



June 22, 2018

Mike Bratcher
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division, District 2
811 S. First Street
Artesia, New Mexico 88210

Shelly Tucker
U.S Department of the Interior
Bureau of Land Management
620 E. Greene Street
Carlsbad, NM 88220
Stucker@blm.gov

Re: Soil Investigation Summary and Proposed Remediation Workplan
Glacier Federal COM #001H (2RP-4642)
GPS: N 32.03433384° W 104.34251690°
Unit Letter "A", Section 24, Township 26 South, Range 25 East, NMPM
Eddy County, New Mexico

Dear Mr. Bratcher and Ms. Tucker,

2M Environmental Services, LLC. (2M), on behalf of COG Operating, LLC. (Concho), has prepared this Soil Investigation Summary and Proposed Remediation Workplan (Workplan) for the Glacier Federal COM #001H Release Site (Release Site). The purpose of this Workplan is to propose remediation activities designed to advance the Glacier Federal COM #001H Release Site toward a New Mexico Oil and Conservation District (NMOCD) approved Site Closure Status. The legal description of the Release Site is Unit Letter "A", Section 24, Township 26 South, Range 25 East, in Eddy County, New Mexico. The subject property is administered by the New Mexico U.S. Department of the Interior Bureau of Land Management (BLM). The GPS coordinates for the site are N 32.03433384° W 104.34251690°. A Site Location Map and Site Details and Soil Sample Location Map are provided as Figure 1 and Figure 2, respectively.

On February 27, 2018, a produced water release occurred at the Glacier Federal COM #001H. The release was the result of corrosion of the one (1) inch steel plug on the filter pot, which resulted in the release of produced water inside the lined steel secondary containment and overspray outside of the secondary containment south of the tank battery contained on the caliche pad. On February 27, 2018, Concho reported the release to the NMOCD District 2 Office, located in Artesia, New Mexico, and BLM. The release was assigned an incident number 2RP-4642. A Release Notification and Corrective Action Form (Form C-141) was subsequently submitted to the NMOCD on March 2, 2018. The release was reported as approximately three hundred thirty-four (334) barrels of produced water released with three hundred thirty (330) barrels of produced water recovered, resulting in a net loss of approximately four (4) barrels of produced water. A copy of the NMOCD Release Notification and Corrective Action Form C-141 is attached to this Workplan.

A groundwater database maintained by The New Mexico Office of the State Engineer (NMOSE) identified the average depth to groundwater in Section 24, Township 26 South, Range 25 East is approximately eleven (11) feet below ground surface (bgs). Based on the NMOCD site classification system, twenty (20) points will be assigned to the subject area ranking as a result of this criterion. No water wells were observed within one-thousand (1,000) feet of the Release Site. Based on the NMOCD site classification system, zero (0) points will be assigned to the subject area ranking as a result of this criterion. No surface water was observed within one thousand (1,000) feet of the release. Based on the NMOCD site classification system, twenty (20) points will be assigned to the subject area ranking as a result of this criterion.

Based on the NMOCD Site Classification criteria, the Release Site remediation levels are 10 mg/Kg for benzene, 50 mg/Kg for benzene, toluene, ethylbenzene and xylenes (BTEX) and 100 mg/Kg for total petroleum hydrocarbons (TPH). Chloride remediation levels for the Release Site will be 600 mg/Kg, per NMOCD request.

On March 15, 2018, 2M, on behalf of Concho, utilized a hand auger and/or a backhoe to collect eight (8) delineation soil samples (T-1 @ 6", T-1 @ 1', T-1 @ 2', T-1 @ 3', T-1 @ 5', T-2 @ 6", T-2 @ 1', and T-2 @ 3') from the impacted area south of the secondary containment. In addition to the soil samples described above, eight (8) soil samples (NT @ 6", NT @ 1', ET @ 6", ET @ 1', ST @ 6", ST @ 1', WT @ 6", and WT @ 1') were collected utilizing a hand auger and/or backhoe approximately five (5) feet from the outer perimeter of the impacted area. Two (2) background samples (BG @ 3' and BG @ 5') were collected south of the Glacier Federal COM # 001H caliche pad. The soil samples were submitted to Permian Basin Environmental Lab in Midland, Texas for determination of concentrations of BTEX using Method SW 846-8021B, TPH using Method SW 846-8015M, and chloride using Method E-300.1. Sample results are provided as an attachment to this report (Table 1 - Concentrations of Benzene, BTEX, TPH and Chloride in Soil).

Based on the analytical results of the soil samples collected on March 15, 2018, Concho proposes the following field activities designed to remediate the Glacier Federal COM #001H:

- Utilizing a backhoe, excavate the area represented by sample point T-1 to approximately three (3) feet bgs and the area represented by sample point T-2 to approximately one (1) foot bgs.
- Excavated soil will be stockpiled on a plastic liner adjacent to the excavation pending disposal.

- The excavation will be backfilled with locally purchased non-impacted “like” soil or caliche. In addition, the excavated soil will be transported under manifest to a NMOCD approved disposal facility.
- Prepare and submit a “Remediation Summary and Site Closure Request” to the NMOCD and BLM.

Concho is prepared to begin the activities outlined in this Proposed Remediation Workplan on NMOCD and BLM approval.

If you have any questions, or if additional information is required, please feel free to call me at 432-614-6793 (office) or 432-230-3763 (cell).

Thank you,

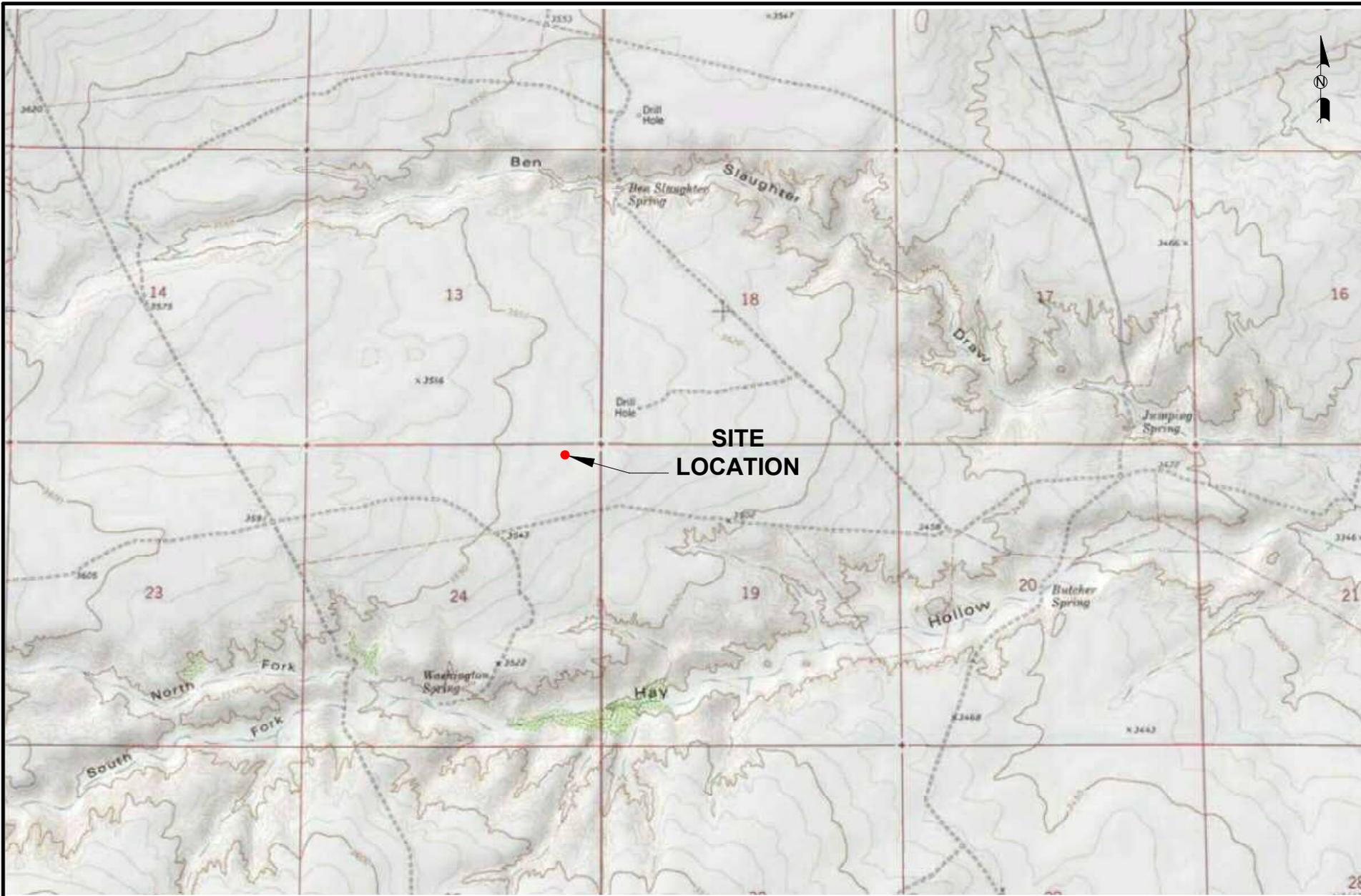


Matthew Green, P.G.
President
2M Environmental Services, LLC.

Attachments:

Figure 1 - Site Location Map
Figure 2 - Site Details and Soil Sample Location Map
Table 1 - Concentrations of Benzene, BTEX, TPH and Chloride in Soil
Laboratory Analytical Results
Release Notification and Corrective Action (Form C-141)

cc: File



LEGEND:

 Native Grassland

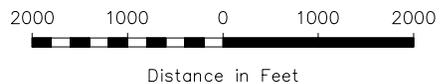


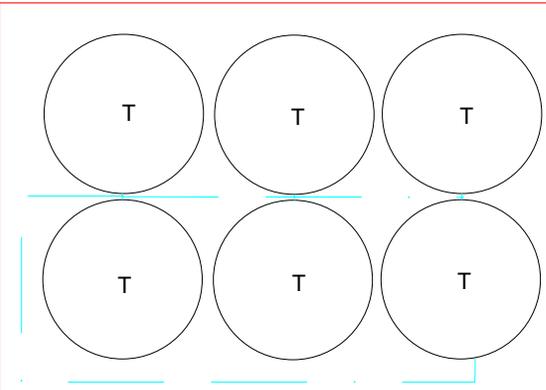
Figure 1
Site Location Map
COG Operating LLC
Glacier Federal Com #001H
Eddy County, TX

Scale: 1" = 2000'
CAD By: AR
Checked By: MG
Date: April 10, 2018
Lat. N 32.03433384°, Long. W 104.34251690°





▲ NT @ 6"
NT @ 1'



▲ WT @ 6"
WT @ 1'

T-1 @ 6"
T-1 @ 1'
T-1 @ 2'
T-1 @ 3'
T-1 @ 5'



T-2 @ 6"
T-2 @ 1'
T-2 @ 3'



▲ ET @ 6"
ET @ 1'

▲ ST @ 6"
ST @ 1'

BG @ 3'
BG @ 5'



Note: Background sample was collected south of the caliche production pad Approximately 500 feet from release area.
GPS: N 32.034217°, W -104.341550°

LEGEND:

- Excavate to three feet below ground surface
- Excavate to one feet below ground surface
- Horizontal Delineation Soil Sample Location
- Vertical Soil Sample Location
- Approximate Background Soil Sample Location
- Plastic Lined Steel Secondary Containment

Note: Map is not to scale

Figure 2
Site Details &
Soil Sample Location Map
COG Operating LLC
Glacier Federal Com #001H
Eddy County, TX

CAD By: AR
Checked By: MG
Draft: April 10, 2018
Lat. N 32.03433384° Long. W 104.34251690°



**PERMIAN BASIN
ENVIRONMENTAL LAB, LP
1400 Rankin Hwy
Midland, TX 79701**



Analytical Report

Prepared for:

Matt Green
2M Environmental Services, LLC.
1219 W. University Blvd.
Odessa, TEXAS 79764

Project: COG glacier Federal COM #001H
Project Number: [none]
Location: Eddy County, NM
Lab Order Number: 8C20019



NELAP/TCEQ # T104704516-17-8

Report Date: 03/27/18

2M Environmental Services, LLC.
1219 W. University Blvd.
Odessa TEXAS, 79764

Project: COG glacier Federal COM #001H
Project Number: [none]
Project Manager: Matt Green

Fax:

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
T-1 @ 6"	8C20019-01	Soil	03/15/18 12:28	03-20-2018 15:42
T-1 @ 1'	8C20019-02	Soil	03/15/18 12:32	03-20-2018 15:42
T-1 @ 2'	8C20019-03	Soil	03/15/18 12:35	03-20-2018 15:42
T-1 @ 3'	8C20019-04	Soil	03/15/18 12:39	03-20-2018 15:42
T-1 @ 5'	8C20019-05	Soil	03/15/18 13:00	03-20-2018 15:42
BG @ 3'	8C20019-06	Soil	03/15/18 14:10	03-20-2018 15:42
BG @ 5'	8C20019-07	Soil	03/15/18 14:15	03-20-2018 15:42
T-2 @ 6"	8C20019-08	Soil	03/15/18 14:52	03-20-2018 15:42
T-2 @ 1'	8C20019-09	Soil	03/15/18 14:55	03-20-2018 15:42
T-2 @ 3'	8C20019-10	Soil	03/15/18 15:04	03-20-2018 15:42
NT @ 6"	8C20019-11	Soil	03/15/18 15:35	03-20-2018 15:42
NT @ 1'	8C20019-12	Soil	03/15/18 15:39	03-20-2018 15:42
ET @ 6"	8C20019-13	Soil	03/15/18 15:40	03-20-2018 15:42
ET @ 1'	8C20019-14	Soil	03/15/18 15:43	03-20-2018 15:42
ST @ 6"	8C20019-15	Soil	03/15/18 15:45	03-20-2018 15:42
ST @ 1'	8C20019-16	Soil	03/15/18 15:46	03-20-2018 15:42
WT @ 6"	8C20019-17	Soil	03/15/18 15:55	03-20-2018 15:42
WT @ 1'	8C20019-18	Soil	03/15/18 15:57	03-20-2018 15:42

2M Environmental Services, LLC.
 1219 W. University Blvd.
 Odessa TEXAS, 79764

Project: COG glacier Federal COM #001H
 Project Number: [none]
 Project Manager: Matt Green

Fax:

T-1 @ 6"
8C20019-01 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00110	mg/kg dry	1	P8C2103	03/21/18	03/21/18	EPA 8021B	
Toluene	ND	0.0110	mg/kg dry	1	P8C2103	03/21/18	03/21/18	EPA 8021B	
Ethylbenzene	ND	0.00549	mg/kg dry	1	P8C2103	03/21/18	03/21/18	EPA 8021B	
Xylene (p/m)	ND	0.0220	mg/kg dry	1	P8C2103	03/21/18	03/21/18	EPA 8021B	
Xylene (o)	ND	0.0110	mg/kg dry	1	P8C2103	03/21/18	03/21/18	EPA 8021B	
<i>Surrogate: 4-Bromofluorobenzene</i>		130 %	75-125		P8C2103	03/21/18	03/21/18	EPA 8021B	S-GC
<i>Surrogate: 1,4-Difluorobenzene</i>		91.5 %	75-125		P8C2103	03/21/18	03/21/18	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	2650	27.5	mg/kg dry	25	P8C2203	03/22/18	03/23/18	EPA 300.0	
% Moisture	9.0	0.1	%	1	P8C2307	03/23/18	03/23/18	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	27.5	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
>C12-C28	ND	27.5	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
>C28-C35	ND	27.5	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		102 %	70-130		P8C2108	03/21/18	03/22/18	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		106 %	70-130		P8C2108	03/21/18	03/22/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	27.5	mg/kg dry	1	[CALC]	03/21/18	03/22/18	calc	

2M Environmental Services, LLC.
1219 W. University Blvd.
Odessa TEXAS, 79764

Project: COG glacier Federal COM #001H
Project Number: [none]
Project Manager: Matt Green

Fax:

T-1 @ 1'
8C20019-02 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00110	mg/kg dry	1	P8C2103	03/21/18	03/21/18	EPA 8021B	
Toluene	ND	0.0110	mg/kg dry	1	P8C2103	03/21/18	03/21/18	EPA 8021B	
Ethylbenzene	ND	0.00549	mg/kg dry	1	P8C2103	03/21/18	03/21/18	EPA 8021B	
Xylene (p/m)	ND	0.0220	mg/kg dry	1	P8C2103	03/21/18	03/21/18	EPA 8021B	
Xylene (o)	ND	0.0110	mg/kg dry	1	P8C2103	03/21/18	03/21/18	EPA 8021B	
<i>Surrogate: 1,4-Difluorobenzene</i>		82.4 %		75-125	P8C2103	03/21/18	03/21/18	EPA 8021B	
<i>Surrogate: 4-Bromofluorobenzene</i>		119 %		75-125	P8C2103	03/21/18	03/21/18	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	335	27.5	mg/kg dry	25	P8C2203	03/22/18	03/23/18	EPA 300.0	
% Moisture	9.0	0.1	%	1	P8C2307	03/23/18	03/23/18	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	27.5	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
>C12-C28	ND	27.5	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
>C28-C35	ND	27.5	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		104 %		70-130	P8C2108	03/21/18	03/22/18	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		109 %		70-130	P8C2108	03/21/18	03/22/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	27.5	mg/kg dry	1	[CALC]	03/21/18	03/22/18	calc	

2M Environmental Services, LLC.
1219 W. University Blvd.
Odessa TEXAS, 79764

Project: COG glacier Federal COM #001H
Project Number: [none]
Project Manager: Matt Green

Fax:

T-1 @ 2'
8C20019-03 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00104	mg/kg dry	1	P8C2103	03/21/18	03/21/18	EPA 8021B	
Toluene	ND	0.0104	mg/kg dry	1	P8C2103	03/21/18	03/21/18	EPA 8021B	
Ethylbenzene	ND	0.00521	mg/kg dry	1	P8C2103	03/21/18	03/21/18	EPA 8021B	
Xylene (p/m)	ND	0.0208	mg/kg dry	1	P8C2103	03/21/18	03/21/18	EPA 8021B	
Xylene (o)	ND	0.0104	mg/kg dry	1	P8C2103	03/21/18	03/21/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		109 %	75-125		P8C2103	03/21/18	03/21/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		81.1 %	75-125		P8C2103	03/21/18	03/21/18	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	1460	26.0	mg/kg dry	25	P8C2203	03/22/18	03/23/18	EPA 300.0	
% Moisture	4.0	0.1	%	1	P8C2307	03/23/18	03/23/18	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.0	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
>C12-C28	ND	26.0	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
>C28-C35	ND	26.0	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
Surrogate: 1-Chlorooctane		78.2 %	70-130		P8C2108	03/21/18	03/22/18	TPH 8015M	
Surrogate: o-Terphenyl		82.4 %	70-130		P8C2108	03/21/18	03/22/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	26.0	mg/kg dry	1	[CALC]	03/21/18	03/22/18	calc	

2M Environmental Services, LLC.
 1219 W. University Blvd.
 Odessa TEXAS, 79764

Project: COG glacier Federal COM #001H
 Project Number: [none]
 Project Manager: Matt Green

Fax:

T-1 @ 3'
8C20019-04 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00109	mg/kg dry	1	P8C2103	03/21/18	03/22/18	EPA 8021B	
Toluene	ND	0.0109	mg/kg dry	1	P8C2103	03/21/18	03/22/18	EPA 8021B	
Ethylbenzene	ND	0.00543	mg/kg dry	1	P8C2103	03/21/18	03/22/18	EPA 8021B	
Xylene (p/m)	ND	0.0217	mg/kg dry	1	P8C2103	03/21/18	03/22/18	EPA 8021B	
Xylene (o)	ND	0.0109	mg/kg dry	1	P8C2103	03/21/18	03/22/18	EPA 8021B	
<i>Surrogate: 4-Bromofluorobenzene</i>		123 %	75-125		P8C2103	03/21/18	03/22/18	EPA 8021B	
<i>Surrogate: 1,4-Difluorobenzene</i>		80.5 %	75-125		P8C2103	03/21/18	03/22/18	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	177	1.09	mg/kg dry	1	P8C2302	03/23/18	03/26/18	EPA 300.0	
% Moisture	8.0	0.1	%	1	P8C2307	03/23/18	03/23/18	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	27.2	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
>C12-C28	ND	27.2	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
>C28-C35	ND	27.2	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		130 %	70-130		P8C2108	03/21/18	03/22/18	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		139 %	70-130		P8C2108	03/21/18	03/22/18	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	ND	27.2	mg/kg dry	1	[CALC]	03/21/18	03/22/18	calc	

2M Environmental Services, LLC.
 1219 W. University Blvd.
 Odessa TEXAS, 79764

Project: COG glacier Federal COM #001H
 Project Number: [none]
 Project Manager: Matt Green

Fax:

T-1 @ 5'
8C20019-05 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.0211	mg/kg dry	20	P8C2103	03/21/18	03/23/18	EPA 8021B	
Toluene	ND	0.211	mg/kg dry	20	P8C2103	03/21/18	03/23/18	EPA 8021B	
Ethylbenzene	ND	0.105	mg/kg dry	20	P8C2103	03/21/18	03/23/18	EPA 8021B	
Xylene (p/m)	ND	0.421	mg/kg dry	20	P8C2103	03/21/18	03/23/18	EPA 8021B	
Xylene (o)	ND	0.211	mg/kg dry	20	P8C2103	03/21/18	03/23/18	EPA 8021B	
<i>Surrogate: 1,4-Difluorobenzene</i>		88.1 %		75-125	P8C2103	03/21/18	03/23/18	EPA 8021B	
<i>Surrogate: 4-Bromofluorobenzene</i>		123 %		75-125	P8C2103	03/21/18	03/23/18	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	149	1.05	mg/kg dry	1	P8C2302	03/23/18	03/26/18	EPA 300.0	
% Moisture	5.0	0.1	%	1	P8C2307	03/23/18	03/23/18	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.3	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
>C12-C28	ND	26.3	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
>C28-C35	ND	26.3	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		115 %		70-130	P8C2108	03/21/18	03/22/18	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		121 %		70-130	P8C2108	03/21/18	03/22/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	26.3	mg/kg dry	1	[CALC]	03/21/18	03/22/18	calc	

2M Environmental Services, LLC.
1219 W. University Blvd.
Odessa TEXAS, 79764

Project: COG glacier Federal COM #001H
Project Number: [none]
Project Manager: Matt Green

Fax:

BG @ 3'
8C20019-06 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00102	mg/kg dry	1	P8C2103	03/21/18	03/22/18	EPA 8021B	
Toluene	ND	0.0102	mg/kg dry	1	P8C2103	03/21/18	03/22/18	EPA 8021B	
Ethylbenzene	ND	0.00510	mg/kg dry	1	P8C2103	03/21/18	03/22/18	EPA 8021B	
Xylene (p/m)	ND	0.0204	mg/kg dry	1	P8C2103	03/21/18	03/22/18	EPA 8021B	
Xylene (o)	ND	0.0102	mg/kg dry	1	P8C2103	03/21/18	03/22/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		73.3 %		75-125	P8C2103	03/21/18	03/22/18	EPA 8021B	S-GC
Surrogate: 4-Bromofluorobenzene		98.9 %		75-125	P8C2103	03/21/18	03/22/18	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	308	1.02	mg/kg dry	1	P8C2302	03/23/18	03/26/18	EPA 300.0	
% Moisture	2.0	0.1	%	1	P8C2307	03/23/18	03/23/18	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	25.5	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
>C12-C28	ND	25.5	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
>C28-C35	ND	25.5	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
Surrogate: 1-Chlorooctane		109 %		70-130	P8C2108	03/21/18	03/22/18	TPH 8015M	
Surrogate: o-Terphenyl		115 %		70-130	P8C2108	03/21/18	03/22/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.5	mg/kg dry	1	[CALC]	03/21/18	03/22/18	calc	

2M Environmental Services, LLC.
1219 W. University Blvd.
Odessa TEXAS, 79764

Project: COG glacier Federal COM #001H
Project Number: [none]
Project Manager: Matt Green

Fax:

BG @ 5'
8C20019-07 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00102	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Toluene	ND	0.0102	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Ethylbenzene	ND	0.00510	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Xylene (p/m)	ND	0.0204	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Xylene (o)	ND	0.0102	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
<i>Surrogate: 1,4-Difluorobenzene</i>		90.8 %	75-125		P8C2104	03/21/18	03/22/18	EPA 8021B	
<i>Surrogate: 4-Bromofluorobenzene</i>		146 %	75-125		P8C2104	03/21/18	03/22/18	EPA 8021B	S-GC

General Chemistry Parameters by EPA / Standard Methods

Chloride	ND	1.02	mg/kg dry	1	P8C2302	03/23/18	03/26/18	EPA 300.0	
% Moisture	2.0	0.1	%	1	P8C2307	03/23/18	03/23/18	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	25.5	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
>C12-C28	ND	25.5	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
>C28-C35	ND	25.5	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		101 %	70-130		P8C2108	03/21/18	03/22/18	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		104 %	70-130		P8C2108	03/21/18	03/22/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.5	mg/kg dry	1	[CALC]	03/21/18	03/22/18	calc	

2M Environmental Services, LLC.
1219 W. University Blvd.
Odessa TEXAS, 79764

Project: COG glacier Federal COM #001H
Project Number: [none]
Project Manager: Matt Green

Fax:

T-2 @ 6"
8C20019-08 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00109	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Toluene	ND	0.0109	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Ethylbenzene	ND	0.00543	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Xylene (p/m)	ND	0.0217	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Xylene (o)	ND	0.0109	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
<i>Surrogate: 1,4-Difluorobenzene</i>		97.1 %	75-125		P8C2104	03/21/18	03/22/18	EPA 8021B	
<i>Surrogate: 4-Bromofluorobenzene</i>		114 %	75-125		P8C2104	03/21/18	03/22/18	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	1440	27.2	mg/kg dry	25	P8C2302	03/23/18	03/26/18	EPA 300.0	
% Moisture	8.0	0.1	%	1	P8C2307	03/23/18	03/23/18	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	27.2	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
>C12-C28	ND	27.2	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
>C28-C35	ND	27.2	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		91.2 %	70-130		P8C2108	03/21/18	03/22/18	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		96.2 %	70-130		P8C2108	03/21/18	03/22/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	27.2	mg/kg dry	1	[CALC]	03/21/18	03/22/18	calc	

2M Environmental Services, LLC.
 1219 W. University Blvd.
 Odessa TEXAS, 79764

Project: COG glacier Federal COM #001H
 Project Number: [none]
 Project Manager: Matt Green

Fax:

T-2 @ 1'
8C20019-09 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00103	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Toluene	ND	0.0103	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Ethylbenzene	ND	0.00515	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Xylene (p/m)	ND	0.0206	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Xylene (o)	ND	0.0103	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		133 %	75-125		P8C2104	03/21/18	03/22/18	EPA 8021B	S-GC
Surrogate: 1,4-Difluorobenzene		94.1 %	75-125		P8C2104	03/21/18	03/22/18	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	289	1.03	mg/kg dry	1	P8C2302	03/23/18	03/26/18	EPA 300.0	
% Moisture	3.0	0.1	%	1	P8C2307	03/23/18	03/23/18	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	25.8	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
>C12-C28	ND	25.8	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
>C28-C35	ND	25.8	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
Surrogate: 1-Chlorooctane		100 %	70-130		P8C2108	03/21/18	03/22/18	TPH 8015M	
Surrogate: o-Terphenyl		105 %	70-130		P8C2108	03/21/18	03/22/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.8	mg/kg dry	1	[CALC]	03/21/18	03/22/18	calc	

2M Environmental Services, LLC.
 1219 W. University Blvd.
 Odessa TEXAS, 79764

Project: COG glacier Federal COM #001H
 Project Number: [none]
 Project Manager: Matt Green

Fax:

T-2 @ 3'
8C20019-10 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00105	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Toluene	ND	0.0105	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Ethylbenzene	ND	0.00526	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Xylene (p/m)	ND	0.0211	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Xylene (o)	ND	0.0105	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		71.4 %	75-125		P8C2104	03/21/18	03/22/18	EPA 8021B	S-GC
Surrogate: 1,4-Difluorobenzene		76.0 %	75-125		P8C2104	03/21/18	03/22/18	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	230	1.05	mg/kg dry	1	P8C2302	03/23/18	03/26/18	EPA 300.0	
% Moisture	5.0	0.1	%	1	P8C2307	03/23/18	03/23/18	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.3	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
>C12-C28	ND	26.3	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
>C28-C35	ND	26.3	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
Surrogate: 1-Chlorooctane		71.8 %	70-130		P8C2108	03/21/18	03/22/18	TPH 8015M	
Surrogate: o-Terphenyl		75.0 %	70-130		P8C2108	03/21/18	03/22/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	26.3	mg/kg dry	1	[CALC]	03/21/18	03/22/18	calc	

2M Environmental Services, LLC.
 1219 W. University Blvd.
 Odessa TEXAS, 79764

Project: COG glacier Federal COM #001H
 Project Number: [none]
 Project Manager: Matt Green

Fax:

NT @ 6"
8C20019-11 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00104	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Toluene	ND	0.0104	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Ethylbenzene	ND	0.00521	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Xylene (p/m)	ND	0.0208	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Xylene (o)	ND	0.0104	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
<i>Surrogate: 1,4-Difluorobenzene</i>		84.7 %	75-125		P8C2104	03/21/18	03/22/18	EPA 8021B	
<i>Surrogate: 4-Bromofluorobenzene</i>		118 %	75-125		P8C2104	03/21/18	03/22/18	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	ND	1.04	mg/kg dry	1	P8C2302	03/23/18	03/26/18	EPA 300.0	
% Moisture	4.0	0.1	%	1	P8C2307	03/23/18	03/23/18	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.0	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
>C12-C28	ND	26.0	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
>C28-C35	ND	26.0	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		115 %	70-130		P8C2108	03/21/18	03/22/18	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		119 %	70-130		P8C2108	03/21/18	03/22/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	26.0	mg/kg dry	1	[CALC]	03/21/18	03/22/18	calc	

2M Environmental Services, LLC.
1219 W. University Blvd.
Odessa TEXAS, 79764

Project: COG glacier Federal COM #001H
Project Number: [none]
Project Manager: Matt Green

Fax:

NT @ 1'
8C20019-12 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00104	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Toluene	ND	0.0104	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Ethylbenzene	ND	0.00521	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Xylene (p/m)	ND	0.0208	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Xylene (o)	ND	0.0104	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
<i>Surrogate: 4-Bromofluorobenzene</i>		102 %	75-125		P8C2104	03/21/18	03/22/18	EPA 8021B	
<i>Surrogate: 1,4-Difluorobenzene</i>		84.3 %	75-125		P8C2104	03/21/18	03/22/18	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	ND	1.04	mg/kg dry	1	P8C2607	03/26/18	03/26/18	EPA 300.0	
% Moisture	4.0	0.1	%	1	P8C2307	03/23/18	03/23/18	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.0	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
>C12-C28	ND	26.0	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
>C28-C35	ND	26.0	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		77.9 %	70-130		P8C2108	03/21/18	03/22/18	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		81.3 %	70-130		P8C2108	03/21/18	03/22/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	26.0	mg/kg dry	1	[CALC]	03/21/18	03/22/18	calc	

2M Environmental Services, LLC.
1219 W. University Blvd.
Odessa TEXAS, 79764

Project: COG glacier Federal COM #001H
Project Number: [none]
Project Manager: Matt Green

Fax:

ET @ 6"
8C20019-13 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00112	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Toluene	ND	0.0112	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Ethylbenzene	ND	0.00562	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Xylene (p/m)	ND	0.0225	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Xylene (o)	ND	0.0112	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
<i>Surrogate: 4-Bromofluorobenzene</i>		86.5 %	75-125		P8C2104	03/21/18	03/22/18	EPA 8021B	
<i>Surrogate: 1,4-Difluorobenzene</i>		72.0 %	75-125		P8C2104	03/21/18	03/22/18	EPA 8021B	S-GC

General Chemistry Parameters by EPA / Standard Methods

Chloride	78.9	1.12	mg/kg dry	1	P8C2607	03/26/18	03/26/18	EPA 300.0	
% Moisture	11.0	0.1	%	1	P8C2307	03/23/18	03/23/18	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	28.1	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
>C12-C28	ND	28.1	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
>C28-C35	ND	28.1	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		88.5 %	70-130		P8C2108	03/21/18	03/22/18	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		93.6 %	70-130		P8C2108	03/21/18	03/22/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	28.1	mg/kg dry	1	[CALC]	03/21/18	03/22/18	calc	

2M Environmental Services, LLC.
1219 W. University Blvd.
Odessa TEXAS, 79764

Project: COG glacier Federal COM #001H
Project Number: [none]
Project Manager: Matt Green

Fax:

ET @ 1'
8C20019-14 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00112	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Toluene	ND	0.0112	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Ethylbenzene	ND	0.00562	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Xylene (p/m)	ND	0.0225	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Xylene (o)	ND	0.0112	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
<i>Surrogate: 1,4-Difluorobenzene</i>		88.9 %		75-125	P8C2104	03/21/18	03/22/18	EPA 8021B	
<i>Surrogate: 4-Bromofluorobenzene</i>		86.7 %		75-125	P8C2104	03/21/18	03/22/18	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	90.9	1.12	mg/kg dry	1	P8C2607	03/26/18	03/26/18	EPA 300.0	
% Moisture	11.0	0.1	%	1	P8C2307	03/23/18	03/23/18	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	28.1	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
>C12-C28	ND	28.1	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
>C28-C35	ND	28.1	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		109 %		70-130	P8C2108	03/21/18	03/22/18	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		115 %		70-130	P8C2108	03/21/18	03/22/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	28.1	mg/kg dry	1	[CALC]	03/21/18	03/22/18	calc	

2M Environmental Services, LLC.
 1219 W. University Blvd.
 Odessa TEXAS, 79764

Project: COG glacier Federal COM #001H
 Project Number: [none]
 Project Manager: Matt Green

Fax:

ST @ 6"
8C20019-15 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00109	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Toluene	ND	0.0109	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Ethylbenzene	ND	0.00543	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Xylene (p/m)	ND	0.0217	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Xylene (o)	ND	0.0109	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
<i>Surrogate: 1,4-Difluorobenzene</i>		83.4 %	75-125		P8C2104	03/21/18	03/22/18	EPA 8021B	
<i>Surrogate: 4-Bromofluorobenzene</i>		131 %	75-125		P8C2104	03/21/18	03/22/18	EPA 8021B	S-GC

General Chemistry Parameters by EPA / Standard Methods

Chloride	40.0	1.09	mg/kg dry	1	P8C2607	03/26/18	03/26/18	EPA 300.0	
% Moisture	8.0	0.1	%	1	P8C2307	03/23/18	03/23/18	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	27.2	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
>C12-C28	ND	27.2	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
>C28-C35	ND	27.2	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		76.2 %	70-130		P8C2108	03/21/18	03/22/18	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		79.4 %	70-130		P8C2108	03/21/18	03/22/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	27.2	mg/kg dry	1	[CALC]	03/21/18	03/22/18	calc	

2M Environmental Services, LLC.
1219 W. University Blvd.
Odessa TEXAS, 79764

Project: COG glacier Federal COM #001H
Project Number: [none]
Project Manager: Matt Green

Fax:

ST @ 1'
8C20019-16 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00108	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Toluene	ND	0.0108	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Ethylbenzene	ND	0.00538	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Xylene (p/m)	ND	0.0215	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Xylene (o)	ND	0.0108	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
<i>Surrogate: 1,4-Difluorobenzene</i>		102 %	75-125		P8C2104	03/21/18	03/22/18	EPA 8021B	
<i>Surrogate: 4-Bromofluorobenzene</i>		159 %	75-125		P8C2104	03/21/18	03/22/18	EPA 8021B	S-GC

General Chemistry Parameters by EPA / Standard Methods

Chloride	43.8	1.08	mg/kg dry	1	P8C2607	03/26/18	03/26/18	EPA 300.0	
% Moisture	7.0	0.1	%	1	P8C2307	03/23/18	03/23/18	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.9	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
>C12-C28	ND	26.9	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
>C28-C35	ND	26.9	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		70.5 %	70-130		P8C2108	03/21/18	03/22/18	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		76.3 %	70-130		P8C2108	03/21/18	03/22/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	26.9	mg/kg dry	1	[CALC]	03/21/18	03/22/18	calc	

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Odessa TEXAS, 79764

Project: COG glacier Federal COM #001H
Project Number: [none]
Project Manager: Matt Green

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WT @ 6"
8C20019-17 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00106	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Toluene	ND	0.0106	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Ethylbenzene	ND	0.00532	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Xylene (p/m)	ND	0.0213	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Xylene (o)	ND	0.0106	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
<i>Surrogate: 1,4-Difluorobenzene</i>		95.5 %	75-125		P8C2104	03/21/18	03/22/18	EPA 8021B	
<i>Surrogate: 4-Bromofluorobenzene</i>		140 %	75-125		P8C2104	03/21/18	03/22/18	EPA 8021B	S-GC

General Chemistry Parameters by EPA / Standard Methods

Chloride	39.5	1.06	mg/kg dry	1	P8C2607	03/26/18	03/26/18	EPA 300.0	
% Moisture	6.0	0.1	%	1	P8C2307	03/23/18	03/23/18	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.6	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
>C12-C28	ND	26.6	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
>C28-C35	ND	26.6	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		113 %	70-130		P8C2108	03/21/18	03/22/18	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		123 %	70-130		P8C2108	03/21/18	03/22/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	26.6	mg/kg dry	1	[CALC]	03/21/18	03/22/18	calc	

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Project: COG glacier Federal COM #001H
Project Number: [none]
Project Manager: Matt Green

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WT @ 1'
8C20019-18 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00106	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Toluene	ND	0.0106	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Ethylbenzene	ND	0.00532	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Xylene (p/m)	ND	0.0213	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Xylene (o)	ND	0.0106	mg/kg dry	1	P8C2104	03/21/18	03/22/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		152 %	75-125		P8C2104	03/21/18	03/22/18	EPA 8021B	S-GC
Surrogate: 1,4-Difluorobenzene		104 %	75-125		P8C2104	03/21/18	03/22/18	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	46.2	1.06	mg/kg dry	1	P8C2607	03/26/18	03/26/18	EPA 300.0	
% Moisture	6.0	0.1	%	1	P8C2307	03/23/18	03/23/18	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.6	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
>C12-C28	ND	26.6	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
>C28-C35	ND	26.6	mg/kg dry	1	P8C2108	03/21/18	03/22/18	TPH 8015M	
Surrogate: 1-Chlorooctane		106 %	70-130		P8C2108	03/21/18	03/22/18	TPH 8015M	
Surrogate: o-Terphenyl		116 %	70-130		P8C2108	03/21/18	03/22/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	26.6	mg/kg dry	1	[CALC]	03/21/18	03/22/18	calc	

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Project: COG glacier Federal COM #001H
Project Number: [none]
Project Manager: Matt Green

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Organics by GC - Quality Control
Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch P8C2103 - General Preparation (GC)

Blank (P8C2103-BLK1)

Prepared & Analyzed: 03/21/18

Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.0100	"							
Ethylbenzene	ND	0.00500	"							
Xylene (p/m)	ND	0.0200	"							
Xylene (o)	ND	0.0100	"							
Surrogate: 4-Bromofluorobenzene	0.0746		"	0.0600		124	75-125			
Surrogate: 1,4-Difluorobenzene	0.0572		"	0.0600		95.4	75-125			

LCS (P8C2103-BS1)

Prepared & Analyzed: 03/21/18

Benzene	0.0821	0.00100	mg/kg wet	0.100		82.1	70-130			
Toluene	0.0918	0.0100	"	0.100		91.8	70-130			
Ethylbenzene	0.112	0.00500	"	0.100		112	70-130			
Xylene (p/m)	0.202	0.0200	"				70-130			
Xylene (o)	ND	0.0100	"				70-130			
Surrogate: 1,4-Difluorobenzene	0.0472		"	0.0600		78.6	75-125			
Surrogate: 4-Bromofluorobenzene	0.0559		"	0.0600		93.2	75-125			

LCS Dup (P8C2103-BS1)

Prepared & Analyzed: 03/21/18

Benzene	0.0866	0.00100	mg/kg wet	0.100		86.6	70-130	5.23	20	
Toluene	0.0913	0.0100	"	0.100		91.3	70-130	0.503	20	
Ethylbenzene	0.116	0.00500	"	0.100		116	70-130	3.72	20	
Xylene (p/m)	0.203	0.0200	"				70-130		20	
Xylene (o)	ND	0.0100	"				70-130		20	
Surrogate: 1,4-Difluorobenzene	0.0499		"	0.0600		83.1	75-125			
Surrogate: 4-Bromofluorobenzene	0.0552		"	0.0600		92.0	75-125			

Matrix Spike (P8C2103-MS1)

Source: 8C20017-01

Prepared: 03/21/18 Analyzed: 03/22/18

Benzene	0.0345	0.00105	mg/kg dry	0.105	ND	32.8	80-120			QM-05
Toluene	0.0410	0.0105	"	0.105	ND	39.0	80-120			QM-05
Ethylbenzene	0.0523	0.00526	"	0.105	0.00409	45.8	80-120			QM-05
Xylene (p/m)	0.112	0.0211	"		0.00513		80-120			
Xylene (o)	ND	0.0105	"		ND		80-120			
Surrogate: 1,4-Difluorobenzene	0.0396		"	0.0632		62.7	75-125			S-GC
Surrogate: 4-Bromofluorobenzene	0.0647		"	0.0632		102	75-125			

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Project: COG glacier Federal COM #001H
 Project Number: [none]
 Project Manager: Matt Green

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Organics by GC - Quality Control
Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch P8C2103 - General Preparation (GC)

Matrix Spike Dup (P8C2103-MSD1)	Source: 8C20017-01		Prepared: 03/21/18		Analyzed: 03/22/18					
Benzene	0.0637	0.00105	mg/kg dry	0.105	ND	60.5	80-120	59.3	20	QM-05
Toluene	0.0945	0.0105	"	0.105	ND	89.8	80-120	78.9	20	QM-05
Ethylbenzene	0.108	0.00526	"	0.105	0.00409	98.5	80-120	73.1	20	QM-05
Xylene (p/m)	0.182	0.0211	"		0.00513		80-120		20	
Xylene (o)	ND	0.0105	"		ND		80-120		20	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.118</i>		<i>"</i>	<i>0.0632</i>		<i>187</i>	<i>75-125</i>			
<i>Surrogate: 1,4-Difluorobenzene</i>	<i>0.0919</i>		<i>"</i>	<i>0.0632</i>		<i>145</i>	<i>75-125</i>			

Batch P8C2104 - General Preparation (GC)

Blank (P8C2104-BLK1)			Prepared: 03/21/18		Analyzed: 03/22/18					
Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.0100	"							
Ethylbenzene	ND	0.00500	"							
Xylene (p/m)	ND	0.0200	"							
Xylene (o)	ND	0.0100	"							
<i>Surrogate: 1,4-Difluorobenzene</i>	<i>0.0394</i>		<i>"</i>	<i>0.0600</i>		<i>65.7</i>	<i>75-125</i>			<i>S-GC</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0553</i>		<i>"</i>	<i>0.0600</i>		<i>92.2</i>	<i>75-125</i>			

LCS (P8C2104-BS1)

			Prepared: 03/21/18		Analyzed: 03/22/18					
Benzene	0.0916	0.00100	mg/kg wet	0.100		91.6	70-130			
Toluene	0.0922	0.0100	"	0.100		92.2	70-130			
Ethylbenzene	0.115	0.00500	"	0.100		115	70-130			
Xylene (p/m)	0.207	0.0200	"				70-130			
Xylene (o)	ND	0.0100	"				70-130			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0673</i>		<i>"</i>	<i>0.0600</i>		<i>112</i>	<i>75-125</i>			
<i>Surrogate: 1,4-Difluorobenzene</i>	<i>0.0608</i>		<i>"</i>	<i>0.0600</i>		<i>101</i>	<i>75-125</i>			

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 Odessa TEXAS, 79764

Project: COG glacier Federal COM #001H
 Project Number: [none]
 Project Manager: Matt Green

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Organics by GC - Quality Control
Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch P8C2104 - General Preparation (GC)

LCS Dup (P8C2104-BSD1)

Prepared: 03/21/18 Analyzed: 03/22/18

Benzene	0.0859	0.00100	mg/kg wet	0.100		85.9	70-130	6.44	20	
Toluene	0.0903	0.0100	"	0.100		90.3	70-130	2.02	20	
Ethylbenzene	0.113	0.00500	"	0.100		113	70-130	1.44	20	
Xylene (p/m)	0.199	0.0200	"				70-130		20	
Xylene (o)	ND	0.0100	"				70-130		20	
Surrogate: 1,4-Difluorobenzene	0.0559		"	0.0600		93.2	75-125			
Surrogate: 4-Bromofluorobenzene	0.0629		"	0.0600		105	75-125			

Matrix Spike (P8C2104-MS1)

Source: 8C20021-08

Prepared: 03/21/18 Analyzed: 03/22/18

Benzene	0.0728	0.00110	mg/kg dry	0.110	ND	66.3	80-120			
Toluene	0.0579	0.0110	"	0.110	ND	52.7	80-120			
Ethylbenzene	0.0634	0.00549	"	0.110	ND	57.7	80-120			
Xylene (p/m)	0.0476	0.0220	"		ND		80-120			
Xylene (o)	ND	0.0110	"		ND		80-120			
Surrogate: 4-Bromofluorobenzene	0.0869		"	0.0659		132	75-125			
Surrogate: 1,4-Difluorobenzene	0.0724		"	0.0659		110	75-125			

Matrix Spike Dup (P8C2104-MSD1)

Source: 8C20021-08

Prepared: 03/21/18 Analyzed: 03/22/18

Benzene	0.0812	0.00110	mg/kg dry	0.110	ND	73.9	80-120	10.9	20	
Toluene	0.0750	0.0110	"	0.110	ND	68.2	80-120	25.7	20	
Ethylbenzene	0.0900	0.00549	"	0.110	ND	81.9	80-120	34.7	20	
Xylene (p/m)	0.0844	0.0220	"		ND		80-120		20	
Xylene (o)	ND	0.0110	"		ND		80-120		20	
Surrogate: 1,4-Difluorobenzene	0.0695		"	0.0659		105	75-125			
Surrogate: 4-Bromofluorobenzene	0.0814		"	0.0659		123	75-125			

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 Odessa TEXAS, 79764

Project: COG glacier Federal COM #001H
 Project Number: [none]
 Project Manager: Matt Green

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General Chemistry Parameters by EPA / Standard Methods - Quality Control
Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch P8C2203 - * DEFAULT PREP *****

Blank (P8C2203-BLK1)										
					Prepared: 03/22/18 Analyzed: 03/23/18					
Chloride	ND	1.00	mg/kg wet							
LCS (P8C2203-BS1)										
					Prepared: 03/22/18 Analyzed: 03/23/18					
Chloride	386	1.00	mg/kg wet	400		96.5	80-120			
LCS Dup (P8C2203-BSD1)										
					Prepared: 03/22/18 Analyzed: 03/23/18					
Chloride	421	1.00	mg/kg wet	400		105	80-120	8.73	20	
Duplicate (P8C2203-DUP1)										
					Source: 8C20010-01		Prepared: 03/22/18 Analyzed: 03/23/18			
Chloride	13000	56.8	mg/kg dry		11000			16.2	20	
Duplicate (P8C2203-DUP2)										
					Source: 8C20017-08		Prepared: 03/22/18 Analyzed: 03/23/18			
Chloride	0.922	1.11	mg/kg dry		0.600			42.3	20	
Matrix Spike (P8C2203-MS1)										
					Source: 8C20010-01		Prepared: 03/22/18 Analyzed: 03/23/18			
Chloride	18800	56.8	mg/kg dry	5680	11000	137	80-120			

Batch P8C2302 - * DEFAULT PREP *****

Blank (P8C2302-BLK1)										
					Prepared & Analyzed: 03/23/18					
Chloride	ND	1.00	mg/kg wet							
LCS (P8C2302-BS1)										
					Prepared & Analyzed: 03/23/18					
Chloride	422	1.00	mg/kg wet	400		105	80-120			
LCS Dup (P8C2302-BSD1)										
					Prepared & Analyzed: 03/23/18					
Chloride	422	1.00	mg/kg wet	400		105	80-120	0.104	20	

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Project: COG glacier Federal COM #001H
 Project Number: [none]
 Project Manager: Matt Green

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General Chemistry Parameters by EPA / Standard Methods - Quality Control
Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch P8C2302 - * DEFAULT PREP *****

Duplicate (P8C2302-DUP1) Source: 8C22008-01 Prepared & Analyzed: 03/23/18

Chloride	8420	27.5	mg/kg dry		8420			0.0914	20	
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Duplicate (P8C2302-DUP2) Source: 8C22007-05 Prepared & Analyzed: 03/23/18

Chloride	100	10.1	mg/kg dry		111			10.5	20	
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Matrix Spike (P8C2302-MS1) Source: 8C22008-01 Prepared & Analyzed: 03/23/18

Chloride	10700	27.5	mg/kg dry	2200	8420	103	80-120			
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Batch P8C2307 - * DEFAULT PREP *****

Blank (P8C2307-BLK1) Prepared & Analyzed: 03/23/18

% Moisture	ND	0.1	%							
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Duplicate (P8C2307-DUP1) Source: 8C20021-06 Prepared & Analyzed: 03/23/18

% Moisture	9.0	0.1	%		9.0			0.00	20	
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Duplicate (P8C2307-DUP2) Source: 8C22004-01 Prepared & Analyzed: 03/23/18

% Moisture	11.0	0.1	%		11.0			0.00	20	
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Batch P8C2607 - * DEFAULT PREP *****

Blank (P8C2607-BLK1) Prepared & Analyzed: 03/26/18

Chloride	ND	1.00	mg/kg wet							
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LCS (P8C2607-BS1) Prepared & Analyzed: 03/26/18

Chloride	414	1.00	mg/kg wet	400		103	80-120			
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Project: COG glacier Federal COM #001H
 Project Number: [none]
 Project Manager: Matt Green

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General Chemistry Parameters by EPA / Standard Methods - Quality Control
Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P8C2607 - *** DEFAULT PREP ***										
LCS Dup (P8C2607-BSD1)										
				Prepared & Analyzed: 03/26/18						
Chloride	410	1.00	mg/kg wet	400		103	80-120	0.903	20	
Duplicate (P8C2607-DUP1)										
				Source: 8C23003-01 Prepared & Analyzed: 03/26/18						
Chloride	507	1.09	mg/kg dry		503			0.657	20	
Duplicate (P8C2607-DUP2)										
				Source: 8C20021-03 Prepared & Analyzed: 03/26/18						
Chloride	7010	27.8	mg/kg dry		6990			0.309	20	
Matrix Spike (P8C2607-MS1)										
				Source: 8C23003-01 Prepared & Analyzed: 03/26/18						
Chloride	1600	1.09	mg/kg dry	1090	503	101	80-120			

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Project: COG glacier Federal COM #001H
Project Number: [none]
Project Manager: Matt Green

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Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control
Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch P8C2108 - General Preparation (GC)

Blank (P8C2108-BLK1)

Prepared: 03/21/18 Analyzed: 03/22/18

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	121		"	100		121	70-130			
Surrogate: o-Terphenyl	63.5		"	50.0		127	70-130			

LCS (P8C2108-BS1)

Prepared: 03/21/18 Analyzed: 03/22/18

C6-C12	1200	25.0	mg/kg wet	1000		120	75-125			
>C12-C28	1200	25.0	"	1000		120	75-125			
Surrogate: 1-Chlorooctane	118		"	100		118	70-130			
Surrogate: o-Terphenyl	62.4		"	50.0		125	70-130			

LCS Dup (P8C2108-BS1)

Prepared: 03/21/18 Analyzed: 03/22/18

C6-C12	1170	25.0	mg/kg wet	1000		117	75-125	2.45	20	
>C12-C28	1180	25.0	"	1000		118	75-125	1.79	20	
Surrogate: 1-Chlorooctane	113		"	100		113	70-130			
Surrogate: o-Terphenyl	58.2		"	50.0		116	70-130			

Matrix Spike (P8C2108-MS1)

Source: 8C20021-01

Prepared: 03/21/18 Analyzed: 03/22/18

C6-C12	852	27.2	mg/kg dry	1090	12.2	77.3	75-125			
>C12-C28	851	27.2	"	1090	ND	78.3	75-125			
Surrogate: 1-Chlorooctane	107		"	109		98.8	70-130			
Surrogate: o-Terphenyl	43.8		"	54.3		80.6	70-130			

Matrix Spike Dup (P8C2108-MSD1)

Source: 8C20021-01

Prepared: 03/21/18 Analyzed: 03/22/18

C6-C12	843	27.2	mg/kg dry	1090	12.2	76.5	75-125	1.07	20	
>C12-C28	845	27.2	"	1090	ND	77.8	75-125	0.701	20	
Surrogate: 1-Chlorooctane	107		"	109		98.8	70-130			
Surrogate: o-Terphenyl	47.1		"	54.3		86.7	70-130			

2M Environmental Services, LLC.
1219 W. University Blvd.
Odessa TEXAS, 79764

Project: COG glacier Federal COM #001H
Project Number: [none]
Project Manager: Matt Green

Fax:

Notes and Definitions

S-GC Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.

QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

LCS Laboratory Control Spike

MS Matrix Spike

Dup Duplicate

Report Approved By:



Date: 3/27/2018

Brent Barron, Laboratory Director/Technical Director

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

If you have received this material in error, please notify us immediately at 432-686-7235.

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

Form C-141
Revised April 3, 2017

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

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

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: Glacier Federal Com #001H	Facility Type: Tank Battery

Surface Owner: BLM	Mineral Owner: Federal	API No.: 30-015-43131
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LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
A	24	26S	25E	330	North	560	East	Eddy

Latitude: 32.03433384 **Longitude:** -104.34251690 NAD83

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release: 334bbbs	Volume Recovered: 330bbbs
Source of Release: Filter Pot	Date and Hour of Occurrence: 2/27/2018	Date and Hour of Discovery: 2/27/2018 10:00am
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Crystal Weaver-NMOCD Shelly Tucker-BLM	
By Whom? Sheldon Hitchcock	Date and Hour: 2/27/2018 1:31pm	
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.*
The 1-inch steel plug on the filter pot failed due to corrosion. The plug was replaced with a stainless steel plug.

Describe Area Affected and Cleanup Action Taken.*
The majority of the fluid remained inside of the lined secondary containment. There was a small amount of overspray that impacted the location adjacent to the battery. 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: <i>Sheldon Hitchcock</i>		<u>OIL CONSERVATION DIVISION</u>	
Printed Name: Sheldon L. Hitchcock		Approved by Environmental Specialist:	
Title: HSE Coordinator	Approval Date:	Expiration Date:	
E-mail Address: slhitchcock@concho.com	Conditions of Approval:		Attached <input type="checkbox"/>
Date: 3/2/2018	Phone: 575-746-2010		

* Attach Additional Sheets If Necessary