in soil above NMAC Closure Criteria for a site with depth the groundwater less than 50 feet bgs have been delineated as requested by the NMOCD both horizontally and vertically. All impacted areas are shown to be contained inside of an active lined tank battery necessary for production operations.

6 Deferral Request

Assessment activities were conducted in accordance with the NMOCD stipulations for accessible impacted areas at the Site. Laboratory analytical results from soil samples collected confirm horizontal and vertical delineation of concentrations of BTEX, TPH and chloride below the applicable NMOCD Closure Criteria.

Impacted soil currently remains in-situ near the historical AH-1, AH-2, AH-3, and AH-4 sampling locations inside the tank battery within the bermed area on the pad. Analytical results for soil samples collected indicate that impact to soil is confined to soils only within the bermed area necessary for production operations. The remaining in-situ impacted area is horizontally and vertically delineated and excavation activities within the bermed area would pose a safety risk and require major facility deconstruction. Leaving the remaining impacted soil in-situ is not believed a risk to human health, the environment, or ground water.

As such, a deferral request for additional remediation of in-situ soil impacts measuring approximately 100 feet by 20 feet within the bermed and lined area of the tank battery is requested at this time. Approximately 2,000 square

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feet and 148 cubic yards will be remediated during site restoration activities that will be conducted following abandonment of this facility at a future date in accordance with Sections 19.15.29.12 and 19.15.29.13 NMAC

The lease is currently owned by Spur Energy Partners, LLC (Spur Energy). Correspondence between Spur Energy and COG (now ConocoPhillips) documenting acceptance by Spur Energy as the current operator to allow deferral until facility abandonment and reclamation in conjunction with discussions with the NMOCD is displayed in **Appendix E**

Based upon the findings presented in this report, no additional soil assessment activities are recommended at this time to further delineate the BTEX, TPH, and chloride impacts in soil at the Site. As such, Arcadis, on behalf of ConocoPhillips, respectfully requests deferral of Incident number nOY1802648272 until the facility is abandoned and site reclamation activities are conducted.

Tables

Table 1

COG Operating LLC.
GC Federal #27
Eddy County, New Mexico

Sample ID	Sample Depth (ft)	Sample Date	Soil Status		TPH (mg/kg)							Benzene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	GRO	DRO	Ext DRO	Total	GRO	DRO	Total			
Average Depth to Groundwater (ft) >100 feet														
NMOCD RAL Limits (mg/kg)					-	-	-	2,500	-	-	1,000	10	50	20,000
AH-1	0	3/21/2018	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.300	27,300
AH-1	1	3/21/2018	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.300	387
AH-1	2	3/21/2018	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.300	-
AH-1	3	3/21/2018	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.300	-
AH-1	4	3/21/2018	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.300	-
AH-1	5	3/21/2018	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.300	-
AH-2	0	3/21/2018	X		839	11800	2130	14,769	839	11800	12,639	<0.200	27.8	1,080
AH-2	1	3/21/2018	X		23.2	188	24.1	235.3	23.2	188	211.2	<0.050	1.12	48.7
AH-2	2	3/21/2018	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.300	-
AH-2	3	3/21/2018	X		<10.0	83.3	<10.0	83.3	<10.0	83.3	83.3	<0.050	<0.300	-
AH-2	4	3/21/2018	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.300	-
AH-2	5	3/21/2018	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.300	-
AH-3	0	3/21/2018	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.300	11,500
AH-3	1	3/21/2018	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.300	111
AH-3	2	3/21/2018	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.300	-
AH-3	3	3/21/2018	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.300	-
AH-3	4	3/21/2018	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.300	-
AH-3	5	3/21/2018	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.300	-
AH-4	0	3/21/2018	X		<10.0	536	237	773	<10.0	536	536	<0.050	<0.300	6,250
AH-4	1	3/21/2018	X		<10.0	20.5	<10.0	20.5	<10.0	20.5	20.5	<0.050	<0.300	23.0
AH-4	2	3/21/2018	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.300	-
AH-4	3	3/21/2018	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.300	-
AH-4	4	3/21/2018	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.300	-
AH-4	5	3/21/2018	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.300	-

 Proposed Excavation Depth

(-) Not Analyzed



Table 2
2023 Soil Analytical Results
GC Federal #27 TB
COG (ConocoPhillips)

Sample ID	Date	Depth (Feet)	BTEX Methods							TPH Methods			CI Method	
			Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	m-Xylene & p-Xylene (mg/kg)	o-Xylene (mg/kg)	Xylenes, Total (mg/kg)	Total BTEX (mg/kg)	GRO C6-C10 (mg/kg)	DRO C10-C28 (mg/kg)	ORO C28-C36 (mg/kg)	Total TPH (mg/kg)	Chloride, Dissolved (mg/kg)
S-1-101023	10/10/2023	0-1	<0.000387	<0.000459	<0.000568	<0.00102	<0.000346	<0.00102	<0.00102	18.2J	<15.1	<15.1	18.2J	110
S-2-101023	10/10/2023	0-1	0.000674J	<0.000457	<0.000566	<0.00101	<0.000345	<0.00101	<0.00101	18.2J	<14.9	<14.9	18.2J	261
S-3-101023	10/10/2023	0-1	<0.000384	<0.000455	<0.000564	<0.00101	<0.000343	<0.00101	<0.00101	16.0J	22.2J	<14.9	38.2J	86.9
S-4-101023	10/10/2023	0-1	<0.000384	<0.000455	<0.000564	<0.00101	<0.000343	<0.00101	<0.00101	16.3J	17.1J	<14.9	33.4J	72.7
OCD Reclamation Stand			10	--	--	--	--	--	50	--	--	--	100	600
NMOCD Closure Criteria			10	--	--	--	--	--	50	--	--	--	2,500	10,000

Legend:

Analytes exceeding NMAC standards are indicated in **bold**

J: Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value

'<' indicates the analyte was not detected at or above the Method Detection Limit (MDL)

mg/kg: Milligram per Kilogram

BTEX : Benzene, Toluene, Ethylbenzene, and Total Xylenes

NMAC : New Mexico Administration Code

TPH GRO: Total Petroleum Hydrocarbons Gasoline Range Organics

TPH DRO: Total Petroleum Hydrocarbon Diesel Range Organics

TPH ORO: Total Petroleum Hydrocarbons Oil Range Organics

bgs: Below ground surface

Notes:

1. Chloride analyzed by EPA Method 300

2. TPH analyzed by EPA Method 8015 M

3. BTEX analyzed by EPA Method 8260B

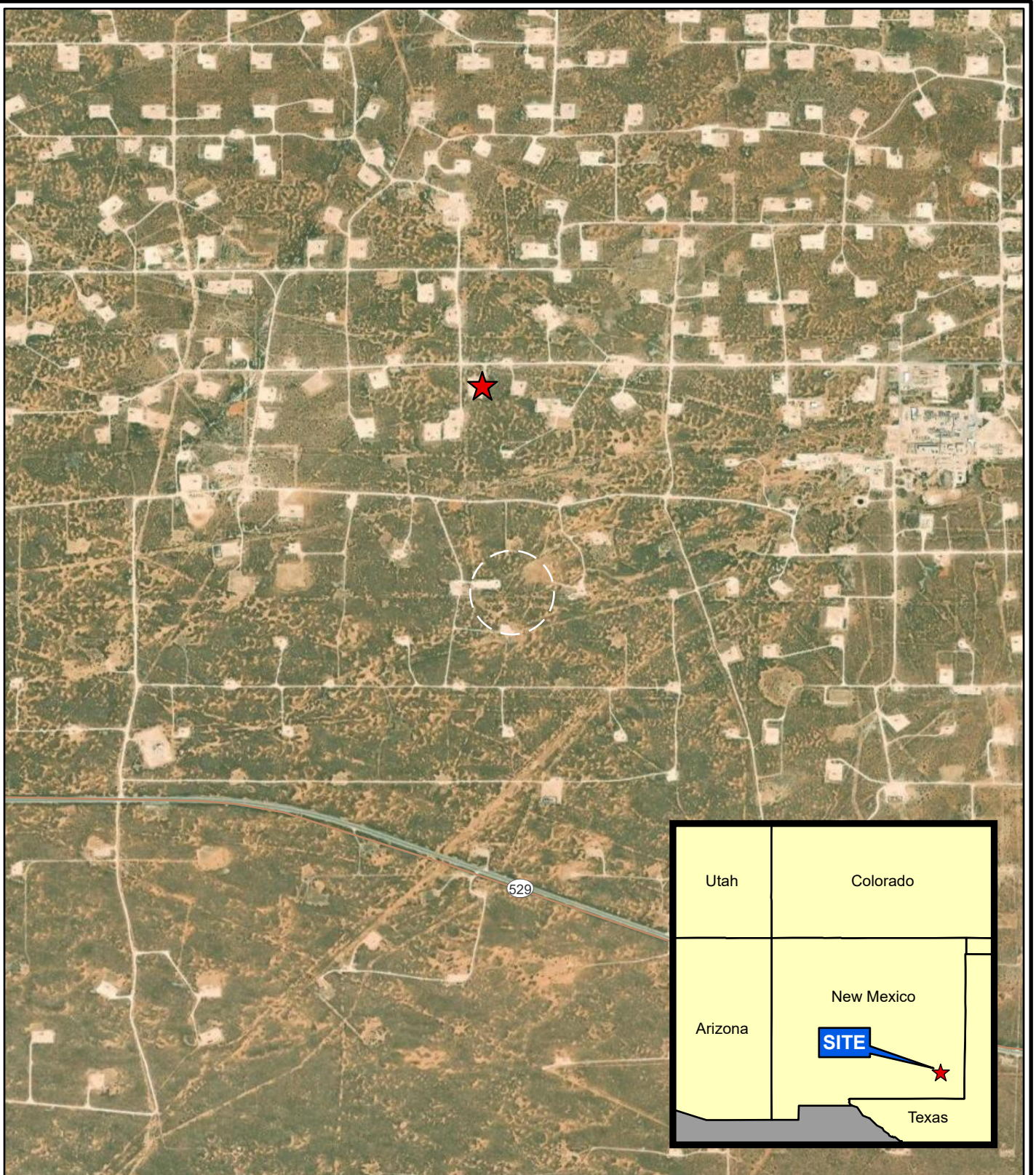
4. Closure Criteria New Mexico Administrative Code 19.15.29.12.E(2)

NMOCD: New Mexico Oil Conservation Division

--: No individual standard

Figures

City: Houston Div/Group: Remediation West -Air Group Created By: W Berry Last Saved By: wberry ; Client (Project #)
T:\EHSS\ArcGIS Pro\Land\COG COPINMGC Federal_27_TB.aprx 1/12/2024 9:40 AM



Legend

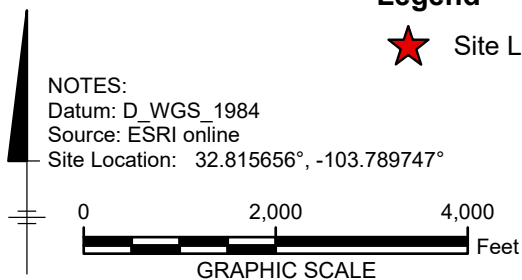
★ Site Location

NOTES:

Datum: D_WGS_1984

Source: ESRI online

Site Location: 32.815656°, -103.789747°



COG (CONOCOPHILLIPS)
GC FEDERAL #27 TB
LEA COUNTY, NEW MEXICO

SITE LOCATION MAP

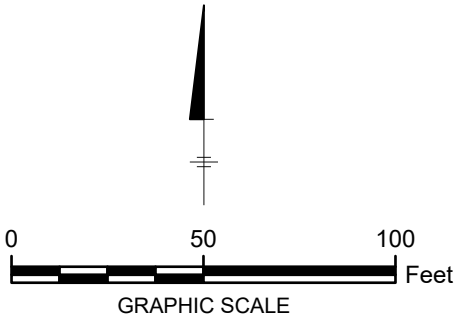


FIGURE
1

City: Houston Div/Group: Remediation West-Air Group Created By: W Berry Last Saved By: wberry Client (Project #)
TX_EH858ArcGIS_ProLand\COG_COPINMIGC_Federal_27_TB.aprx 1/12/2024 9:40 AM



- LEGEND:**
- Assessment Sample Locations
 - Historical Assessment Sample Locations



NOTE:


1. Imagery Source: Google Earth
11/2/2017
32.815656°, -103.789747

COG (CONOCOPHILLIPS) GC FEDERAL #27 TB LEA COUNTY, NEW MEXICO	
Assessment Sample Locations	
ARCADIS	FIGURE 2

Photographic Log






PHOTOGRAPHIC LOG

Property Name: GC Fed #27 TB		Location: Lea County, NM	Case No. nOY1802648272
Photo No. 1	Date: 10/10/2023		
Direction Photo Taken: NE			
Description: Tank battery and lined area (impacted area) 32.815725, -103.789927			



PHOTOGRAPHIC LOG

Property Name: GC Fed #27 TB		Location: Lea County, NM	Case No. nOY1802648272
Photo No. 2	Date: 10/10/2023		
Direction Photo Taken: E			
Description: Battery and lined area 32.8155738, -103.789845			

		PHOTOGRAPHIC LOG	
Property Name: GC Fed #27 TB		Location: Lea County, NM	Case No. nOY1802648272
Photo No. 3	Date: 10/10/2023		
Direction Photo Taken: SE			
Description: Battery and lined area 32.8155668, - 103.789918			

Appendix A

Initial C-141 Form Incident # nOY1802648272

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

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

Form C-141
Revised April 3, 2017
Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: COG Operating, LLC (OGRID# 229137)	Contact: Robert McNeill
Address: 600 West Illinois Avenue, Midland TX 79701	Telephone No.: 432-683-7443
Facility Name: GC Federal #27	Facility Type: Battery
Surface Owner: Federal	Mineral Owner: Federal
API No.: 30-025-39264	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
N	20	17S	32E	990	South	2200	West	Lea

Latitude: 32.8155708 Longitude: -103.7900696 NAD83

NATURE OF RELEASE

Type of Release: Oil & Produced Water	Volume of Release: 80 bbls PW; 0.25 bbls Oil	Volume Recovered: 78 bbls PW; 0 bbls Oil
Source of Release: Tank Overflow	Date and Hour of Occurrence: 1-20-2018	Date and Hour of Discovery: 1-20-2018 1:00 PM
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Olivia Yu NMOCD & Shelly Tucker BLM	
By Whom? Dakota Neel	Date and Hour: 1-21-2018 10:17 AM	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*


Describe Cause of Problem and Remedial Action Taken.*

This release was caused when a transducer malfunctioned and caused the tank gauge to read the incorrect reading resulting in the tank overflow. The transducer has been replaced.

Describe Area Affected and Cleanup Action Taken.*

This release occurred within a lined facility. A vacuum truck was dispatched to recover all freestanding fluids. Concho will have the spill area evaluated for any possible impact from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation activities.

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

Signature: 	OIL CONSERVATION DIVISION	
	Approved by Environmental Specialist:	
Printed Name: Dakota Neel	Approval Date:	Expiration Date:
Title: HSE Coordinator	Conditions of Approval:	
E-mail Address dneel2@concho.com	Attached <input type="checkbox"/>	
Date: 1-24-2018	Phone: 575-746-2010	

* Attach Additional Sheets If Necessary

Appendix B

Site Characterization Data

Groundwater Determination Map

Ruler

Line Path Polygon Circle 3D path 3D polygon

Measure the distance between two points on the ground

Map Length: 0.99 Miles

Ground Length: 0.99

Heading: 109.57 degrees

☒ Mouse Navigation Save Clear

32.8155708, -103.7900696 GC Fed #27 Tank Battery

RA 12020 POD 1

W103.792°

W103.784°

W103.777°

W103.77°



New Mexico Office of the State Engineer

Wells with Well Log Information

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

(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	Code	POD Subbasin	County	Source	q q q	64	16	4	Sec	Tws	Rng	X	Y	Distance	Start Date	Finish Date	Log File Date	Depth Well	Depth Water	Driller	License Number
RA 10175		RA	LE	Shallow	2	1	28	17S	32E			614814	3631005*	1623	02/04/2002	02/04/2002	03/06/2002	158		EADES, ALAN	1044
RA 12020 POD1		RA	LE	Shallow	2	2	1	28	17S	32E		614828	3630954	1651	09/24/2013	09/25/2013	10/07/2013	120	81	WHITE, JOHN (LD)	1456
RA 12042 POD1		RA	LE		2	2	1	28	17S	32E		614891	3631181	1655	11/13/2013	11/22/2013	12/12/2013	400		CRASS, DARRELL (LD)	1261
RA 12522 POD1		RA	LE	Shallow	3	3	4	21	17S	32E		614941	3631122	1715	07/25/2017	07/26/2017	08/22/2017	100		WHITE, JOHN W	1456
RA 12522 POD2		RA	LE	Shallow	2	2	1	28	17S	32E		614949	3631098	1729	07/24/2017	07/26/2017	08/22/2017	100		WHITE, JOHN W	1456
RA 12522 POD3		RA	LE	Shallow	4	4	3	28	17S	32E		614980	3631093	1760	07/20/2017	07/26/2017	08/22/2017	100		WHITE, JOHN W	1456
RA 12521 POD1		RA	LE	Shallow	3	3	4	21	17S	32E		615127	3631271	1874	07/21/2017	07/26/2017	08/22/2017	105	92	WHITE, JOHN W	1456
RA 12721 POD1		RA	LE		3	2	3	28	17S	32E		614645	3630141	1929	04/18/2019	04/19/2019	05/15/2019	125		JOHN W WHITE	1456
RA 12020 POD3		RA	LE	Shallow	2	1	2	28	17S	32E		615152	3631019	1944	07/13/2015	07/15/2015	08/10/2015	112	83	WHITE, JOHN W	1456
RA 13234 POD1		RA	LE	Shallow	1	4	1	19	17S	32E		611435	3632294	1998	10/20/2022	10/20/2022	11/04/2022	104		JACKIE D. ATKINS	1249
RA 12721 POD2		RA	LE	Shallow	1	1	4	28	17S	32E		615055	3630407	2092	04/18/2019	04/19/2019	05/15/2019	124	75	JOHN W WHITE	1456
RA 12721 POD8		RA	LE	Shallow	1	2	1	33	17S	32E		614640	3629463	2449	09/28/2020	09/28/2020	10/14/2020	130	108	JOHN W WHITE	1456
RA 12721 POD4		RA	LE		1	1	2	33	17S	32E		615055	3629589	2610	04/18/2019	04/19/2019	05/15/2019	140		JOHN W WHITE	1456
RA 12721 POD3		RA	LE	Shallow	2	3	4	28	17S	32E		615417	3629979	2628	04/18/2019	04/19/2019	05/15/2019	115		JOHN W WHITE	1456
RA 12721 POD5		RA	LE	Shallow	2	4	4	28	17S	32E		615650	3629961	2832	04/27/2020	04/28/2020	05/18/2020	130	124	WHITE, JOHNNOWN.GENER	1456
RA 12721 POD7		RA	LE		1	3	2	33	17S	32E		615064	3629198	2913	04/28/2020	04/28/2020	05/18/2020	130		WHITE, JOHNNOWN.GENER	1456

Record Count: 16

UTMNAD83 Radius Search (in meters):

Easting (X): 613264.69

Northing (Y): 3631489.6

Radius: 3000

*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.


4/26/24 9:52 AM

WELLS WITH WELL LOG INFORMATION

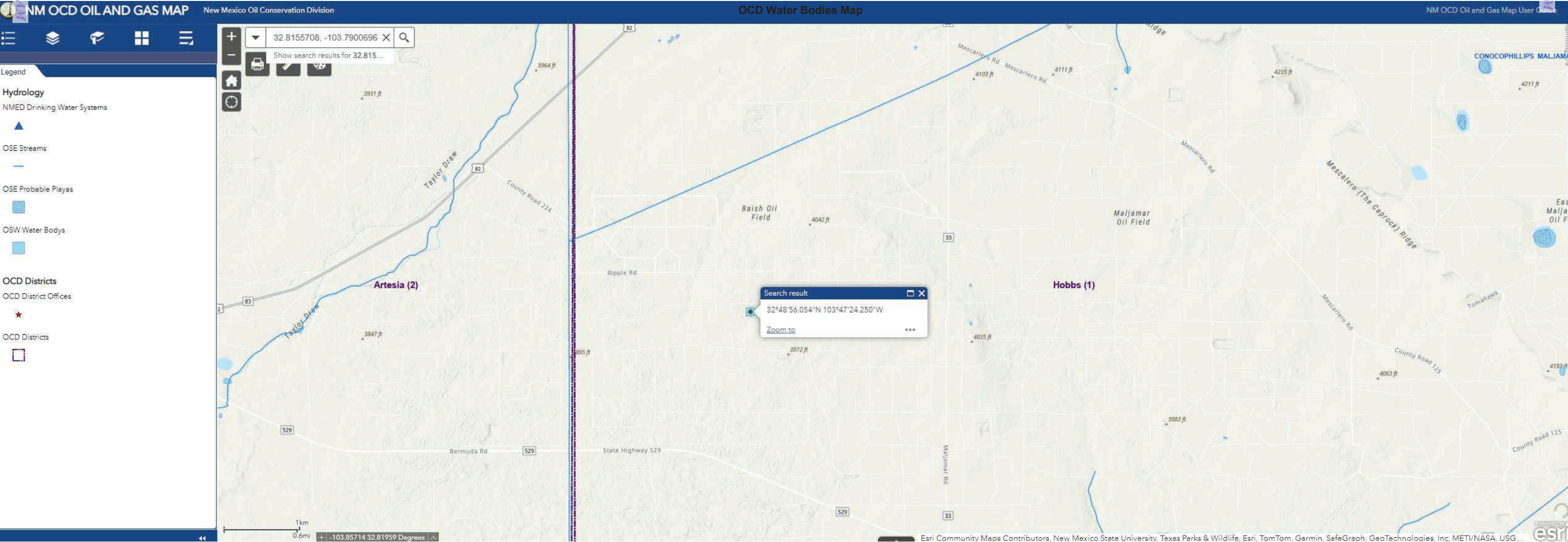


New Mexico Office of the State Engineer

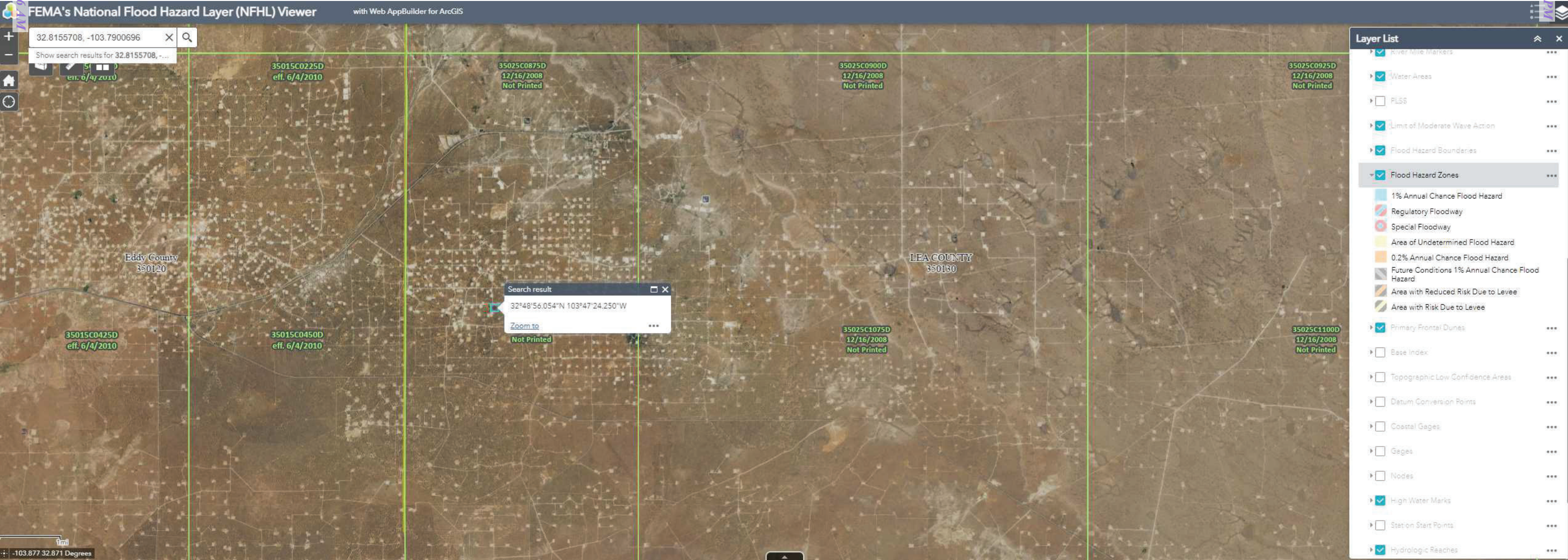
Point of Diversion Summary

		(quarters are 1=NW 2=NE 3=SW 4=SE)						(quarters are smallest to largest)		(NAD83 UTM in meters)									
Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y										
	RA 12020 POD1	2	2	1	28	17S	32E	614828	3630954										
<hr/>																			
Driller License: 1456		Driller Company: WHITE DRILLING COMPANY																	
Driller Name: WHITE, JOHN (LD)																			
Drill Start Date: 09/24/2013		Drill Finish Date: 09/25/2013				Plug Date:													
Log File Date: 10/07/2013		PCW Rcv Date:				Source: Shallow													
Pump Type:		Pipe Discharge Size:				Estimated Yield:													
Casing Size: 2.00		Depth Well: 120 feet				Depth Water: 81 feet													
<hr/>																			
Water Bearing Stratifications:		Top	Bottom	Description															
		70	111	Sandstone/Gravel/Conglomerate															
		111	120	Shale/Mudstone/Siltstone															
<hr/>																			
Casing Perforations:		Top	Bottom																
		75	110																
<hr/>																			





The screenshot displays the NM OCD Oil and Gas Map interface. The top navigation bar includes the New Mexico Oil Conservation Division logo and the title "NM OCD OIL AND GAS MAP". The main map area shows a topographic view of land with various ownership boundaries. A search bar at the top center contains the coordinates "32.8155708, -103.7900696" and a search icon. A search result popup is visible, showing the coordinates "32°48'56.054"N 103°47'24.250"W" and a "Zoom to" link. The left sidebar contains a legend with two sections: "Mineral and Surface Ownership" and "Mineral Ownership". The "Mineral and Surface Ownership" section lists various land ownership types with corresponding color swatches: BLM (yellow), BOR (red with white dots), DOD (pink), DOE (light pink), FS (green), FWS (teal), I (orange), NPS (purple), P (light blue), S (light blue), SGF (blue with white dots), SP (blue), USDA (light green), and VCNP (purple). The "Mineral Ownership" section lists mineral ownership types with corresponding color swatches: A-All minerals are owned by the U.S. (red), C-Only coal is owned by the U.S. (green), G-Only oil, gas and coal are owned by the U.S. (purple), N-No minerals are owned by the U.S. (light blue), O-Only oil and gas are owned by the U.S. (yellow), and T-Other minerals are owned by the U.S. (pink). The bottom of the map shows a scale bar (0.2km, 600ft) and a coordinate display (32.8155708, -103.7900696).



Appendix C

2018 COG Deferment Report



November 7, 2018

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

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

Re: Deferment Report
GC Federal #27 Tank Battery (1/20/18)
RP#: 1RP-5258
GPS: 32.8155708, -103.7900696
Unit Letter N, Section 20, Township 17 South, Range 32 East
Lea County, New Mexico

Ms. Yu/Ms. Tucker,

COG Operating, LLC (COG) is pleased to submit the following deferment report in response to a release that occurred at the GC Federal #27 Tank Battery located in Unit Letter N, Section 20, Township 17 South and Range 32 East in Lea County, New Mexico.

BACKGROUND

The release was discovered on January 20, 2018 and a C-141 initial report was submitted and approved by the New Mexico Oil Conservation Division (NMOCD). The release was caused by a tank overflow and occurred within a lined facility. Approximately eighty-(80) barrels of produced water and 0.25 barrels of oil were release inside the lined containment. Seventy-eight (78) barrels of produced water were recovered with no oil recovered. The initial C-141 is shown in Appendix A.

GROUNDWATER AND REGULATORY

According to the New Mexico Office of the State Engineer (NMOSE), reported water wells are in Section 1, 10 and 12 with groundwater depth of 225', 132' and 120' below surface, respectively. Based on the Chevron Groundwater Trend map, the depth to groundwater in the project vicinity is greater than 200-feet below ground surface (BGS). The water well information is shown in Appendix B.

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

characterization evaluation data is summarized in Appendix B. The delineation and closure criteria are listed below:

General Site Characterization and Groundwater:

Site Characterization	Average Groundwater Depth (ft.)
None Encountered	>100 feet

Delineation and Closure Criteria:

Remedial Action Levels (RALs)	
Chlorides	20,000 mg/kg
TPH (GRO and DRO and MRO)	2,500 mg/kg
TPH (GRO and DRO)	1,000 mg/kg
Benzene	10 mg/kg
Total BTEX	50 mg/kg

SAMPLING DATA

The areas of AH-1 (0-1') and AH-2 (0-1') exceeded the closure criteria RAL with a chloride concentration of 27,300 mg/kg (0-1') and a TPH concentration of 14,769 mg/kg, respectively. The chloride and TPH concentrations declined at 1.0' below the RALs.

DEFERMENT REQUEST

The facility is currently active and the damage areas on the liner have been repaired. Based on the sampling results, COG request deferment of the impacted soil until abandonment of the facility. The signed C-141 Final is included in Appendix A. Should you have any questions or concerns on the deferment report, please do not hesitate to contact me.

Sincerely,

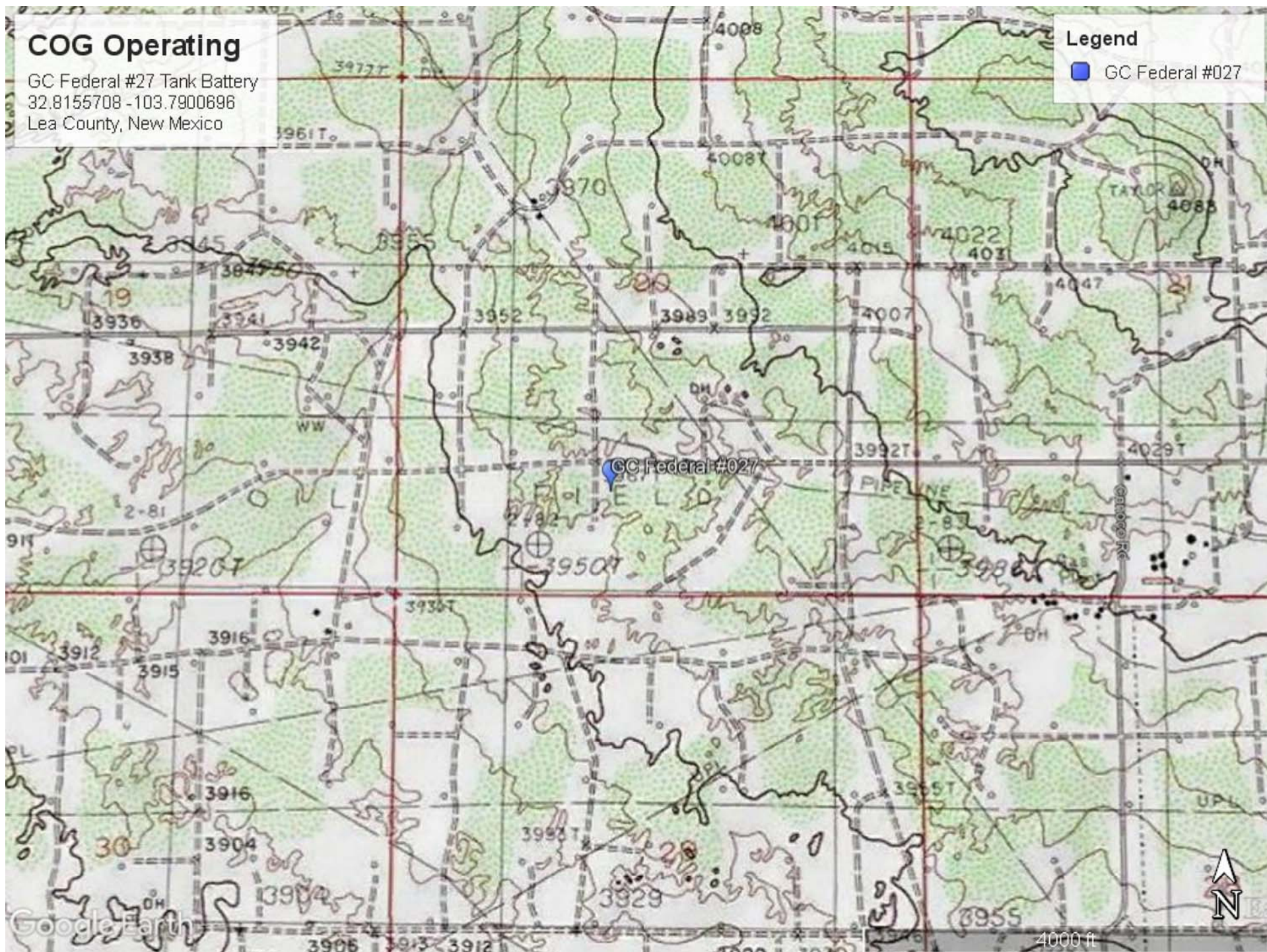
Sincerely,
Concho Operating, LLC



Ike Tavarez, P. G.
 Senior HSE Supervisor
itavarez@concho.com

CC:

Figures





Tables

Table 1
COG Operating LLC.
GC Federal #27
Eddy County, New Mexico

Sample ID	Sample Depth (ft)	Sample Date	Soil Status		TPH (mg/kg)							Benzene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	GRO	DRO	Ext DRO	Total	GRO	DRO	Total			
Average Depth to Groundwater (ft) >100 feet														
NMOCD RAL Limits (mg/kg)					-	-	-	2,500	-	-	1,000	10	50	20,000
AH-1	0	3/21/2018	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.300	27,300
AH-1	1	3/21/2018	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.300	387
AH-1	2	3/21/2018	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.300	-
AH-1	3	3/21/2018	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.300	-
AH-1	4	3/21/2018	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.300	-
AH-1	5	3/21/2018	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.300	-
AH-2	0	3/21/2018	X		839	11800	2130	14,769	839	11800	12,639	<0.200	27.8	1,080
AH-2	1	3/21/2018	X		23.2	188	24.1	235.3	23.2	188	211.2	<0.050	1.12	48.7
AH-2	2	3/21/2018	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.300	-
AH-2	3	3/21/2018	X		<10.0	83.3	<10.0	83.3	<10.0	83.3	83.3	<0.050	<0.300	-
AH-2	4	3/21/2018	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.300	-
AH-2	5	3/21/2018	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.300	-
AH-3	0	3/21/2018	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.300	11,500
AH-3	1	3/21/2018	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.300	111
AH-3	2	3/21/2018	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.300	-
AH-3	3	3/21/2018	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.300	-
AH-3	4	3/21/2018	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.300	-
AH-3	5	3/21/2018	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.300	-
AH-4	0	3/21/2018	X		<10.0	536	237	773	<10.0	536	536	<0.050	<0.300	6,250
AH-4	1	3/21/2018	X		<10.0	20.5	<10.0	20.5	<10.0	20.5	20.5	<0.050	<0.300	23.0
AH-4	2	3/21/2018	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.300	-
AH-4	3	3/21/2018	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.300	-
AH-4	4	3/21/2018	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.300	-
AH-4	5	3/21/2018	X		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.300	-

 Proposed Excavation Depth

(-) Not Analyzed

Appendix A

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

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

Form C-141
Revised April 3, 2017
Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: COG Operating, LLC (OGRID# 229137)	Contact: Robert McNeill
Address: 600 West Illinois Avenue, Midland TX 79701	Telephone No.: 432-683-7443
Facility Name: GC Federal #27	Facility Type: Battery
Surface Owner: Federal	Mineral Owner: Federal
API No.: 30-025-39264	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
N	20	17S	32E	990	South	2200	West	Lea

Latitude: 32.8155708 Longitude: -103.7900696 NAD83

NATURE OF RELEASE

Type of Release: Oil & Produced Water	Volume of Release: 80 bbls PW; 0.25 bbls Oil	Volume Recovered: 78 bbls PW; 0 bbls Oil
Source of Release: Tank Overflow	Date and Hour of Occurrence: 1-20-2018	Date and Hour of Discovery: 1-20-2018 1:00 PM
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Olivia Yu NMOCD & Shelly Tucker BLM	
By Whom? Dakota Neel	Date and Hour: 1-21-2018 10:17 AM	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

RECEIVED

By Olivia Yu at 1:34 pm, Jan 26, 2018



Describe Cause of Problem and Remedial Action Taken.*

This release was caused when a transducer malfunctioned and caused the tank gauge to read the incorrect reading resulting in the tank overflow. The transducer has been replaced.

Describe Area Affected and Cleanup Action Taken.*

This release occurred within a lined facility. A vacuum truck was dispatched to recover all freestanding fluids. Concho will have the spill area evaluated for any possible impact from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation activities.

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

Signature: 	OIL CONSERVATION DIVISION	
	Approved by Environmental Specialist: 	
Printed Name: Dakota Neel		
Title: HSE Coordinator	Approval Date: 1/26/2018	Expiration Date:
E-mail Address dneel2@concho.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 1-24-2018 Phone: 575-746-2010	Please inspect liner in question. Provide NMOCD with a concise report of the inspection with affirmation the liner has and will continue to contain liquids.	

* Attach Additional Sheets If Necessary

REVISED

3:42 pm, Nov 05, 2018

1RP-5258

nOY1802648272

pOY1830956441

Incident ID	
District RP	1RP 5258
Facility ID	
Application ID	

Site Assessment/Characterization

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

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

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

Characterization Report Checklist: Each of the following items must be included in the report.
<input checked="" type="checkbox"/> Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
<input type="checkbox"/> Field data
<input checked="" type="checkbox"/> Data table of soil contaminant concentration data
<input checked="" type="checkbox"/> Depth to water determination
<input checked="" type="checkbox"/> Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
<input type="checkbox"/> Boring or excavation logs
<input type="checkbox"/> Photographs including date and GIS information
<input checked="" type="checkbox"/> Topographic/Aerial maps
<input checked="" type="checkbox"/> Laboratory data including chain of custody


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

State of New Mexico
Oil Conservation Division

Page 4

Incident ID	
District RP	1RP 5258
Facility ID	
Application ID	

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

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

Received by: _____ Date: _____

Incident ID	
District RP	1RP 5258
Facility ID	
Application ID	

Remediation Plan

Remediation Plan Checklist: *Each of the following items must be included in the plan.*


- ☐ Detailed description of proposed remediation technique
- ☐ Scaled sitemap with GPS coordinates showing delineation points
- ☐ Estimated volume of material to be remediated
- ☐ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- ☐ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: *Each of the following items must be confirmed as part of any request for deferral of remediation.*

- ☒ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- ☒ Extents of contamination must be fully delineated.
- ☒ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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

Printed Name: Ike Tavarez Title: Senior HSE Supervisor

Signature:  Date: _____

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

OCD Only

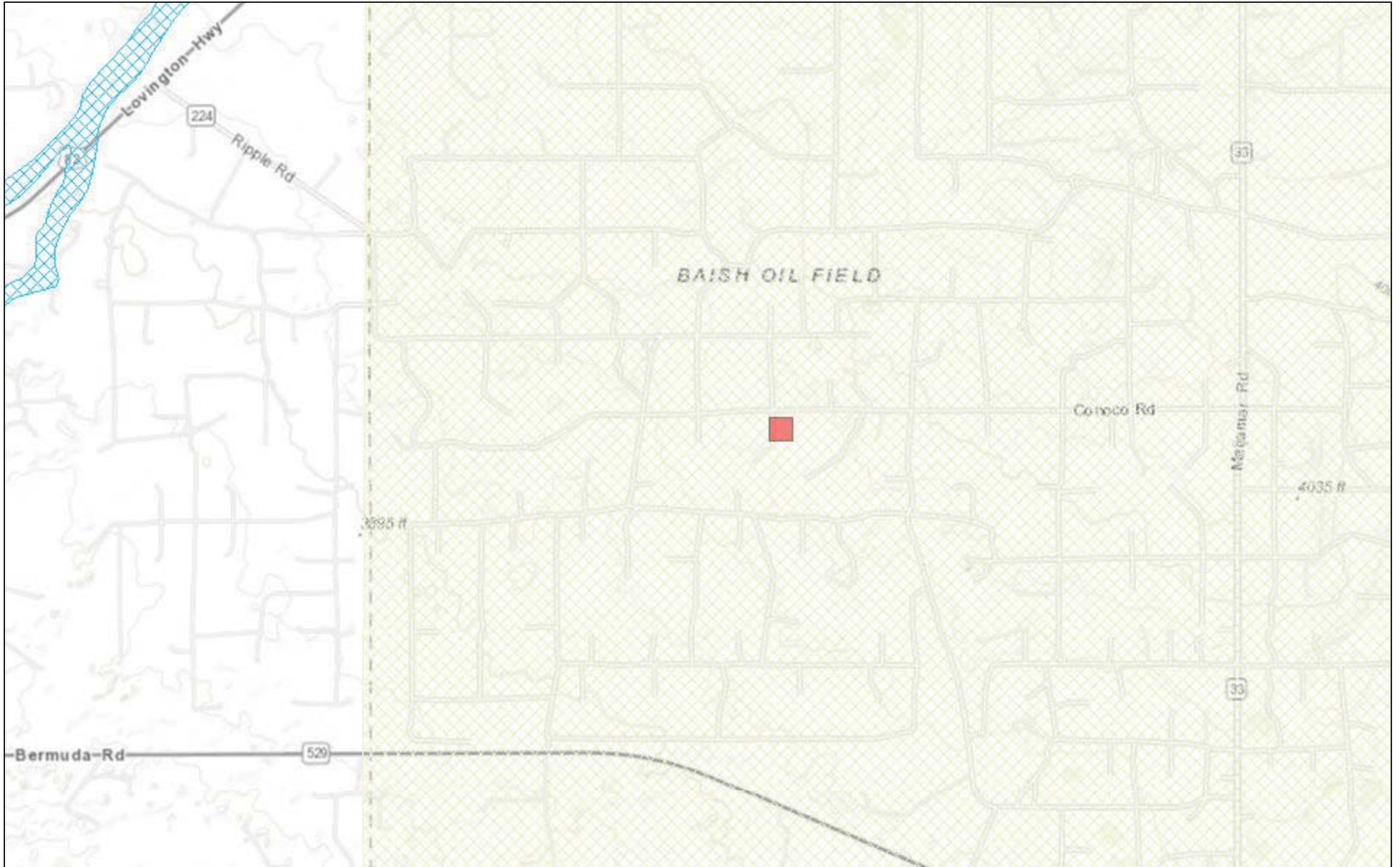
Received by: _____ Date: _____

☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

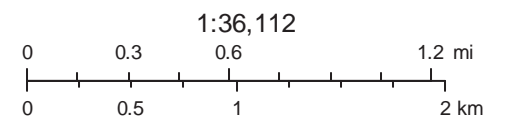
Signature: _____ Date: _____

Appendix B

New Mexico NFHL Data

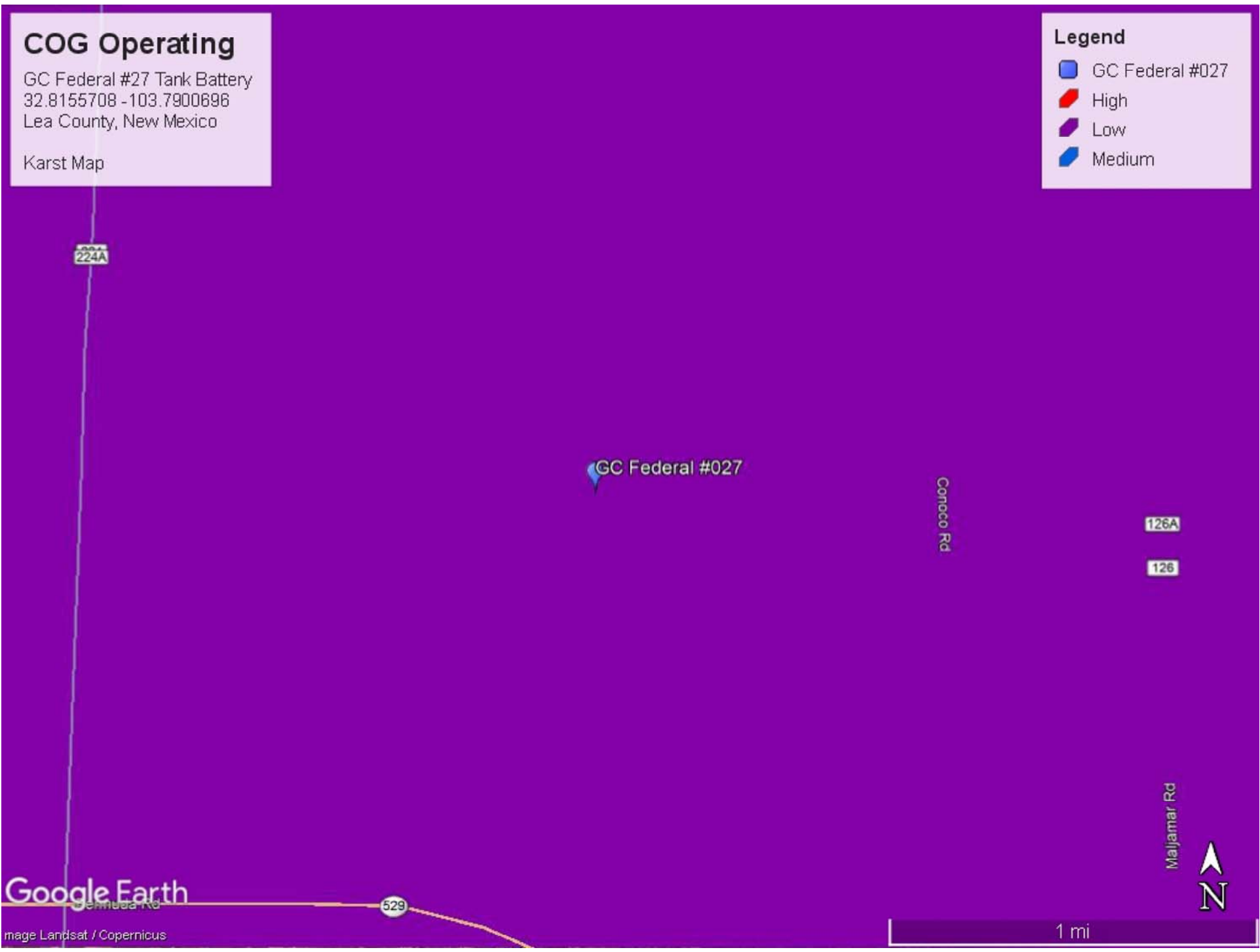


November 1, 2018



FEMA
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS,

nmflood.org is made possible through a collaboration with NMDHSEM, EDAC, and FEMA
This is a non-regulatory product for informational use only. Please consult your local floodplain administrator for further information.



Water Well Data
Average Depth to Groundwater (ft)
COG - GC Federal #27, Lea County, New Mexico

16 South			31 East		
6	5	4	3	2	1
				290	
7	8	9	10	11	12
					288
18	17	16	15	14	13
				113	299
				314	
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36
290					

17 South			31 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36
			271		

18 South			31 East		
6	5	4	3	2	1
7	8	9	10	11	12
					400
18	17	16	15	98	14
				317	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36
				261	

16 South			32 East		
6	5	4	3	2	1
			65	265	265
7	8	9	10	11	12
					215
18	17	16	15	14	13
			221		215
19	20	21	22	23	24
220		210		210	
30	29	28	27	26	25
				243	
31	32	33	34	35	36
					260

17 South			32 East		
6	5	4	3	2	1
		82		60	225
		Maljamar			
7	8	9	10	11	12
			132	70	
				88	120
18	17	16	15	14	13
19	20	21	22	23	24
	20				
30	29	28	27	26	25
31	32	33	34	35	36

18 South			32 East		
6	5	4	3	2	1
		65			
7	460	8	9	10	11
82					12
18	17	16	15	14	13
		84			
19	20	21	22	23	24
	164		429		
30	29	28	27	26	25
31	32	33	34	35	36
			117		

16 South			33 East		
6	5	4	3	2	1
	180		130		
		150		148	142
7	8	9	10	11	12
	200		182		142
18	17	16	15	14	13
	182	180	175	143	110
19	20	21	22	23	24
				120	
30	29	28	27	26	25
31	32	33	34	35	36
191		190	130	143	120
190	168		160		

17 South			33 East		
6	5	4	3	2	1
90			155	158	150
7	167	8	9	10	11
		173	161		12
18	17	16	15	14	13
188	180				165
19	20	21	22	23	24
	190			115	
30	69	29	60	28	27
				26	25
31	32	33	34	35	36
		120		155	

18 South			33 East		
6	5	4	3	2	1
			60		
7	8	100	9	10	11
				62	46
					140
18	17	16	15	14	13
	85			36	60
19	20	21	22	23	24
>140					195
30	29	28	27	26	25
35					
31	32	33	34	35	36
		177			

- 88 New Mexico State Engineers Well Reports
- 105 USGS Well Reports
- 90 Geology and Groundwater Conditions in Southern Lea, County, NM (Report 6)
Geology and Groundwater Resources of Eddy County, NM (Report 3)



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
L 03980	L	LE		2	2	2	01	17S	32E	620466	3637594*	270	200	70
L 03980 S	L	LE		4	4	4	02	17S	32E	618870	3636170*	255	179	76
L 03980 S2	L	LE		3	2	3	01	17S	32E	619470	3636581*	225	175	50
L 04019	L	LE		4	3	4	02	17S	32E	618468	3636166*	182		
L 04020	L	LE		3	3	4	02	17S	32E	618268	3636166*	200		
L 04021	R	L	LE	3	4	4	02	17S	32E	618670	3636170*	190		
L 04021 POD3	L	LE			3	4	03	17S	32E	616761	3636252*	247		
L 04021 S	L	LE		2	4	4	03	17S	32E	617262	3636354*	260		
L 13047 POD1	L	LE					11	17S	32E	618187	3635254*	140		
L 13050 POD1	L	LE		2	2	1	10	17S	32E	616463	3635945*	156	132	24
RA 08855	RA	LE		4	1	1	10	17S	32E	616061	3635742*	158		
RA 09505	RA	LE		2	2	1	10	17S	32E	616462	3635944	147		
RA 09505 S	RA	LE		2	2	1	10	17S	32E	616463	3635945*	144		
RA 10175	RA	LE			2	1	28	17S	32E	614814	3631005*	158		
RA 11684 POD1	RA	LE		1	1	4	11	17S	32E	618216	3635124	275		
RA 11684 POD2	RA	LE		1	1	4	11	17S	32E	618313	3635248	275		
RA 11684 POD3	RA	LE		3	3	1	11	17S	32E	618262	3635371	275		
RA 11684 POD4	RA	LE		1	3	2	11	17S	32E	618334	3635521	275		
RA 11684 POD5	RA	LE		3	1	4	11	17S	32E	618353	3635047	275		
RA 11734 POD1	RA	LE		2	2	1	10	17S	32E	616556	3635929	165		
RA 11911 POD1	RA	LE		1	3	1	24	17S	32E	619192	3632296	35		
RA 12020 POD1	RA	LE		2	2	1	28	17S	32E	614828	3630954	120	81	39
RA 12042 POD1	RA	LE		2	2	1	28	17S	32E	614891	3631181	400		

*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.



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
RA 11590 POD1	RA	ED		2	1	3	32	17S	31E	603315	3628545	158		
RA 11590 POD3	RA	ED		3	1	2	32	17S	31E	603932	3629260	60		
RA 11590 POD4	RA	ED		4	1	1	32	17S	31E	603308	3629253	55		

Average Depth to Water: --

Minimum Depth: --

Maximum Depth: --

Record Count: 3

PLSS Search:

Township: 17S

Range: 31E

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.

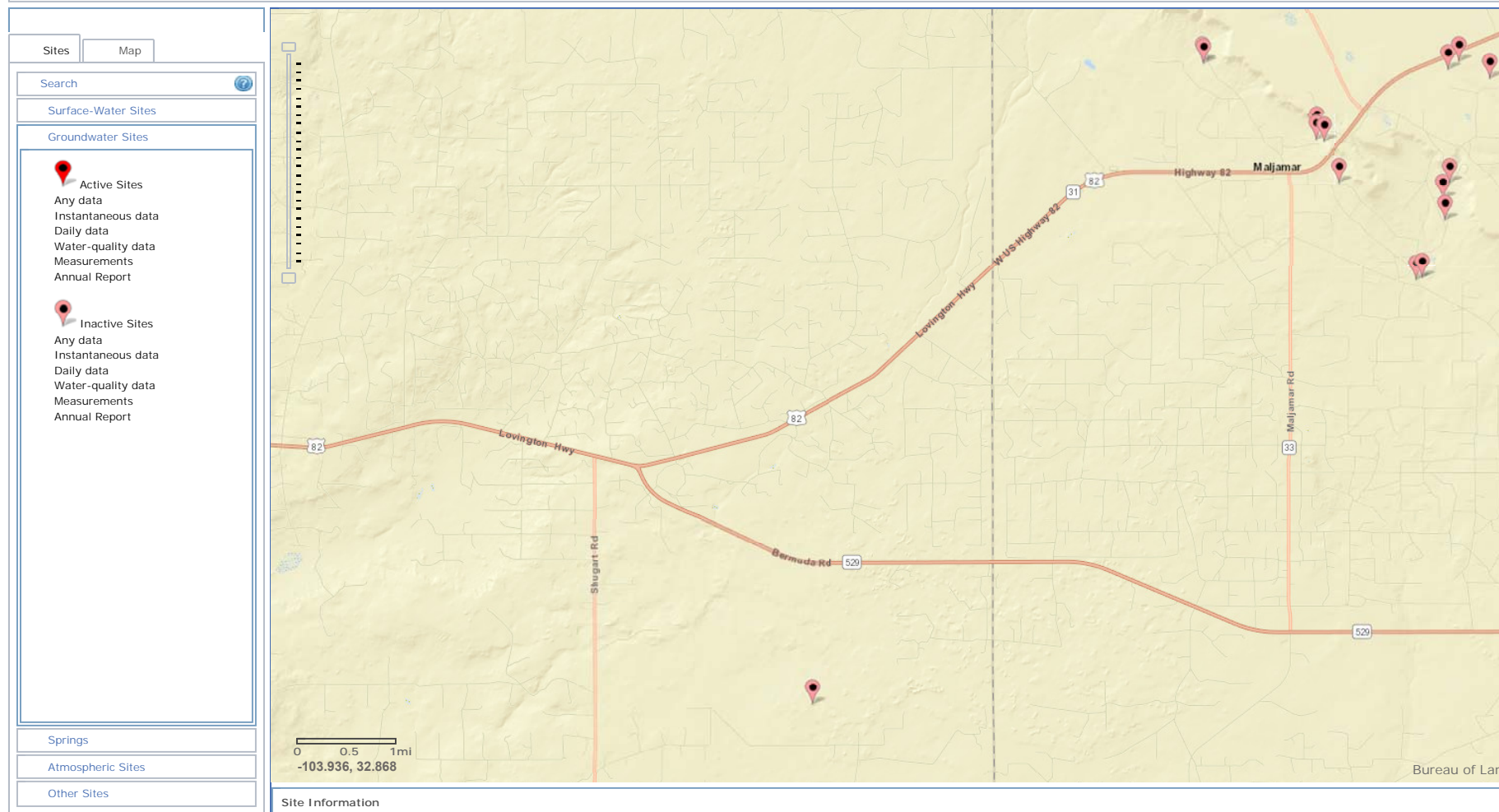
10/23/18 5:46 PM

Page 1 of 1

WATER COLUMN/ AVERAGE
DEPTH TO WATER



National Water Information System: Mapper



Appendix C

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

March 28, 2018

SHELDON HITCHCOCK

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: GC FEDERAL #27

Enclosed are the results of analyses for samples received by the laboratory on 03/21/18 12:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-17-10. 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: GC FEDERAL #27
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
28-Mar-18 15:49

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AH -1 0'	H800814-01	Soil	20-Mar-18 12:30	21-Mar-18 12:00
AH -1 1'	H800814-02	Soil	20-Mar-18 12:32	21-Mar-18 12:00
AH -1 2'	H800814-03	Soil	20-Mar-18 12:34	21-Mar-18 12:00
AH -1 3'	H800814-04	Soil	20-Mar-18 12:36	21-Mar-18 12:00
AH -1 4'	H800814-05	Soil	20-Mar-18 12:38	21-Mar-18 12:00
AH -1 5'	H800814-06	Soil	20-Mar-18 12:40	21-Mar-18 12:00
AH -2 0'	H800814-07	Soil	20-Mar-18 12:46	21-Mar-18 12:00
AH -2 1'	H800814-08	Soil	20-Mar-18 12:48	21-Mar-18 12:00
AH -2 2'	H800814-09	Soil	20-Mar-18 12:50	21-Mar-18 12:00
AH -2 3'	H800814-10	Soil	20-Mar-18 12:52	21-Mar-18 12:00
AH -2 4'	H800814-11	Soil	20-Mar-18 12:54	21-Mar-18 12:00
AH -2 5'	H800814-12	Soil	20-Mar-18 12:56	21-Mar-18 12:00
AH -3 0'	H800814-13	Soil	20-Mar-18 13:00	21-Mar-18 12:00
AH -3 1'	H800814-14	Soil	20-Mar-18 13:02	21-Mar-18 12:00
AH -3 2'	H800814-15	Soil	20-Mar-18 13:04	21-Mar-18 12:00
AH -3 3'	H800814-16	Soil	20-Mar-18 13:06	21-Mar-18 12:00
AH -3 4'	H800814-17	Soil	20-Mar-18 13:08	21-Mar-18 12:00
AH -3 5'	H800814-18	Soil	20-Mar-18 13:10	21-Mar-18 12:00
AH -4 0'	H800814-19	Soil	20-Mar-18 13:15	21-Mar-18 12:00
AH -4 1'	H800814-20	Soil	20-Mar-18 13:17	21-Mar-18 12:00
AH -4 2'	H800814-21	Soil	20-Mar-18 13:14	21-Mar-18 12:00
AH -4 3'	H800814-22	Soil	20-Mar-18 13:21	21-Mar-18 12:00
AH -4 4'	H800814-23	Soil	20-Mar-18 13:23	21-Mar-18 12:00
AH -4 5'	H800814-24	Soil	20-Mar-18 13:25	21-Mar-18 12:00

Cardinal Laboratories

*=Accredited Analyte

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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: GC FEDERAL #27
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
28-Mar-18 15:49

AH -1 0'
H800814-01 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050	0.050	mg/kg	50	8032201	MS	22-Mar-18	8021B
Toluene*	<0.050	0.050	mg/kg	50	8032201	MS	22-Mar-18	8021B
Ethylbenzene*	<0.050	0.050	mg/kg	50	8032201	MS	22-Mar-18	8021B
Total Xylenes*	<0.150	0.150	mg/kg	50	8032201	MS	22-Mar-18	8021B
Total BTEX	<0.300	0.300	mg/kg	50	8032201	MS	22-Mar-18	8021B
Surrogate: 4-Bromofluorobenzene (PID)		96.6 %	72-148		8032201	MS	22-Mar-18	8021B

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0	10.0	mg/kg	1	8032204	MS	22-Mar-18	8015B
DRO >C10-C28*	<10.0	10.0	mg/kg	1	8032204	MS	22-Mar-18	8015B
EXT DRO >C28-C36	<10.0	10.0	mg/kg	1	8032204	MS	22-Mar-18	8015B
Surrogate: 1-Chlorooctane		81.5 %	41-142		8032204	MS	22-Mar-18	8015B
Surrogate: 1-Chlorooctadecane		78.2 %	37.6-147		8032204	MS	22-Mar-18	8015B

Green Analytical Laboratories**Soluble (DI Water Extraction)**

Chloride	27300	1000	mg/kg wet	1000	B803170	JDA	24-Mar-18	EPA300.0
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*=Accredited Analyte

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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: GC FEDERAL #27
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
28-Mar-18 15:49

AH -1 1'
H800814-02 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	8032201	MS	22-Mar-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8032201	MS	22-Mar-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8032201	MS	22-Mar-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8032201	MS	22-Mar-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8032201	MS	22-Mar-18	8021B	
<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			96.9 %	72-148		8032201	MS	22-Mar-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8032204	MS	22-Mar-18	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	8032204	MS	22-Mar-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8032204	MS	22-Mar-18	8015B	
<i>Surrogate: 1-Chlorooctane</i>			86.5 %	41-142		8032204	MS	22-Mar-18	8015B	
<i>Surrogate: 1-Chlorooctadecane</i>			81.4 %	37.6-147		8032204	MS	22-Mar-18	8015B	

Green Analytical Laboratories**Soluble (DI Water Extraction)**

Chloride	387		10.0	mg/kg wet	10	B803170	JDA	24-Mar-18	EPA300.0	
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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: GC FEDERAL #27
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
28-Mar-18 15:49

AH -1 2'
H800814-03 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	8032201	MS	22-Mar-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8032201	MS	22-Mar-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8032201	MS	22-Mar-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8032201	MS	22-Mar-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8032201	MS	22-Mar-18	8021B	
<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			98.4 %	72-148		8032201	MS	22-Mar-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8032204	MS	22-Mar-18	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	8032204	MS	22-Mar-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8032204	MS	22-Mar-18	8015B	
<i>Surrogate: 1-Chlorooctane</i>			90.6 %	41-142		8032204	MS	22-Mar-18	8015B	
<i>Surrogate: 1-Chlorooctadecane</i>			84.4 %	37.6-147		8032204	MS	22-Mar-18	8015B	

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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: GC FEDERAL #27
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
28-Mar-18 15:49

AH -1 3'
H800814-04 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8032202	MS	22-Mar-18	8021B	
<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			108 %	72-148		8032202	MS	22-Mar-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8032204	MS	22-Mar-18	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	8032204	MS	22-Mar-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8032204	MS	22-Mar-18	8015B	
<i>Surrogate: 1-Chlorooctane</i>			86.9 %	41-142		8032204	MS	22-Mar-18	8015B	
<i>Surrogate: 1-Chlorooctadecane</i>			82.1 %	37.6-147		8032204	MS	22-Mar-18	8015B	

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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: GC FEDERAL #27
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
28-Mar-18 15:49

AH -1 4'
H800814-05 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			106 %	72-148		8032202	MS	22-Mar-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8032204	MS	22-Mar-18	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	8032204	MS	22-Mar-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8032204	MS	22-Mar-18	8015B	
Surrogate: 1-Chlorooctane			80.5 %	41-142		8032204	MS	22-Mar-18	8015B	
Surrogate: 1-Chlorooctadecane			74.6 %	37.6-147		8032204	MS	22-Mar-18	8015B	

Cardinal Laboratories

*=Accredited Analyte

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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: GC FEDERAL #27
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
28-Mar-18 15:49

AH -1 5'
H800814-06 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			108 %	72-148		8032202	MS	22-Mar-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8032204	MS	22-Mar-18	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	8032204	MS	22-Mar-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8032204	MS	22-Mar-18	8015B	
Surrogate: 1-Chlorooctane			83.0 %	41-142		8032204	MS	22-Mar-18	8015B	
Surrogate: 1-Chlorooctadecane			74.4 %	37.6-147		8032204	MS	22-Mar-18	8015B	

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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: GC FEDERAL #27
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
28-Mar-18 15:49

AH -2 0'
H800814-07 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.200		0.200	mg/kg	200	8032202	MS	22-Mar-18	8021B	
Toluene*	0.885		0.200	mg/kg	200	8032202	MS	22-Mar-18	8021B	
Ethylbenzene*	4.19		0.200	mg/kg	200	8032202	MS	22-Mar-18	8021B	
Total Xylenes*	22.7		0.600	mg/kg	200	8032202	MS	22-Mar-18	8021B	
Total BTEX	27.8		1.20	mg/kg	200	8032202	MS	22-Mar-18	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			144 %	72-148		8032202	MS	22-Mar-18	8021B	

Petroleum Hydrocarbons by GC FID**S-06**

GRO C6-C10*	839		50.0	mg/kg	5	8032204	MS	22-Mar-18	8015B	
DRO >C10-C28*	11800		50.0	mg/kg	5	8032204	MS	22-Mar-18	8015B	
EXT DRO >C28-C36	2130		50.0	mg/kg	5	8032204	MS	22-Mar-18	8015B	
Surrogate: 1-Chlorooctane			141 %	41-142		8032204	MS	22-Mar-18	8015B	
Surrogate: 1-Chlorooctadecane			231 %	37.6-147		8032204	MS	22-Mar-18	8015B	

Green Analytical Laboratories**Soluble (DI Water Extraction)**

Chloride	1080		100	mg/kg wet	100	B803171	JDA	26-Mar-18	EPA300.0	
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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: GC FEDERAL #27
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
28-Mar-18 15:49

AH -2 1'
H800814-08 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Toluene*	0.061		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Ethylbenzene*	0.378		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Total Xylenes*	0.681		0.150	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Total BTEX	1.12		0.300	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			121 %	72-148		8032202	MS	22-Mar-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	23.2		10.0	mg/kg	1	8032204	MS	22-Mar-18	8015B	
DRO >C10-C28*	188		10.0	mg/kg	1	8032204	MS	22-Mar-18	8015B	
EXT DRO >C28-C36	24.1		10.0	mg/kg	1	8032204	MS	22-Mar-18	8015B	
Surrogate: 1-Chlorooctane			78.1 %	41-142		8032204	MS	22-Mar-18	8015B	
Surrogate: 1-Chlorooctadecane			91.0 %	37.6-147		8032204	MS	22-Mar-18	8015B	

Green Analytical Laboratories**Soluble (DI Water Extraction)**

Chloride	48.7		10.0	mg/kg wet	10	B803171	JDA	26-Mar-18	EPA300.0	
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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: GC FEDERAL #27
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
28-Mar-18 15:49

AH -2 2'
H800814-09 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8032202	MS	22-Mar-18	8021B	
<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			103 %	72-148		8032202	MS	22-Mar-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8032204	MS	22-Mar-18	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	8032204	MS	22-Mar-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8032204	MS	22-Mar-18	8015B	
<i>Surrogate: 1-Chlorooctane</i>			86.1 %	41-142		8032204	MS	22-Mar-18	8015B	
<i>Surrogate: 1-Chlorooctadecane</i>			88.2 %	37.6-147		8032204	MS	22-Mar-18	8015B	

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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: GC FEDERAL #27
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
28-Mar-18 15:49

AH -2 3'
H800814-10 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			107 %	72-148		8032202	MS	22-Mar-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8032204	MS	22-Mar-18	8015B	
DRO >C10-C28*	83.3		10.0	mg/kg	1	8032204	MS	22-Mar-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8032204	MS	22-Mar-18	8015B	
Surrogate: 1-Chlorooctane			84.6 %	41-142		8032204	MS	22-Mar-18	8015B	
Surrogate: 1-Chlorooctadecane			89.9 %	37.6-147		8032204	MS	22-Mar-18	8015B	

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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: GC FEDERAL #27
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
28-Mar-18 15:49

AH -2 4'
H800814-11 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			104 %	72-148		8032202	MS	22-Mar-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8032205	MS	23-Mar-18	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	8032205	MS	23-Mar-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8032205	MS	23-Mar-18	8015B	
Surrogate: 1-Chlorooctane			85.6 %	41-142		8032205	MS	23-Mar-18	8015B	
Surrogate: 1-Chlorooctadecane			84.8 %	37.6-147		8032205	MS	23-Mar-18	8015B	

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Analytical Results For:

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

Project: GC FEDERAL #27
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
28-Mar-18 15:49

AH -2 5'
H800814-12 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			108 %	72-148		8032202	MS	22-Mar-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8032205	MS	23-Mar-18	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	8032205	MS	23-Mar-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8032205	MS	23-Mar-18	8015B	
Surrogate: 1-Chlorooctane			76.4 %	41-142		8032205	MS	23-Mar-18	8015B	
Surrogate: 1-Chlorooctadecane			90.3 %	37.6-147		8032205	MS	23-Mar-18	8015B	

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Analytical Results For:

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

Project: GC FEDERAL #27
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
28-Mar-18 15:49

AH -3 0'
H800814-13 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8032202	MS	22-Mar-18	8021B	
<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			106 %	72-148		8032202	MS	22-Mar-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8032205	MS	23-Mar-18	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	8032205	MS	23-Mar-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8032205	MS	23-Mar-18	8015B	
<i>Surrogate: 1-Chlorooctane</i>			86.0 %	41-142		8032205	MS	23-Mar-18	8015B	
<i>Surrogate: 1-Chlorooctadecane</i>			81.7 %	37.6-147		8032205	MS	23-Mar-18	8015B	

Green Analytical Laboratories**Soluble (DI Water Extraction)**

Chloride	11500		1000	mg/kg wet	1000	B803171	JDA	26-Mar-18	EPA300.0	
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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: GC FEDERAL #27
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
28-Mar-18 15:49

AH -3 1'
H800814-14 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8032202	MS	22-Mar-18	8021B	
<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			106 %	72-148		8032202	MS	22-Mar-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8032205	MS	23-Mar-18	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	8032205	MS	23-Mar-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8032205	MS	23-Mar-18	8015B	
<i>Surrogate: 1-Chlorooctane</i>			83.3 %	41-142		8032205	MS	23-Mar-18	8015B	
<i>Surrogate: 1-Chlorooctadecane</i>			81.0 %	37.6-147		8032205	MS	23-Mar-18	8015B	

Green Analytical Laboratories**Soluble (DI Water Extraction)**

Chloride	111		10.0	mg/kg wet	10	B803171	JDA	26-Mar-18	EPA300.0	
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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: GC FEDERAL #27
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
28-Mar-18 15:49

AH -3 2'
H800814-15 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			107 %	72-148		8032202	MS	22-Mar-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8032205	MS	23-Mar-18	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	8032205	MS	23-Mar-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8032205	MS	23-Mar-18	8015B	
Surrogate: 1-Chlorooctane			79.3 %	41-142		8032205	MS	23-Mar-18	8015B	
Surrogate: 1-Chlorooctadecane			73.7 %	37.6-147		8032205	MS	23-Mar-18	8015B	

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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: GC FEDERAL #27
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
28-Mar-18 15:49

AH -3 3'
H800814-16 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			110 %	72-148		8032202	MS	22-Mar-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8032205	MS	23-Mar-18	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	8032205	MS	23-Mar-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8032205	MS	23-Mar-18	8015B	
Surrogate: 1-Chlorooctane			72.0 %	41-142		8032205	MS	23-Mar-18	8015B	
Surrogate: 1-Chlorooctadecane			65.6 %	37.6-147		8032205	MS	23-Mar-18	8015B	

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Project: GC FEDERAL #27
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
28-Mar-18 15:49

AH -3 4'
H800814-17 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			102 %	72-148		8032202	MS	22-Mar-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8032205	MS	23-Mar-18	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	8032205	MS	23-Mar-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8032205	MS	23-Mar-18	8015B	
Surrogate: 1-Chlorooctane			67.6 %	41-142		8032205	MS	23-Mar-18	8015B	
Surrogate: 1-Chlorooctadecane			60.8 %	37.6-147		8032205	MS	23-Mar-18	8015B	

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Analytical Results For:

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

Project: GC FEDERAL #27
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
28-Mar-18 15:49

AH -3 5'
H800814-18 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8032202	MS	22-Mar-18	8021B	
<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			106 %	72-148		8032202	MS	22-Mar-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8032205	MS	23-Mar-18	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	8032205	MS	23-Mar-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8032205	MS	23-Mar-18	8015B	
<i>Surrogate: 1-Chlorooctane</i>			64.2 %	41-142		8032205	MS	23-Mar-18	8015B	
<i>Surrogate: 1-Chlorooctadecane</i>			56.7 %	37.6-147		8032205	MS	23-Mar-18	8015B	

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Analytical Results For:

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

Project: GC FEDERAL #27
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
28-Mar-18 15:49

AH -4 0'
H800814-19 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			105 %	72-148		8032202	MS	22-Mar-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8032205	MS	23-Mar-18	8015B	
DRO >C10-C28*	536		10.0	mg/kg	1	8032205	MS	23-Mar-18	8015B	QM-07, QR-03
EXT DRO >C28-C36	237		10.0	mg/kg	1	8032205	MS	23-Mar-18	8015B	
Surrogate: 1-Chlorooctane			80.6 %	41-142		8032205	MS	23-Mar-18	8015B	
Surrogate: 1-Chlorooctadecane			115 %	37.6-147		8032205	MS	23-Mar-18	8015B	

Green Analytical Laboratories**Soluble (DI Water Extraction)**

Chloride	6250		200	mg/kg wet	200	B803171	JDA	26-Mar-18	EPA300.0	
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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: GC FEDERAL #27
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
28-Mar-18 15:49

AH -4 1'
H800814-20 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			106 %	72-148		8032202	MS	22-Mar-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8032205	MS	23-Mar-18	8015B	
DRO >C10-C28*	20.5		10.0	mg/kg	1	8032205	MS	23-Mar-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8032205	MS	23-Mar-18	8015B	
Surrogate: 1-Chlorooctane			82.1 %	41-142		8032205	MS	23-Mar-18	8015B	
Surrogate: 1-Chlorooctadecane			82.5 %	37.6-147		8032205	MS	23-Mar-18	8015B	

Green Analytical Laboratories**Soluble (DI Water Extraction)**

Chloride	23.0		10.0	mg/kg wet	10	B803171	JDA	26-Mar-18	EPA300.0	
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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: GC FEDERAL #27
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
28-Mar-18 15:49

AH -4 2'
H800814-21 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8032202	MS	22-Mar-18	8021B	
<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			106 %	72-148		8032202	MS	22-Mar-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8032205	MS	23-Mar-18	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	8032205	MS	23-Mar-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8032205	MS	23-Mar-18	8015B	
<i>Surrogate: 1-Chlorooctane</i>			83.4 %	41-142		8032205	MS	23-Mar-18	8015B	
<i>Surrogate: 1-Chlorooctadecane</i>			83.0 %	37.6-147		8032205	MS	23-Mar-18	8015B	

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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: GC FEDERAL #27
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
28-Mar-18 15:49

AH -4 3'
H800814-22 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8032202	MS	22-Mar-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8032202	MS	22-Mar-18	8021B	
<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			105 %	72-148		8032202	MS	22-Mar-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8032205	MS	23-Mar-18	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	8032205	MS	23-Mar-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8032205	MS	23-Mar-18	8015B	
<i>Surrogate: 1-Chlorooctane</i>			86.3 %	41-142		8032205	MS	23-Mar-18	8015B	
<i>Surrogate: 1-Chlorooctadecane</i>			83.7 %	37.6-147		8032205	MS	23-Mar-18	8015B	

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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: GC FEDERAL #27
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
28-Mar-18 15:49

AH -4 4'
H800814-23 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	8032304	MS	23-Mar-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8032304	MS	23-Mar-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8032304	MS	23-Mar-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8032304	MS	23-Mar-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8032304	MS	23-Mar-18	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			97.9 %	72-148		8032304	MS	23-Mar-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8032205	MS	23-Mar-18	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	8032205	MS	23-Mar-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8032205	MS	23-Mar-18	8015B	
Surrogate: 1-Chlorooctane			78.4 %	41-142		8032205	MS	23-Mar-18	8015B	
Surrogate: 1-Chlorooctadecane			75.0 %	37.6-147		8032205	MS	23-Mar-18	8015B	

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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: GC FEDERAL #27
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
28-Mar-18 15:49

AH -4 5'
H800814-24 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	8032304	MS	23-Mar-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8032304	MS	23-Mar-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8032304	MS	23-Mar-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8032304	MS	23-Mar-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8032304	MS	23-Mar-18	8021B	
<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			97.5 %	72-148		8032304	MS	23-Mar-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8032205	MS	23-Mar-18	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	8032205	MS	23-Mar-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8032205	MS	23-Mar-18	8015B	
<i>Surrogate: 1-Chlorooctane</i>			88.1 %	41-142		8032205	MS	23-Mar-18	8015B	
<i>Surrogate: 1-Chlorooctadecane</i>			84.5 %	37.6-147		8032205	MS	23-Mar-18	8015B	

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Analytical Results For:

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

Project: GC FEDERAL #27
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
28-Mar-18 15:49

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 8032201 - Volatiles**Blank (8032201-BLK1)**

Prepared & Analyzed: 22-Mar-18

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)	0.0928		mg/kg	0.100		92.8	72-148			

LCS (8032201-BS1)

Prepared & Analyzed: 22-Mar-18

Benzene	1.94	0.050	mg/kg	2.00		97.1	79.5-124			
Toluene	2.14	0.050	mg/kg	2.00		107	75.5-127			
Ethylbenzene	2.15	0.050	mg/kg	2.00		108	77.7-125			
Total Xylenes	6.63	0.150	mg/kg	6.00		111	70.9-124			
Surrogate: 4-Bromofluorobenzene (PID)	0.0914		mg/kg	0.100		91.4	72-148			

LCS Dup (8032201-BS1)

Prepared & Analyzed: 22-Mar-18

Benzene	1.93	0.050	mg/kg	2.00		96.3	79.5-124	0.862	6.5	
Toluene	2.10	0.050	mg/kg	2.00		105	75.5-127	1.53	7.02	
Ethylbenzene	2.16	0.050	mg/kg	2.00		108	77.7-125	0.164	7.83	
Total Xylenes	6.65	0.150	mg/kg	6.00		111	70.9-124	0.207	7.78	
Surrogate: 4-Bromofluorobenzene (PID)	0.0922		mg/kg	0.100		92.2	72-148			

Batch 8032202 - Volatiles**Blank (8032202-BLK1)**

Prepared & Analyzed: 22-Mar-18

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)	0.102		mg/kg	0.100		102	72-148			

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Project: GC FEDERAL #27
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
28-Mar-18 15:49

Volatile Organic Compounds by EPA Method 8021 - Quality Control**Cardinal Laboratories**

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

Batch 8032202 - Volatiles**LCS (8032202-BS1)**

Prepared & Analyzed: 22-Mar-18

Benzene	1.76	0.050	mg/kg	2.00		88.2	79.5-124			
Toluene	1.97	0.050	mg/kg	2.00		98.5	75.5-127			
Ethylbenzene	2.03	0.050	mg/kg	2.00		101	77.7-125			
Total Xylenes	5.89	0.150	mg/kg	6.00		98.2	70.9-124			
Surrogate: 4-Bromofluorobenzene (PID)	0.102		mg/kg	0.100		102	72-148			

LCS Dup (8032202-BS1)

Prepared & Analyzed: 22-Mar-18

Benzene	1.80	0.050	mg/kg	2.00		90.2	79.5-124	2.24	6.5	
Toluene	2.03	0.050	mg/kg	2.00		101	75.5-127	2.98	7.02	
Ethylbenzene	2.12	0.050	mg/kg	2.00		106	77.7-125	4.45	7.83	
Total Xylenes	6.14	0.150	mg/kg	6.00		102	70.9-124	4.20	7.78	
Surrogate: 4-Bromofluorobenzene (PID)	0.105		mg/kg	0.100		105	72-148			

Batch 8032304 - Volatiles**Blank (8032304-BLK1)**

Prepared & Analyzed: 23-Mar-18

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)	0.0974		mg/kg	0.100		97.4	72-148			

LCS (8032304-BS1)

Prepared & Analyzed: 23-Mar-18

Benzene	1.68	0.050	mg/kg	2.00		84.1	79.5-124			
Toluene	1.92	0.050	mg/kg	2.00		96.2	75.5-127			
Ethylbenzene	2.01	0.050	mg/kg	2.00		100	77.7-125			
Total Xylenes	6.19	0.150	mg/kg	6.00		103	70.9-124			
Surrogate: 4-Bromofluorobenzene (PID)	0.0982		mg/kg	0.100		98.2	72-148			

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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: GC FEDERAL #27
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
28-Mar-18 15:49

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 8032304 - Volatiles**LCS Dup (8032304-BSD1)**

Prepared & Analyzed: 23-Mar-18

Benzene	1.79	0.050	mg/kg	2.00		89.5	79.5-124	6.19	6.5	
Toluene	1.98	0.050	mg/kg	2.00		98.8	75.5-127	2.63	7.02	
Ethylbenzene	2.04	0.050	mg/kg	2.00		102	77.7-125	1.39	7.83	
Total Xylenes	6.33	0.150	mg/kg	6.00		105	70.9-124	2.10	7.78	
Surrogate: 4-Bromofluorobenzene (PID)	0.0969		mg/kg	0.100		96.9	72-148			

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Analytical Results For:

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

Project: GC FEDERAL #27
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
28-Mar-18 15:49

Petroleum Hydrocarbons by GC FID - Quality Control**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
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Batch 8032204 - General Prep - Organics**Blank (8032204-BLK1)**

Prepared & Analyzed: 22-Mar-18

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						
EXT DRO >C28-C36	ND	10.0	mg/kg						
Total TPH C6-C28	ND	10.0	mg/kg						
Surrogate: 1-Chlorooctane	51.1		mg/kg	50.0		102		41-142	
Surrogate: 1-Chlorooctadecane	49.3		mg/kg	50.0		98.5		37.6-147	

LCS (8032204-BS1)

Prepared & Analyzed: 22-Mar-18

GRO C6-C10	195	10.0	mg/kg	200		97.7		76.5-133	
DRO >C10-C28	214	10.0	mg/kg	200		107		72.9-138	
Total TPH C6-C28	410	10.0	mg/kg	400		102		78-132	
Surrogate: 1-Chlorooctane	49.8		mg/kg	50.0		99.6		41-142	
Surrogate: 1-Chlorooctadecane	52.3		mg/kg	50.0		105		37.6-147	

LCS Dup (8032204-BSD1)

Prepared & Analyzed: 22-Mar-18

GRO C6-C10	191	10.0	mg/kg	200		95.4		76.5-133	2.35	20.6
DRO >C10-C28	203	10.0	mg/kg	200		102		72.9-138	5.24	20.6
Total TPH C6-C28	394	10.0	mg/kg	400		98.5		78-132	3.85	18
Surrogate: 1-Chlorooctane	48.7		mg/kg	50.0		97.4		41-142		
Surrogate: 1-Chlorooctadecane	49.9		mg/kg	50.0		99.7		37.6-147		

Batch 8032205 - General Prep - Organics**Blank (8032205-BLK1)**

Prepared: 22-Mar-18 Analyzed: 23-Mar-18

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							
EXT DRO >C28-C36	ND	10.0	mg/kg							
Total TPH C6-C28	ND	10.0	mg/kg							
Surrogate: 1-Chlorooctane	42.6		mg/kg	50.0		85.1		41-142		
Surrogate: 1-Chlorooctadecane	43.6		mg/kg	50.0		87.2		37.6-147		

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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: GC FEDERAL #27
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
28-Mar-18 15:49

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 8032205 - General Prep - Organics**LCS (8032205-BS1)**

Prepared: 22-Mar-18 Analyzed: 23-Mar-18

GRO C6-C10	181	10.0	mg/kg	200		90.7	76.5-133			
DRO >C10-C28	197	10.0	mg/kg	200		98.4	72.9-138			
Total TPH C6-C28	378	10.0	mg/kg	400		94.5	78-132			
Surrogate: 1-Chlorooctane	45.9		mg/kg	50.0		91.7	41-142			
Surrogate: 1-Chlorooctadecane	50.6		mg/kg	50.0		101	37.6-147			

LCS Dup (8032205-BS1)

Prepared: 22-Mar-18 Analyzed: 23-Mar-18

GRO C6-C10	192	10.0	mg/kg	200		96.0	76.5-133	5.62	20.6	
DRO >C10-C28	208	10.0	mg/kg	200		104	72.9-138	5.65	20.6	
Total TPH C6-C28	400	10.0	mg/kg	400		100	78-132	5.64	18	
Surrogate: 1-Chlorooctane	45.7		mg/kg	50.0		91.3	41-142			
Surrogate: 1-Chlorooctadecane	51.1		mg/kg	50.0		102	37.6-147			

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Analytical Results For:

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

Project: GC FEDERAL #27
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
28-Mar-18 15:49

Soluble (DI Water Extraction) - Quality Control**Green Analytical Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B803170 - General Prep - Wet Chem**Blank (B803170-BLK1)**

Prepared & Analyzed: 23-Mar-18

Chloride	ND	10.0	mg/kg wet							
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LCS (B803170-BS1)

Prepared & Analyzed: 23-Mar-18

Chloride	234	10.0	mg/kg wet	250		93.6	85-115			
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LCS Dup (B803170-BSD1)

Prepared & Analyzed: 23-Mar-18

Chloride	236	10.0	mg/kg wet	250		94.6	85-115	1.06	20	
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Batch B803171 - General Prep - Wet Chem**Blank (B803171-BLK1)**

Prepared: 23-Mar-18 Analyzed: 26-Mar-18

Chloride	ND	1.00	mg/kg wet							
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LCS (B803171-BS1)

Prepared: 23-Mar-18 Analyzed: 26-Mar-18

Chloride	239	10.0	mg/kg wet	250		95.5	85-115			
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LCS Dup (B803171-BSD1)

Prepared: 23-Mar-18 Analyzed: 26-Mar-18

Chloride	239	10.0	mg/kg wet	250		95.6	85-115	0.142	20	
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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 of 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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A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager



CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: Concho Resources				BILL TO				ANALYSIS REQUEST																																	
Project Manager: Sheldon Hitchcock				P.O. #:				TPH 8015M extended BTEx 8021B Chlorides EPA 300																																	
Address: 2407 Pecos Avenue				Company: COG																																					
City: Artesia State: NM Zip: 88210				Attn: Robert McNeill																																					
Phone #: 575-703-6475 Fax #:				Address:																																					
Project #: Project Owner: Concho				City:																																					
Project Name: GC Federal #27				State: Zip:																																					
Project Location: Eddy Co.				Phone #:																																					
Sampler Name: S. Hitchcock				Fax #:				TPH 8015M extended BTEx 8021B Chlorides EPA 300																																	
FOR LAB USE ONLY				MATRIX																PRESERV.				SAMPLING																	
Lab I.D.		Sample I.D.		GRAB OR (C)OMP.		# CONTAINERS														GROUNDWATER		WASTEWATER		SOIL		OIL		SLUDGE		OTHER:		ACID/BASE:		ICE / COOL		OTHER:		DATE		TIME	
1800814				G		1																																3/20/18		12:30	
2		AH-10'		G		1																																		12:32	
3		AH-11'		G		1																																		12:34	
4		AH-12'		G		1																																		12:36	
5		AH-13'		G		1																																		12:38	
6		AH-14'		G		1																																		12:40	
7		AH-15'		G		1																																		12:42	
8		AH-20'		G		1																																		12:44	
9		AH-21'		G		1																																		12:46	
10		AH-22'		G		1																						12:48													
11		AH-23'		G		1																						12:50													
12		AH-24'		G		1																						12:52													
PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after 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 services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.																																									
Relinquished By: Sheldon Hitchcock				Date: 3-21-18				Received By: [Signature]				Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No				Add'l Phone #:																									
Relinquished By:				Time: 12:00				Received By:				Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No				Add'l Fax #:																									
Delivered By: (Circle One) 2.98				Sample Condition				CHECKED BY: (Initials)				STOP CI IF ≤ 600 mg/kg																													
Sampler - UPS - Bus - Other: Corrected 2.85C				Cool Intact Yes No				TO #75																																	

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

(575) 393-2326 FAX (575) 393-2476		BILL TO		ANALYSIS REQUEST																					
Company Name: Concho Resources		P.O. #:		<div>TPH 8015 extended BTX 80213 Chlorides EPA 300</div>																					
Project Manager: Sheldon Hitchcock		Company: COG																							
Address: 2407 Pecos Avenue		Attn: Robert McNeill																							
City: Artesia State: NM Zip: 88210		Address:																							
Phone #: 575-703-6475 Fax #:		City:																							
Project #: Project Owner: Concho		State: Zip:																							
Project Name: GC Federal #27		Phone #:																							
Project Location: Eddy Co.		Fax #:																							
Sampler Name: S. Hitchcock																									
FOR LAB USE ONLY																									
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX					PRESERV.		SAMPLING														
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:													DATE
11	AH-2 4'	G	1			/				/		8/20/18	12:54	✓											
12	AH-2 5'	G	1			/				/			12:56	✓											
13	AH-3 0'	G	1			/				/			1:00	⊗											
14	AH-3 1'	G	1			/				/			1:02	⊗											
15	AH-3 2'	G	1			/				/			1:04	⊗											
16	AH-3 3'	G	1			/				/			1:06	⊗											
17	AH-3 4'	G	1			/				/			1:08	⊗											
18	AH-3 5'	G	1			/				/			1:10	⊗											
19	AH-4 0'	G	1			/				/			1:15	⊗											
20	AH-4 1'	G	1			/				/			1:17	⊗											
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Relinquished By: Sheldon Acain		Date: 3-21-18		Received By: [Signature]		Time: 12:00		Date:		Received By:		Time:		Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No		Add'l Phone #:									
Relinquished By:		Date:		Received By:		Time:		Date:		Received By:		Time:		Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No		Add'l Fax #:									
Delivered By: (Circle One)		Sample Condition		CHECKED BY:		Stop Cl- if ≤ 600 mg/kg																			
Sampler - UPS - Bus - Other:		Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> No		(Initials) TO-#15																					



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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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[illegible]

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Relinquished By:		Date:	Received By:	Phone Result:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
Sherry Davis		Time:	Sherry Davis	Fax Result:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #:
Relinquished By:		Date:		REMARKS:		
		Time:		Stop CI if ≤ 600 mg/mg		
Delivered By: (Circle One)		Sample Condition	CHECKED BY:			
Sampler - UPS - Bus - Other:		Cool Intact	(Initials)			
2.9°C		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	TCH			
Corrected 3.85°C		<input type="checkbox"/> Yes <input type="checkbox"/> No				

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Appendix D

Laboratory Analytical Reports



Environment Testing

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ANALYTICAL REPORT

PREPARED FOR

Attn: Justin Nixon
ARCADIS US Inc
1004 North Big Spring
Suite 300
Midland, Texas 79701

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JOB DESCRIPTION

GC Fed #27
SDG NUMBER Lea County, NM

JOB NUMBER

880-34336-1

Eurofins Midland
1211 W. Florida Ave
Midland TX 79701

See page two for job notes and contact information.

Eurofins Midland

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



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Authorized for release by
John Builes, Project Manager
John.Builes@et.eurofinsus.com
(561)558-4549

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Definitions/Glossary

Client: ARCADIS US Inc
Project/Site: GC Fed #27

Job ID: 880-34336-1
SDG: Lea County, NM

Qualifiers

GC VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
⌘	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: ARCADIS US Inc
Project/Site: GC Fed #27

Job ID: 880-34336-1
SDG: Lea County, NM

Job ID: 880-34336-1**Laboratory: Eurofins Midland****Narrative****Job Narrative
880-34336-1**

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method. Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 10/12/2023 8:58 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.5°C

Receipt Exceptions

The following samples were received and analyzed from an unpreserved bulk soil jar: S-1-101023 (880-34336-1), S-2-101023 (880-34336-2), S-3-101023 (880-34336-3) and S-4-101023 (880-34336-4).

GC VOA

Method 8021B: Surrogate recovery for the following samples were outside control limits: S-2-101023 (880-34336-2), S-3-101023 (880-34336-3) and (CCV 880-64554/20). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA

Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-64532 and analytical batch 880-64515 was outside the upper control limits.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (CCV 880-64515/5) and (LCS 880-64532/2-A). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: S-1-101023 (880-34336-1), S-2-101023 (880-34336-2), S-3-101023 (880-34336-3) and S-4-101023 (880-34336-4). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: The continuing calibration verification (CCV) associated with batch 880-64515 recovered above the upper control limit for Gasoline Range Organics (GRO)-C6-C10 and Diesel Range Organics (Over C10-C28) due to being inadvertently double spiked. Percent recoveries are based on the amount spiked. The associated samples are impacted: (CCV 880-64515/20) and (CCV 880-64515/31).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client Sample Results

Client: ARCADIS US Inc
Project/Site: GC Fed #27

Job ID: 880-34336-1
SDG: Lea County, NM

Client Sample ID: S-1-101023

Lab Sample ID: 880-34336-1

Date Collected: 10/10/23 09:00

Matrix: Solid

Date Received: 10/12/23 08:58

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000387	U	0.00201	0.000387	mg/Kg		10/12/23 13:17	10/12/23 23:56	1
Toluene	<0.000459	U	0.00201	0.000459	mg/Kg		10/12/23 13:17	10/12/23 23:56	1
Ethylbenzene	<0.000568	U	0.00201	0.000568	mg/Kg		10/12/23 13:17	10/12/23 23:56	1
m-Xylene & p-Xylene	<0.00102	U	0.00402	0.00102	mg/Kg		10/12/23 13:17	10/12/23 23:56	1
o-Xylene	<0.000346	U	0.00201	0.000346	mg/Kg		10/12/23 13:17	10/12/23 23:56	1
Xylenes, Total	<0.00102	U	0.00402	0.00102	mg/Kg		10/12/23 13:17	10/12/23 23:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	118		70 - 130	10/12/23 13:17	10/12/23 23:56	1
1,4-Difluorobenzene (Surr)	87		70 - 130	10/12/23 13:17	10/12/23 23:56	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00102	U	0.00402	0.00102	mg/Kg			10/12/23 23:56	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	18.2	J	50.4	15.1	mg/Kg			10/12/23 16:04	1

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	18.2	J	50.4	15.1	mg/Kg		10/12/23 10:42	10/12/23 16:04	1
Diesel Range Organics (Over C10-C28)	<15.1	U	50.4	15.1	mg/Kg		10/12/23 10:42	10/12/23 16:04	1
Oil Range Organics (Over C28-C36)	<15.1	U	50.4	15.1	mg/Kg		10/12/23 10:42	10/12/23 16:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	142	S1+	70 - 130	10/12/23 10:42	10/12/23 16:04	1
o-Terphenyl	137	S1+	70 - 130	10/12/23 10:42	10/12/23 16:04	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	110		5.02	0.397	mg/Kg			10/17/23 14:22	1

Client Sample ID: S-2-101023

Lab Sample ID: 880-34336-2

Date Collected: 10/10/23 09:20

Matrix: Solid

Date Received: 10/12/23 08:58

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.000674	J	0.00200	0.000386	mg/Kg		10/12/23 13:17	10/13/23 00:22	1
Toluene	<0.000457	U	0.00200	0.000457	mg/Kg		10/12/23 13:17	10/13/23 00:22	1
Ethylbenzene	<0.000566	U	0.00200	0.000566	mg/Kg		10/12/23 13:17	10/13/23 00:22	1
m-Xylene & p-Xylene	<0.00101	U	0.00401	0.00101	mg/Kg		10/12/23 13:17	10/13/23 00:22	1
o-Xylene	<0.000345	U	0.00200	0.000345	mg/Kg		10/12/23 13:17	10/13/23 00:22	1
Xylenes, Total	<0.00101	U	0.00401	0.00101	mg/Kg		10/12/23 13:17	10/13/23 00:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	139	S1+	70 - 130	10/12/23 13:17	10/13/23 00:22	1
1,4-Difluorobenzene (Surr)	104		70 - 130	10/12/23 13:17	10/13/23 00:22	1

Eurofins Midland

Client Sample Results

Client: ARCADIS US Inc
Project/Site: GC Fed #27

Job ID: 880-34336-1
SDG: Lea County, NM

Client Sample ID: S-2-101023

Lab Sample ID: 880-34336-2

Date Collected: 10/10/23 09:20

Matrix: Solid

Date Received: 10/12/23 08:58

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00101	U	0.00401	0.00101	mg/Kg			10/13/23 00:22	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	18.2	J	49.8	14.9	mg/Kg			10/12/23 16:26	1

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	18.2	J	49.8	14.9	mg/Kg		10/12/23 10:42	10/12/23 16:26	1
Diesel Range Organics (Over C10-C28)	<14.9	U	49.8	14.9	mg/Kg		10/12/23 10:42	10/12/23 16:26	1
Oil Range Organics (Over C28-C36)	<14.9	U	49.8	14.9	mg/Kg		10/12/23 10:42	10/12/23 16:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	146	S1+	70 - 130				10/12/23 10:42	10/12/23 16:26	1
o-Terphenyl	139	S1+	70 - 130				10/12/23 10:42	10/12/23 16:26	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	261		5.04	0.398	mg/Kg			10/17/23 14:39	1

Client Sample ID: S-3-101023

Lab Sample ID: 880-34336-3

Date Collected: 10/10/23 09:40

Matrix: Solid

Date Received: 10/12/23 08:58

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000384	U	0.00200	0.000384	mg/Kg		10/12/23 13:17	10/13/23 00:48	1
Toluene	<0.000455	U	0.00200	0.000455	mg/Kg		10/12/23 13:17	10/13/23 00:48	1
Ethylbenzene	<0.000564	U	0.00200	0.000564	mg/Kg		10/12/23 13:17	10/13/23 00:48	1
m-Xylene & p-Xylene	<0.00101	U	0.00399	0.00101	mg/Kg		10/12/23 13:17	10/13/23 00:48	1
o-Xylene	<0.000343	U	0.00200	0.000343	mg/Kg		10/12/23 13:17	10/13/23 00:48	1
Xylenes, Total	<0.00101	U	0.00399	0.00101	mg/Kg		10/12/23 13:17	10/13/23 00:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	164	S1+	70 - 130				10/12/23 13:17	10/13/23 00:48	1
1,4-Difluorobenzene (Surr)	119		70 - 130				10/12/23 13:17	10/13/23 00:48	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00101	U	0.00399	0.00101	mg/Kg			10/13/23 00:48	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	38.2	J	49.7	14.9	mg/Kg			10/12/23 16:48	1

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	16.0	J	49.7	14.9	mg/Kg		10/12/23 10:42	10/12/23 16:48	1
Diesel Range Organics (Over C10-C28)	22.2	J	49.7	14.9	mg/Kg		10/12/23 10:42	10/12/23 16:48	1

Eurofins Midland

Client Sample Results

Client: ARCADIS US Inc
Project/Site: GC Fed #27

Job ID: 880-34336-1
SDG: Lea County, NM

Client Sample ID: S-3-101023

Lab Sample ID: 880-34336-3

Date Collected: 10/10/23 09:40

Matrix: Solid

Date Received: 10/12/23 08:58

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Oil Range Organics (Over C28-C36)	<14.9	U	49.7	14.9	mg/Kg		10/12/23 10:42	10/12/23 16:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	151	S1+	70 - 130				10/12/23 10:42	10/12/23 16:48	1
o-Terphenyl	143	S1+	70 - 130				10/12/23 10:42	10/12/23 16:48	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	86.9		5.05	0.399	mg/Kg			10/17/23 14:45	1

Client Sample ID: S-4-101023

Lab Sample ID: 880-34336-4

Date Collected: 10/10/23 10:00

Matrix: Solid

Date Received: 10/12/23 08:58

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000384	U	0.00200	0.000384	mg/Kg		10/12/23 16:59	10/12/23 19:48	1
Toluene	<0.000455	U	0.00200	0.000455	mg/Kg		10/12/23 16:59	10/12/23 19:48	1
Ethylbenzene	<0.000564	U	0.00200	0.000564	mg/Kg		10/12/23 16:59	10/12/23 19:48	1
m-Xylene & p-Xylene	<0.00101	U	0.00399	0.00101	mg/Kg		10/12/23 16:59	10/12/23 19:48	1
o-Xylene	<0.000343	U	0.00200	0.000343	mg/Kg		10/12/23 16:59	10/12/23 19:48	1
Xylenes, Total	<0.00101	U	0.00399	0.00101	mg/Kg		10/12/23 16:59	10/12/23 19:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	112		70 - 130				10/12/23 16:59	10/12/23 19:48	1
1,4-Difluorobenzene (Surr)	102		70 - 130				10/12/23 16:59	10/12/23 19:48	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00101	U	0.00399	0.00101	mg/Kg			10/12/23 19:48	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	33.4	J	49.6	14.9	mg/Kg			10/12/23 17:10	1

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	16.3	J	49.6	14.9	mg/Kg		10/12/23 10:42	10/12/23 17:10	1
Diesel Range Organics (Over C10-C28)	17.1	J	49.6	14.9	mg/Kg		10/12/23 10:42	10/12/23 17:10	1
Oil Range Organics (Over C28-C36)	<14.9	U	49.6	14.9	mg/Kg		10/12/23 10:42	10/12/23 17:10	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	156	S1+	70 - 130				10/12/23 10:42	10/12/23 17:10	1
o-Terphenyl	143	S1+	70 - 130				10/12/23 10:42	10/12/23 17:10	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	72.7		5.01	0.396	mg/Kg			10/17/23 14:51	1

Eurofins Midland

Surrogate Summary

Client: ARCADIS US Inc
Project/Site: GC Fed #27

Job ID: 880-34336-1
SDG: Lea County, NM

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
880-34336-1	S-1-101023	118	87
880-34336-2	S-2-101023	139 S1+	104
880-34336-3	S-3-101023	164 S1+	119
880-34336-4	S-4-101023	112	102
LCS 880-64507/1-A	Lab Control Sample	103	96
LCS 880-64555/1-A	Lab Control Sample	112	94
LCSD 880-64507/2-A	Lab Control Sample Dup	116	94
LCSD 880-64555/2-A	Lab Control Sample Dup	114	90
MB 880-64507/5-A	Method Blank	111	123
MB 880-64555/5-A	Method Blank	77	84
Surrogate Legend			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
880-34336-1	S-1-101023	142 S1+	137 S1+
880-34336-2	S-2-101023	146 S1+	139 S1+
880-34336-3	S-3-101023	151 S1+	143 S1+
880-34336-4	S-4-101023	156 S1+	143 S1+
LCS 880-64532/2-A	Lab Control Sample	117	136 S1+
LCSD 880-64532/3-A	Lab Control Sample Dup	82	88
MB 880-64532/1-A	Method Blank	196 S1+	182 S1+
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

QC Sample Results

Client: ARCADIS US Inc
Project/Site: GC Fed #27

Job ID: 880-34336-1
SDG: Lea County, NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-64507/5-A

Matrix: Solid

Analysis Batch: 64524

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 64507

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000385	U	0.00200	0.000385	mg/Kg		10/11/23 16:59	10/12/23 12:01	1
Toluene	<0.000456	U	0.00200	0.000456	mg/Kg		10/11/23 16:59	10/12/23 12:01	1
Ethylbenzene	<0.000565	U	0.00200	0.000565	mg/Kg		10/11/23 16:59	10/12/23 12:01	1
m-Xylene & p-Xylene	<0.00101	U	0.00400	0.00101	mg/Kg		10/11/23 16:59	10/12/23 12:01	1
o-Xylene	<0.000344	U	0.00200	0.000344	mg/Kg		10/11/23 16:59	10/12/23 12:01	1
Xylenes, Total	<0.00101	U	0.00400	0.00101	mg/Kg		10/11/23 16:59	10/12/23 12:01	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	111		70 - 130	10/11/23 16:59	10/12/23 12:01	1
1,4-Difluorobenzene (Surr)	123		70 - 130	10/11/23 16:59	10/12/23 12:01	1

Lab Sample ID: LCS 880-64507/1-A

Matrix: Solid

Analysis Batch: 64524

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 64507

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1141		mg/Kg		114	70 - 130
Toluene	0.100	0.09752		mg/Kg		98	70 - 130
Ethylbenzene	0.100	0.1096		mg/Kg		110	70 - 130
m-Xylene & p-Xylene	0.200	0.2067		mg/Kg		103	70 - 130
o-Xylene	0.100	0.09835		mg/Kg		98	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	103		70 - 130
1,4-Difluorobenzene (Surr)	96		70 - 130

Lab Sample ID: LCSD 880-64507/2-A

Matrix: Solid

Analysis Batch: 64524

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 64507

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1044		mg/Kg		104	70 - 130	9	35
Toluene	0.100	0.09198		mg/Kg		92	70 - 130	6	35
Ethylbenzene	0.100	0.09293		mg/Kg		93	70 - 130	16	35
m-Xylene & p-Xylene	0.200	0.1806		mg/Kg		90	70 - 130	13	35
o-Xylene	0.100	0.08517		mg/Kg		85	70 - 130	14	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	116		70 - 130
1,4-Difluorobenzene (Surr)	94		70 - 130

Lab Sample ID: MB 880-64555/5-A

Matrix: Solid

Analysis Batch: 64554

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 64555

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000385	U	0.00200	0.000385	mg/Kg		10/12/23 13:17	10/12/23 16:08	1
Toluene	<0.000456	U	0.00200	0.000456	mg/Kg		10/12/23 13:17	10/12/23 16:08	1

Eurofins Midland

QC Sample Results

Client: ARCADIS US Inc
Project/Site: GC Fed #27

Job ID: 880-34336-1
SDG: Lea County, NM

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: MB 880-64555/5-A

Matrix: Solid

Analysis Batch: 64554

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 64555

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	<0.000565	U	0.00200	0.000565	mg/Kg		10/12/23 13:17	10/12/23 16:08	1
m-Xylene & p-Xylene	<0.00101	U	0.00400	0.00101	mg/Kg		10/12/23 13:17	10/12/23 16:08	1
o-Xylene	<0.000344	U	0.00200	0.000344	mg/Kg		10/12/23 13:17	10/12/23 16:08	1
Xylenes, Total	<0.00101	U	0.00400	0.00101	mg/Kg		10/12/23 13:17	10/12/23 16:08	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	77		70 - 130	10/12/23 13:17	10/12/23 16:08	1
1,4-Difluorobenzene (Surr)	84		70 - 130	10/12/23 13:17	10/12/23 16:08	1

Lab Sample ID: LCS 880-64555/1-A

Matrix: Solid

Analysis Batch: 64554

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 64555

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.07007		mg/Kg		70	70 - 130
Toluene	0.100	0.08481		mg/Kg		85	70 - 130
Ethylbenzene	0.100	0.08053		mg/Kg		81	70 - 130
m-Xylene & p-Xylene	0.200	0.1546		mg/Kg		77	70 - 130
o-Xylene	0.100	0.08348		mg/Kg		83	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	112		70 - 130
1,4-Difluorobenzene (Surr)	94		70 - 130

Lab Sample ID: LCSD 880-64555/2-A

Matrix: Solid

Analysis Batch: 64554

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 64555

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.07465		mg/Kg		75	70 - 130	6	35
Toluene	0.100	0.08940		mg/Kg		89	70 - 130	5	35
Ethylbenzene	0.100	0.08300		mg/Kg		83	70 - 130	3	35
m-Xylene & p-Xylene	0.200	0.1626		mg/Kg		81	70 - 130	5	35
o-Xylene	0.100	0.09340		mg/Kg		93	70 - 130	11	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	114		70 - 130
1,4-Difluorobenzene (Surr)	90		70 - 130

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 880-64532/1-A

Matrix: Solid

Analysis Batch: 64515

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 64532

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<15.0	U	50.0	15.0	mg/Kg		10/12/23 08:00	10/12/23 08:09	1

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QC Sample Results

Client: ARCADIS US Inc
Project/Site: GC Fed #27

Job ID: 880-34336-1
SDG: Lea County, NM

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: MB 880-64532/1-A

Matrix: Solid

Analysis Batch: 64515

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 64532

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Diesel Range Organics (Over C10-C28)	<15.0	U	50.0	15.0	mg/Kg		10/12/23 08:00	10/12/23 08:09	1
Oil Range Organics (Over C28-C36)	<15.0	U	50.0	15.0	mg/Kg		10/12/23 08:00	10/12/23 08:09	1
Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac			
	%Recovery	Qualifier							
1-Chlorooctane	196	S1+	70 - 130	10/12/23 08:00	10/12/23 08:09	1			
o-Terphenyl	182	S1+	70 - 130	10/12/23 08:00	10/12/23 08:09	1			

Lab Sample ID: LCS 880-64532/2-A

Matrix: Solid

Analysis Batch: 64515

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 64532

Analyte			Spike	LCS	LCS	Unit	D	%Rec	%Rec		
			Added	Result	Qualifier			Limits			
Gasoline Range Organics (GRO)-C6-C10			1000	843.0		mg/Kg		84		70 - 130	
Diesel Range Organics (Over C10-C28)			1000	878.5		mg/Kg		88		70 - 130	

Lab Sample ID: LCSD 880-64532/3-A

Matrix: Solid

Analysis Batch: 64515

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 64532

Analyte			Spike	LCSD	LCSD	Unit	D	%Rec	%Rec	RPD	RPD
			Added	Result	Qualifier				Limits		Limit
Gasoline Range Organics (GRO)-C6-C10			1000	798.2		mg/Kg		80	70 - 130	5	20
Diesel Range Organics (Over C10-C28)			1000	772.7		mg/Kg		77	70 - 130	13	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-64572/1-A

Matrix: Solid

Analysis Batch: 64702

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride	<0.395	U	5.00	0.395	mg/Kg			10/17/23 14:05	1

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QC Sample Results

Client: ARCADIS US Inc
Project/Site: GC Fed #27

Job ID: 880-34336-1
SDG: Lea County, NM

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 880-64572/2-A				Client Sample ID: Lab Control Sample							
Matrix: Solid				Prep Type: Soluble							
Analysis Batch: 64702											
Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	247.1		mg/Kg		99	90 - 110		

Lab Sample ID: LCSD 880-64572/3-A				Client Sample ID: Lab Control Sample Dup							
Matrix: Solid				Prep Type: Soluble							
Analysis Batch: 64702											
Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	247.7		mg/Kg		99	90 - 110	0	20

Lab Sample ID: 880-34336-1 MS				Client Sample ID: S-1-101023							
Matrix: Solid				Prep Type: Soluble							
Analysis Batch: 64702											
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	110		251	358.3		mg/Kg		99	90 - 110		

Lab Sample ID: 880-34336-1 MSD				Client Sample ID: S-1-101023							
Matrix: Solid				Prep Type: Soluble							
Analysis Batch: 64702											
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	110		251	358.5		mg/Kg		99	90 - 110	0	20

QC Association Summary

Client: ARCADIS US Inc
Project/Site: GC Fed #27

Job ID: 880-34336-1
SDG: Lea County, NM

GC VOA

Prep Batch: 64507

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-34336-4	S-4-101023	Total/NA	Solid	5030B	
MB 880-64507/5-A	Method Blank	Total/NA	Solid	5030B	
LCS 880-64507/1-A	Lab Control Sample	Total/NA	Solid	5030B	
LCSD 880-64507/2-A	Lab Control Sample Dup	Total/NA	Solid	5030B	

Analysis Batch: 64524

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-34336-4	S-4-101023	Total/NA	Solid	8021B	64507
MB 880-64507/5-A	Method Blank	Total/NA	Solid	8021B	64507
LCS 880-64507/1-A	Lab Control Sample	Total/NA	Solid	8021B	64507
LCSD 880-64507/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	64507

Analysis Batch: 64554

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-34336-1	S-1-101023	Total/NA	Solid	8021B	64555
880-34336-2	S-2-101023	Total/NA	Solid	8021B	64555
880-34336-3	S-3-101023	Total/NA	Solid	8021B	64555
MB 880-64555/5-A	Method Blank	Total/NA	Solid	8021B	64555
LCS 880-64555/1-A	Lab Control Sample	Total/NA	Solid	8021B	64555
LCSD 880-64555/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	64555

Prep Batch: 64555

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-34336-1	S-1-101023	Total/NA	Solid	5030B	
880-34336-2	S-2-101023	Total/NA	Solid	5030B	
880-34336-3	S-3-101023	Total/NA	Solid	5030B	
MB 880-64555/5-A	Method Blank	Total/NA	Solid	5030B	
LCS 880-64555/1-A	Lab Control Sample	Total/NA	Solid	5030B	
LCSD 880-64555/2-A	Lab Control Sample Dup	Total/NA	Solid	5030B	

Analysis Batch: 64672

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-34336-1	S-1-101023	Total/NA	Solid	Total BTEX	
880-34336-2	S-2-101023	Total/NA	Solid	Total BTEX	
880-34336-3	S-3-101023	Total/NA	Solid	Total BTEX	
880-34336-4	S-4-101023	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 64515

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-34336-1	S-1-101023	Total/NA	Solid	8015B NM	64532
880-34336-2	S-2-101023	Total/NA	Solid	8015B NM	64532
880-34336-3	S-3-101023	Total/NA	Solid	8015B NM	64532
880-34336-4	S-4-101023	Total/NA	Solid	8015B NM	64532
MB 880-64532/1-A	Method Blank	Total/NA	Solid	8015B NM	64532
LCS 880-64532/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	64532
LCSD 880-64532/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	64532

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QC Association Summary

Client: ARCADIS US Inc
Project/Site: GC Fed #27

Job ID: 880-34336-1
SDG: Lea County, NM

GC Semi VOA

Prep Batch: 64532

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-34336-1	S-1-101023	Total/NA	Solid	8015NM Prep	
880-34336-2	S-2-101023	Total/NA	Solid	8015NM Prep	
880-34336-3	S-3-101023	Total/NA	Solid	8015NM Prep	
880-34336-4	S-4-101023	Total/NA	Solid	8015NM Prep	
MB 880-64532/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-64532/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-64532/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	

Analysis Batch: 64658

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-34336-1	S-1-101023	Total/NA	Solid	8015 NM	
880-34336-2	S-2-101023	Total/NA	Solid	8015 NM	
880-34336-3	S-3-101023	Total/NA	Solid	8015 NM	
880-34336-4	S-4-101023	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 64572

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-34336-1	S-1-101023	Soluble	Solid	DI Leach	
880-34336-2	S-2-101023	Soluble	Solid	DI Leach	
880-34336-3	S-3-101023	Soluble	Solid	DI Leach	
880-34336-4	S-4-101023	Soluble	Solid	DI Leach	
MB 880-64572/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-64572/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-64572/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-34336-1 MS	S-1-101023	Soluble	Solid	DI Leach	
880-34336-1 MSD	S-1-101023	Soluble	Solid	DI Leach	

Analysis Batch: 64702

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-34336-1	S-1-101023	Soluble	Solid	300.0	64572
880-34336-2	S-2-101023	Soluble	Solid	300.0	64572
880-34336-3	S-3-101023	Soluble	Solid	300.0	64572
880-34336-4	S-4-101023	Soluble	Solid	300.0	64572
MB 880-64572/1-A	Method Blank	Soluble	Solid	300.0	64572
LCS 880-64572/2-A	Lab Control Sample	Soluble	Solid	300.0	64572
LCSD 880-64572/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	64572
880-34336-1 MS	S-1-101023	Soluble	Solid	300.0	64572
880-34336-1 MSD	S-1-101023	Soluble	Solid	300.0	64572

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Lab Chronicle

Client: ARCADIS US Inc
Project/Site: GC Fed #27

Job ID: 880-34336-1
SDG: Lea County, NM

Client Sample ID: S-1-101023
Date Collected: 10/10/23 09:00
Date Received: 10/12/23 08:58

Lab Sample ID: 880-34336-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			4.97 g	5 mL	64555	10/12/23 13:17	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	64554	10/12/23 23:56	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			64672	10/12/23 23:56	SM	EET MID
Total/NA	Analysis	8015 NM		1			64658	10/12/23 16:04	SM	EET MID
Total/NA	Prep	8015NM Prep			9.93 g	10 mL	64532	10/12/23 10:42	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	64515	10/12/23 16:04	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	64572	10/12/23 14:20	AG	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	64702	10/17/23 14:22	CH	EET MID

Client Sample ID: S-2-101023
Date Collected: 10/10/23 09:20
Date Received: 10/12/23 08:58

Lab Sample ID: 880-34336-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			4.99 g	5 mL	64555	10/12/23 13:17	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	64554	10/13/23 00:22	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			64672	10/13/23 00:22	SM	EET MID
Total/NA	Analysis	8015 NM		1			64658	10/12/23 16:26	SM	EET MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	64532	10/12/23 10:42	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	64515	10/12/23 16:26	SM	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	64572	10/12/23 14:20	AG	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	64702	10/17/23 14:39	CH	EET MID

Client Sample ID: S-3-101023
Date Collected: 10/10/23 09:40
Date Received: 10/12/23 08:58

Lab Sample ID: 880-34336-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			5.01 g	5 mL	64555	10/12/23 13:17	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	64554	10/13/23 00:48	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			64672	10/13/23 00:48	SM	EET MID
Total/NA	Analysis	8015 NM		1			64658	10/12/23 16:48	SM	EET MID
Total/NA	Prep	8015NM Prep			10.07 g	10 mL	64532	10/12/23 10:42	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	64515	10/12/23 16:48	SM	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	64572	10/12/23 14:20	AG	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	64702	10/17/23 14:45	CH	EET MID

Client Sample ID: S-4-101023
Date Collected: 10/10/23 10:00
Date Received: 10/12/23 08:58

Lab Sample ID: 880-34336-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			5.01 g	5 mL	64507	10/12/23 16:59	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	64524	10/12/23 19:48	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			64672	10/12/23 19:48	SM	EET MID

Eurofins Midland

Lab Chronicle

Client: ARCADIS US Inc
Project/Site: GC Fed #27

Job ID: 880-34336-1
SDG: Lea County, NM

Client Sample ID: S-4-101023
Date Collected: 10/10/23 10:00
Date Received: 10/12/23 08:58

Lab Sample ID: 880-34336-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			64658	10/12/23 17:10	SM	EET MID
Total/NA	Prep	8015NM Prep			10.09 g	10 mL	64532	10/12/23 10:42	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	64515	10/12/23 17:10	SM	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	64572	10/12/23 14:20	AG	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	64702	10/17/23 14:51	CH	EET MID

Laboratory References:
EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: ARCADIS US Inc
Project/Site: GC Fed #27

Job ID: 880-34336-1
SDG: Lea County, NM

Laboratory: Eurofins Midland

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

Method Summary

Client: ARCADIS US Inc
Project/Site: GC Fed #27

Job ID: 880-34336-1
SDG: Lea County, NM

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	EET MID
Total BTEX	Total BTEX Calculation	TAL SOP	EET MID
8015 NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
300.0	Anions, Ion Chromatography	EPA	EET MID
5030B	Purge and Trap	SW846	EET MID
8015NM Prep	Microextraction	SW846	EET MID
DI Leach	Deionized Water Leaching Procedure	ASTM	EET MID

Protocol References:

- ASTM = ASTM International
- EPA = US Environmental Protection Agency
- SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
- TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

- EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Sample Summary

Client: ARCADIS US Inc
Project/Site: GC Fed #27

Job ID: 880-34336-1
SDG: Lea County, NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-34336-1	S-1-101023	Solid	10/10/23 09:00	10/12/23 08:58
880-34336-2	S-2-101023	Solid	10/10/23 09:20	10/12/23 08:58
880-34336-3	S-3-101023	Solid	10/10/23 09:40	10/12/23 08:58
880-34336-4	S-4-101023	Solid	10/10/23 10:00	10/12/23 08:58

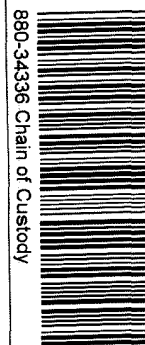
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Eurofins Midland

1211 W Florida Ave
Midland, TX 79701
Phone (432) 704-5440

Chain of Custody Record

Client Information		Sample		Lab PM		Lab PM		Carrier Tracking No		880-34336 Chain of Custody	
Client Contact: Justin Nixon		Phone: 575-942-0292		Bulles, John		E-Mail: John.Bulles@et.eurofinsus.com		State of Origin: NM		Page 1 of 1	
Company: ARCADIS US Inc		PMSID:		Analysis Requested		Job #:		age:		Page 1 of 1	
Address: 1004 North Big Spring Suite 300		Due Date Requested		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		Total Number of containers		Special Instructions/Note.	
City: Midland		TAT Requested (days) Standard		Sample Date		Sample Time		Sample Type (C=Comp, G=grab)		Matrix (W=water, S=solid, O=other)	
State Zip: TX, 79701		Compliance Project <input type="checkbox"/> Yes <input type="checkbox"/> No		Sample Date		Sample Time		Sample Type (C=Comp, G=grab)		Matrix (W=water, S=solid, O=other)	
Phone: 432-296-9547 (Tel)		PO #: 30197418-03		Sample Date		Sample Time		Sample Type (C=Comp, G=grab)		Matrix (W=water, S=solid, O=other)	
Email: Justin.Nixon@arcadis.com		WO #		Sample Date		Sample Time		Sample Type (C=Comp, G=grab)		Matrix (W=water, S=solid, O=other)	
Project Name: GC Fed #27		Project #: 88001921		Sample Date		Sample Time		Sample Type (C=Comp, G=grab)		Matrix (W=water, S=solid, O=other)	
Site: Lea County, NM		SSOW#:		Sample Date		Sample Time		Sample Type (C=Comp, G=grab)		Matrix (W=water, S=solid, O=other)	
Sample Identification		Sample Date		Sample Time		Sample Type (C=Comp, G=grab)		Matrix (W=water, S=solid, O=other)		Special Instructions/Note.	
5-1-101023		10/10/23		900		G		Solid		X	
5-2-101023		10/10/23		920		G		Solid		X	
5-3-101023		10/10/23		940		G		Solid		X	
5-4-101023		10/10/23		1000		G		Solid		X	
Possible Hazard Identification		Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological <input type="checkbox"/>		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)		Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For <input type="checkbox"/> Months		Special Instructions/AC Requirements		Method of Shipment	
Deliverable Requested I II III IV Other (Specify)		Empty Kit Relinquished by		Date		Time		Received by		Date/Time	
Relinquished by		Michael R. Brown		10/12/23		1855		Company		Arcadis	
Relinquished by		Date/Time		Date/Time		Date/Time		Received by		Date/Time	
Relinquished by		Date/Time		Date/Time		Date/Time		Received by		Date/Time	
Custody Seals Intact		Custody Seal No		Cooler Temperature(s) °C and Other Remarks.		1.3/1.5		Company		Company	



Login Sample Receipt Checklist

Client: ARCADIS US Inc

Job Number: 880-34336-1
SDG Number: Lea County, NM

Login Number: 34336

List Number: 1

Creator: Rodriguez, Leticia

List Source: Eurofins Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

Appendix E

NMOCD Correspondence

From: Tavaréz, Ike <Ike.Tavaréz@conocophillips.com>
Sent: Thursday, April 25, 2024 3:42 PM
To: Nixon, Justin
Subject: FW: [EXTERNAL] RE: COP - NMOCD Spur Letter Request

Arcadis Warning: Exercise caution with email messages from external sources such as this message. Always verify the sender and avoid clicking on links or scanning QR codes unless certain of their authenticity.

fyi

From: Hall, Brittany, EMNRD <Brittany.Hall@emnrd.nm.gov>
Sent: Wednesday, April 24, 2024 9:46 AM
To: Braidy Moulder <boulder@spurenergy.com>
Cc: Tavaréz, Ike <Ike.Tavaréz@conocophillips.com>; Brad Coffey <Brad@spurenergy.com>; Todd Mucha <Todd@spurenergy.com>; Katherine Purvis <katherine.purvis@spurenergy.com>
Subject: RE: [EXTERNAL] RE: COP - NMOCD Spur Letter Request

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Braidy,

Thank you for following up with this email after our conversation yesterday.

Ike,

Please ensure that a copy of this correspondence is included in the deferral requests.

Thank you,

Brittany Hall ● Environmental Specialist
Environmental Bureau Projects Group
EMNRD - Oil Conservation Division
1000 Rio Brazos Road | Aztec, NM 87110
505.517.5333 | Brittany.Hall@emnrd.nm.gov
<http://www.emnrd.nm.gov/ocd/>

Please be advised that the new Digital C-141 is live as of December 1, 2023. Please review the new Digital C-141 submission Dec 1, 2023 Guidance document posted on the EMNRD Website prior to submitting any C-141s. The guidance documents can be found at <https://www.emnrd.nm.gov/ocd/ocd-announcements-and-notifications/> or <https://www.emnrd.nm.gov/ocd/ocd-forms/>.

From: Braidy Moulder <boulder@spurenergy.com>
Sent: Wednesday, April 24, 2024 8:18 AM
To: Hall, Brittany, EMNRD <Brittany.Hall@emnrd.nm.gov>
Cc: Tavaréz, Ike <Ike.Tavaréz@conocophillips.com>; Brad Coffey <Brad@spurenergy.com>; Todd Mucha

<Todd@spurenergy.com>; Katherine Purvis <katherine.purvis@spurenergy.com>

Subject: [EXTERNAL] RE: COP - NMOCD Spur Letter Request

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

Brittany, Spur Energy Partners approves of the granting of the Deferrals for the 2 below listed COG/ConocoPhillips ACO releases. These Deferrals must meet the criteria as set forth by the NMOCD and ultimately be approved by the NMOCD.

Braidy Moulder
EHS Manager
Spur Energy Partners, LLC.
713-264-2517



From: Tavaréz, Ike <Ike.Tavaréz@conocophillips.com>

Sent: Tuesday, April 2, 2024 1:53 PM

To: Braidy Moulder <bmoulder@spurenergy.com>

Subject: FW: COP - NMOCD Spur Letter Request

Braidy,

As discussed, the OCD is requesting a letter from Spur on the deferment sites (COG retained liabilities) that are located on Spur properties. This letter will be submitted with our deferment reports and will be going into the OCD incident files. Tetra Tech has drafted a letter for your review as a go-by. Please review and make any revisions to the letter or send me your version.

Currently, COP has 2 Spur locations and OCD is requesting letters from Spur to approve the deferment plans. I have attached the OCD denials and request. Below are the 2 deferment sites. Please call me if you have questions or need additional information, thanks

- GC Federal 027 (nOY1732453631)
(30-025-38738)
- MC Federal 014 (fAPP2203356307)
(30-025-39264)

Ike Tavaréz, P. G. | Risk Management & Remediation | ConocoPhillips

O:432-685-2573| **C:**432-701-8630 | 600 W. Illinois Avenue, Midland, Texas 79701

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10205 Westheimer Road, Suite 800
Houston
Texas 77042
Phone: 713 953 4800
Fax: 713 977 4620
www.arcadis.com

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District III
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District IV
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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

QUESTIONS

Action 338106

QUESTIONS

Operator: COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701	OGRID: 229137
	Action Number: 338106
	Action Type: [C-141] Deferral Request C-141 (C-141-v-Deferral)

QUESTIONS

Prerequisites	
Incident ID (n#)	nOY1802648272
Incident Name	NOY1802648272 COG GC FED #27 TANK BATTERY @ 30-025-39264
Incident Type	Produced Water Release
Incident Status	Deferral Request Received
Incident Well	[30-025-39264] GC FEDERAL #027

Location of Release Source	
Please answer all the questions in this group.	
Site Name	COG GC FED #27 TANK BATTERY
Date Release Discovered	01/20/2018
Surface Owner	Federal

Incident Details	
Please answer all the questions in this group.	
Incident Type	Produced Water Release
Did this release result in a fire or is the result of a fire	No
Did this release result in any injuries	No
Has this release reached or does it have a reasonable probability of reaching a watercourse	No
Has this release endangered or does it have a reasonable probability of endangering public health	No
Has this release substantially damaged or will it substantially damage property or the environment	No
Is this release of a volume that is or may with reasonable probability be detrimental to fresh water	No

Nature and Volume of Release	
Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.	
Crude Oil Released (bbls) Details	Cause: Overflow - Tank, Pit, Etc. Tank (Any) Crude Oil Released: 1 BBL Recovered: 0 BBL Lost: 1 BBL.
Produced Water Released (bbls) Details	Cause: Overflow - Tank, Pit, Etc. Tank (Any) Produced Water Released: 80 BBL Recovered: 78 BBL Lost: 2 BBL.
Is the concentration of chloride in the produced water >10,000 mg/l	Yes
Condensate Released (bbls) Details	Not answered.
Natural Gas Vented (Mcf) Details	Not answered.
Natural Gas Flared (Mcf) Details	Not answered.
Other Released Details	Not answered.
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	Not answered.

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QUESTIONS, Page 2

Action 338106

QUESTIONS (continued)

Operator: COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701	OGRID:
	229137
	Action Number:
	338106
Action Type:	
[C-141] Deferral Request C-141 (C-141-v-Deferral)	

QUESTIONS

Nature and Volume of Release (continued)	
Is this a gas only submission (i.e. only significant Mcf values reported)	No, according to supplied volumes this does not appear to be a "gas only" report.
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	Yes
Reasons why this would be considered a submission for a notification of a major release	From paragraph A. "Major release" determine using: (1) an unauthorized release of a volume, excluding gases, of 25 barrels or more.
With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.	

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury.

The source of the release has been stopped	True
The impacted area has been secured to protect human health and the environment	True
Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	True
All free liquids and recoverable materials have been removed and managed appropriately	True
If all the actions described above have not been undertaken, explain why	Not answered.

Per Paragraph (4) of Subsection B of 19.15.29.8 NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please prepare and attach a narrative of actions to date in the follow-up C-141 submission. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC), please prepare and attach all information needed for closure evaluation in the follow-up C-141 submission.

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

I hereby agree and sign off to the above statement	Name: Jared Stoffel Title: Scientist Email: jstoffel@trccompanies.com Date: 04/26/2024
--	---

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QUESTIONS, Page 3

Action 338106

QUESTIONS (continued)

Operator: COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701	OGRID:
	229137
	Action Number:
	338106
Action Type:	
[C-141] Deferral Request C-141 (C-141-v-Deferral)	

QUESTIONS

Site Characterization	
<i>Please answer all the questions in this group (only required when seeking remediation plan approval and beyond). This information must be provided to the appropriate district office no later than 90 days after the release discovery date.</i>	
What is the shallowest depth to groundwater beneath the area affected by the release in feet below ground surface (ft bgs)	Between 75 and 100 (ft.)
What method was used to determine the depth to ground water	NM OSE iWaters Database Search
Did this release impact groundwater or surface water	No
What is the minimum distance, between the closest lateral extents of the release and the following surface areas:	
A continuously flowing watercourse or any other significant watercourse	Between 1 and 5 (mi.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Between ½ and 1 (mi.)
An occupied permanent residence, school, hospital, institution, or church	Between 1 and 5 (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between 1 and 5 (mi.)
Any other fresh water well or spring	Between 1 and 5 (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)
A wetland	Between 1 and 5 (mi.)
A subsurface mine	Between 1 and 5 (mi.)
An (non-karst) unstable area	Greater than 5 (mi.)
Categorize the risk of this well / site being in a karst geology	Low
A 100-year floodplain	Between 1 and 5 (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	No

Remediation Plan	
<i>Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.</i>	
Requesting a remediation plan approval with this submission	Yes
<i>Attach a comprehensive report demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined, pursuant to 19.15.29.11 NMAC and 19.15.29.13 NMAC.</i>	
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No
Soil Contamination Sampling: (Provide the highest observable value for each, in milligrams per kilograms.)	
Chloride (EPA 300.0 or SM4500 Cl B)	27300
TPH (GRO+DRO+MRO) (EPA SW-846 Method 8015M)	14769
GRO+DRO (EPA SW-846 Method 8015M)	12639
BTEX (EPA SW-846 Method 8021B or 8260B)	27.8
Benzene (EPA SW-846 Method 8021B or 8260B)	0.2
<i>Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.</i>	
On what estimated date will the remediation commence	10/10/2023
On what date will (or did) the final sampling or liner inspection occur	10/10/2023
On what date will (or was) the remediation complete(d)	10/10/2023
What is the estimated surface area (in square feet) that will be reclaimed	2000
What is the estimated volume (in cubic yards) that will be reclaimed	148
What is the estimated surface area (in square feet) that will be remediated	2000
What is the estimated volume (in cubic yards) that will be remediated	148
<i>These estimated dates and measurements are recognized to be the best guess or calculation at the time of submission and may (be) change(d) over time as more remediation efforts are completed.</i>	
<i>The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.</i>	

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QUESTIONS, Page 4

Action 338106

QUESTIONS (continued)

Operator: COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701	OGRID:	229137
	Action Number:	338106
	Action Type:	[C-141] Deferral Request C-141 (C-141-v-Deferral)

QUESTIONS

Remediation Plan (continued)	
<i>Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.</i>	
This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:	
<i>(Select all answers below that apply.)</i>	
(Ex Situ) Excavation and off-site disposal (i.e. dig and haul, hydrovac, etc.)	<i>Not answered.</i>
(Ex Situ) Excavation and on-site remediation (i.e. On-Site Land Farms)	<i>Not answered.</i>
(In Situ) Soil Vapor Extraction	<i>Not answered.</i>
(In Situ) Chemical processing (i.e. Soil Shredding, Potassium Permanganate, etc.)	<i>Not answered.</i>
(In Situ) Biological processing (i.e. Microbes / Fertilizer, etc.)	<i>Not answered.</i>
(In Situ) Physical processing (i.e. Soil Washing, Gypsum, Disking, etc.)	<i>Not answered.</i>
Ground Water Abatement pursuant to 19.15.30 NMAC	<i>Not answered.</i>
OTHER (Non-listed remedial process)	Yes
Other Non-listed Remedial Process. Please specify	Entire site to be deferred as entirety is within an active tank facility, which would require major deconstruction.
<i>Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.</i>	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
I hereby agree and sign off to the above statement	Name: Jared Stoffel Title: Scientist Email: jstoffel@trccompanies.com Date: 04/26/2024
<i>The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.</i>	

District I

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District II

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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
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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
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Santa Fe, NM 87505

QUESTIONS, Page 5

Action 338106

QUESTIONS (continued)

Operator: COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701	OGRID:	229137
	Action Number:	338106
	Action Type:	[C-141] Deferral Request C-141 (C-141-v-Deferral)

QUESTIONS**Deferral Requests Only**

Only answer the questions in this group if seeking a deferral upon approval this submission. Each of the following items must be confirmed as part of any request for deferral of remediation.

Requesting a deferral of the remediation closure due date with the approval of this submission	Yes
Have the lateral and vertical extents of contamination been fully delineated	Yes
Is the remaining contamination in areas immediately under or around production equipment where remediation could cause a major facility deconstruction	Yes
Please list or describe the production equipment and how (re)moving the equipment would cause major facility deconstruction	The entire tank battery, including pipes, tanks, separators and heater treaters are within a lined and bermed facility. The equipment would have to be removed, then the liner would have to be removed prior to enacting remediation. Any remediation activities in this area constitute a health and safety risk to the remediation workers and constitute an environmental risk of release.
What is the remaining surface area (in square feet) that will still need to be remediated if a deferral is granted	2000
What is the remaining volume (in cubic yards) that will still need to be remediated if a deferral is granted	148
Per Paragraph (2) of Subsection C of 19.15.29.12 NMAC if contamination is located in areas immediately under or around production equipment such as production tanks, wellheads and pipelines where remediation could cause a major facility deconstruction, the remediation, restoration and reclamation may be deferred with division written approval until the equipment is removed during other operations, or when the well or facility is plugged or abandoned, whichever comes first.	
Enter the facility ID (f#) on which this deferral should be granted	Not answered.
Enter the well API (30-) on which this deferral should be granted	30-025-39264 GC FEDERAL #027
Contamination does not cause an imminent risk to human health, the environment, or groundwater	True
Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
I hereby agree and sign off to the above statement	Name: Jared Stoffel Title: Scientist Email: jstoffel@trccompanies.com Date: 04/26/2024

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QUESTIONS, Page 6

Action 338106

QUESTIONS (continued)

Operator: COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701	OGRID:
	229137
	Action Number:
	338106
Action Type:	
[C-141] Deferral Request C-141 (C-141-v-Deferral)	

QUESTIONS

Sampling Event Information	
Last sampling notification (C-141N) recorded	319096
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	10/10/2023
What was the (estimated) number of samples that were to be gathered	10
What was the sampling surface area in square feet	5000

Remediation Closure Request	
Only answer the questions in this group if seeking remediation closure for this release because all remediation steps have been completed.	
Requesting a remediation closure approval with this submission	No

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CONDITIONS

Action 338106

CONDITIONS

Operator: COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701	OGRID: 229137
	Action Number: 338106
	Action Type: [C-141] Deferral Request C-141 (C-141-v-Deferral)

CONDITIONS

Created By	Condition	Condition Date
bhall	Deferral approved. Deferral of AH-1 through AH-4 is approved until plugging and abandonment or a major facility deconstruction, whichever comes first. A complete and accurate remediation report and/or reclamation report will need to be submitted at that time.	5/1/2024