



APPROVED

By CHernandez at 3:00 pm, Jul 27, 2018

July 13, 2018

NMOCD District I
Olivia Yu
1625 North French Drive
Hobbs, New Mexico 88240

Bureau of Land Management
Henryetta Price
620 E Greene Street
Carlsbad, New Mexico 88220

NMOCD approves of the delineation completed and proposed remediation for **1RP-5052** with these requests: 1) Please provide sidewall confirmation samples from T3 and T5 at 4 ft bgs with laboratory Benzene, BTEX, TPH extended and chloride analysis. 2) Mark confirmation sidewall sample locations in relation to delineation sample locations on a scaled map and outline of excavation area. 3) Provide GPS coordinates of all delineation and confirmation sample locations. 4) Include dated photo documentation of the remediation process.

SUBJECT: SOIL REMEDIATION WORK PLAN FOR THE INCIDENT AT THE GC Federal 055, LEA COUNTY, NEW MEXICO

Ms. Yu:

On behalf of COG Operating, LLC, HRL Compliance Solutions, Inc (HRL) has prepared this work plan that describes the assessment, initial characterization, and proposed remediation for a release associated with the GC Federal #055 release. The site is in Unit I, SECTION 19, TOWNSHIP 17S, RANGE 32E, NMPM, Lea County, New Mexico, on Federal land. Figure 1 illustrates the location and surrounding area.

Table 1 below, summarizes information regarding the release.

1.0 Background

The release at the GC Federal #055 was due to a hole in a steel flowline that developed due to corrosion as outlined in the NMOCD C-141 report (Appendix A). All released material remained on location within the perimeter of the well pad. A vacuum truck was used to remove all freestanding liquids. Samples were collected from the impacted area to delineate the vertical and horizontal extent of impacts.

2.0 Site Ranking and Land Jurisdiction

The release site is located approximately 3.3 miles south-southwest of Maljamar, with an elevation of approximately 4,595 feet above sea level. Due to the lack of water wells in the near vicinity an alternative method of water depth determination was utilized. An evaluation of the site using the Chevron Texaco Groundwater Trend Map (2005) shows depth to groundwater is approximately 175 feet below ground surface (bgs). Recommended Remediation Action Levels (RRALs) are determined by the site ranking according to the NMOCD *Guidelines for Remediation of Leaks, Spills, and Releases* (1993). Table 2 presents the remediation standards and the site ranking for this location. Justification for this site ranking is found in Appendix B.



Table 1: Release Information and Site Ranking

Name	GC Federal #055
Company	COG Operating, LLC
RP Number	1RP-5052
API Number	30-025-40007
Location	32.8173409, -103.8004608
Estimated Date of Release	05/07/2018
Date Reported to NMOCD	05/07/2018
Land Owner	Federal
Reported to	OCD/BLM
Source of Release	Hole in steel flow line
Released Material	Oil and Produced Water
Released Volume	10 bbls oil, 30 bbls produced water
Recovered Volume	8 bbls oil, 25 bbls produced water
Net Release Volume	2 bbls oil, 5 bbls water
Nearest Waterway	9.8 miles to White Lake
Depth to Groundwater	175 feet bgs
Nearest Domestic Water Source	> 1 mile
NMOCD Ranking	0
Response Date	05/07/18

Table 2: Remediation Standards

Soil Remediation Standards	0 to 9	10 to 19	>19
Benzene	10 PPM	10 PPM	10 PPM
BTEX	50 PPM	50 PPM	50 PPM
TPH	5000 PPM	1000 PPM	100 PPM

Depth to Groundwater	NMOCD Numeric Rank
< 50 BGS = 20	
50' to 99' = 10	
>100' = 0	0
Distance to Nearest Surface Water	NMOCD Numeric Rank
< 200' = 20	
200' - 1000' = 10	
>1000' = 0	0
Well Head Protection	NMOCD Numeric Rank
<1000' (or <200' domestic) = 20	
> 1000' = 0	0
Total Site Ranking	0



3.0 Release Characterization

Upon receiving clearance from the underground utility locate (811) on May 30, 2018, COG field personnel assessed the impacted area. Samples were collected on 5/30/2018 to characterize the extent of impacts and calculate a volume of soil to be excavated for disposal. All samples were collected and analyzed at a Nationally Environmental Laboratory Accreditation Program (NELAP) laboratory and in accordance with NMOCD soil sampling procedures. The samples were submitted to Cardinal Laboratories for analyses including chlorides by Method 300.0, volatile organics (BTEX) by Method 8021B, and MRO, DRO, and GRO by EPA Method 8015D. Sample locations are depicted in Figure 2. All field screening and laboratory results are summarized in Table 3 with raw analytical reports included in Appendix C.

4.0 Soil Remediation Workplan

HRL will begin the excavation of the impacted soils, after approval from area utilities owners via 811 and NMOCD. HRL will oversee the excavation activities. Excavation will occur to a depth of four (4) feet bgs for the areas labeled as T3 and T5 with a liner placed at the four foot depth. Impacted soils will be stockpiled on location within a lined earthen berm containment cell prior to disposal. Confirmation samples will be collected from the sidewalls of the sample site to be analyzed for total chlorides. It is anticipated that approximately 100 cubic yards of contaminated soil is to be excavated and disposed at an approved solid waste disposal facility. GPS coordinates of the excavated area will be taken and mapped to show the area of final excavation. Clean native soils and caliche from an approved pit will be used to backfill the excavation and the impacted area will be recontoured to the surrounding area. The contaminated soil will be disposed at an approved disposal facility.

5.0 Revegetation

As the impacted soil is limited to the existing well pad, no revegetation will occur.



6.0 Scope and Limitations

The scope of HRL's services consist of performing site characterization and remediation, verification of release stabilization, regulatory liaison, and preparation of this work plan. All work has been performed in accordance with generally accepted professional environmental consulting practices for oil and gas releases in the Permian Basin in New Mexico.

If there are any questions regarding this report, please contact Jennifer Knowlton at 505-238-3588.

Submitted by:
HRL Compliance Solutions, Inc

A handwritten signature in blue ink, reading "Jennifer Knowlton", is positioned below the text "Submitted by: HRL Compliance Solutions, Inc".

Jennifer Knowlton
Regional Manager - Permian

Attachments:

Figure 1: Vicinity and Wellhead Protection Map

Figure 2: Site and Sample Location Map

Table 3: Summary of Sample Results

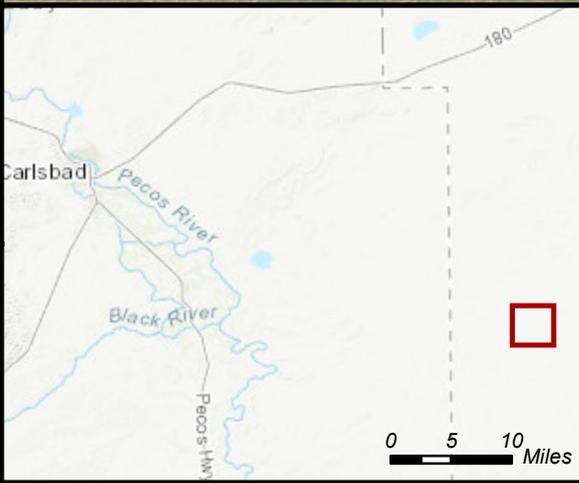
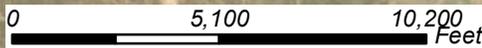
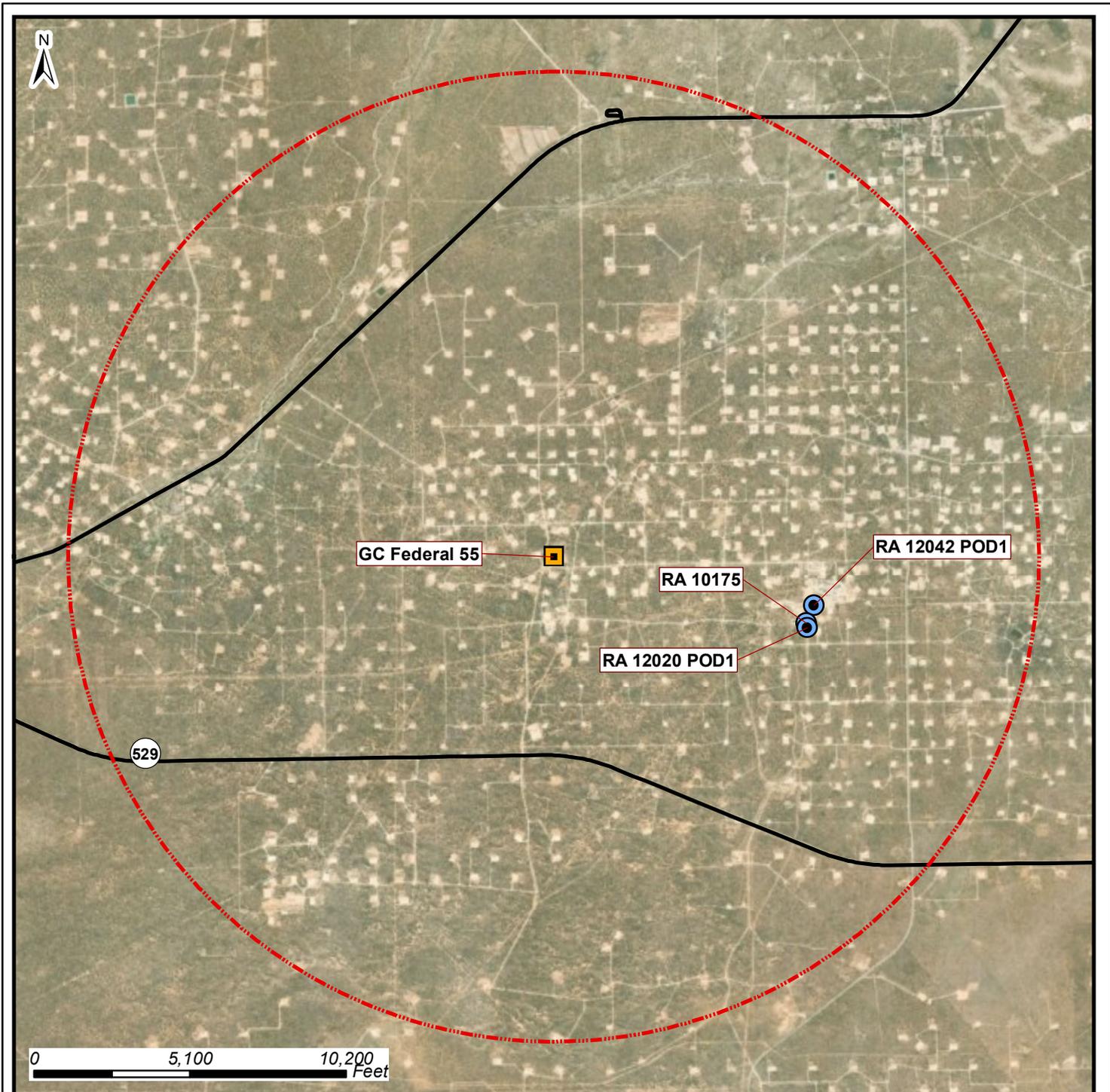
Appendix A: Form C141 Initial

Appendix B: NMOSE Well Report

Appendix C: Laboratory Analytical Reports



Figure 1:
Site Vicinity Map



Site Location Map

GC Federal 55

32.817244 -103.800322

Section 19, Township 17 South, Range 32 East

Features

- Pad
- 3 Mile Radius
- Water Well
- Road

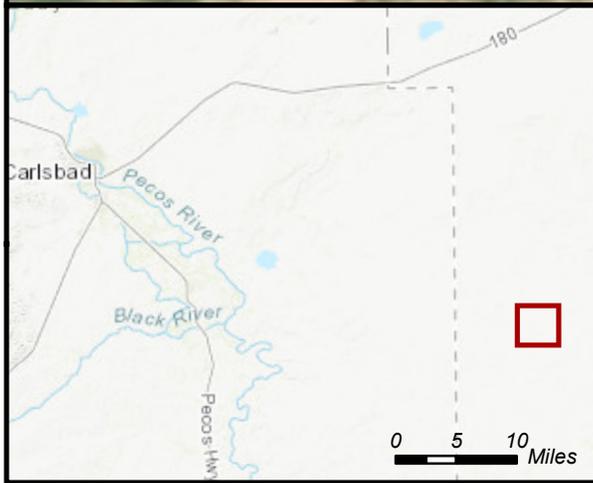
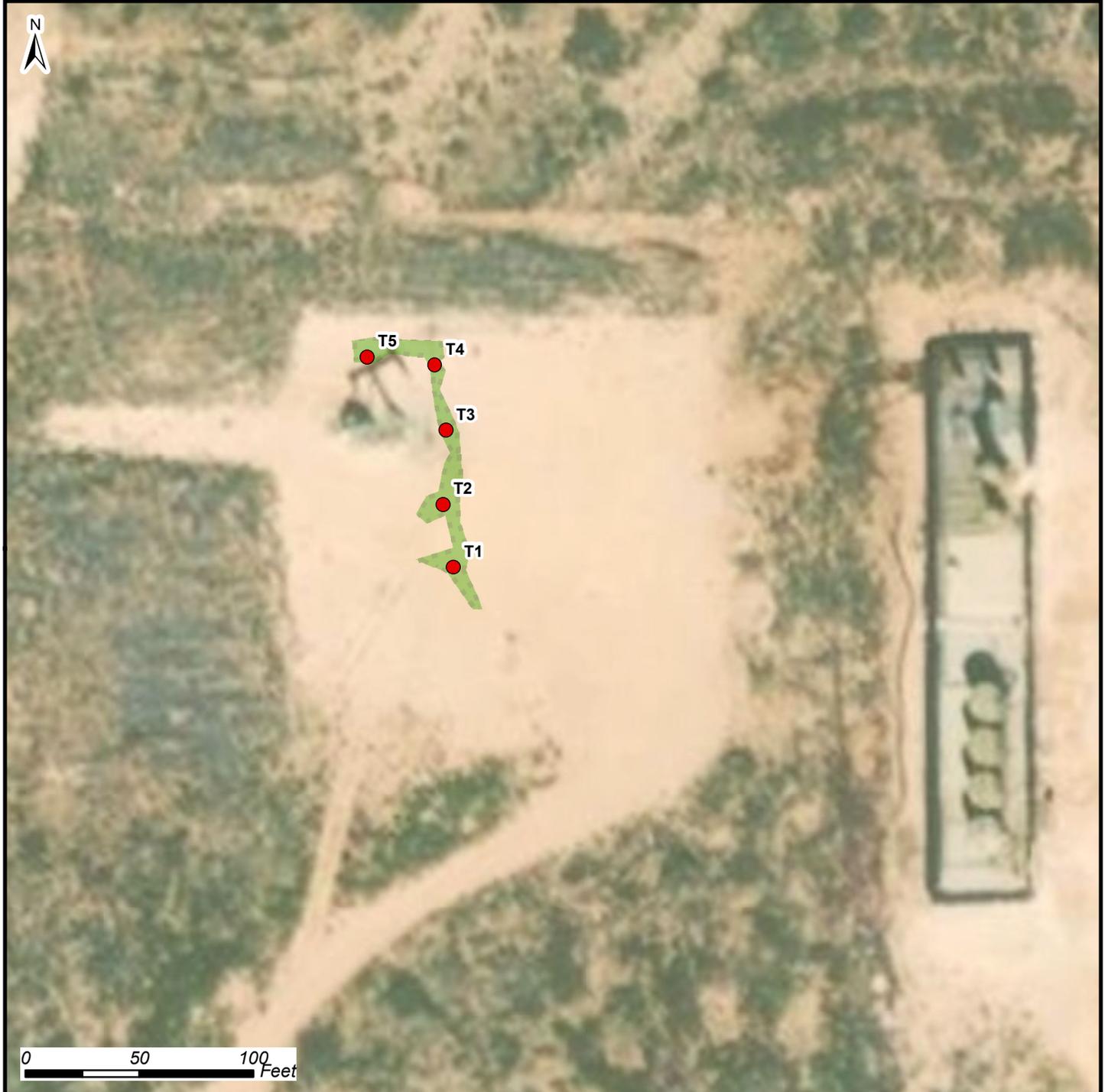
DISCLAIMER: This representation and the Geographic Information System (GIS) used to create it are designed as a source of reference and not intended to replace official records and/or legal surveys. HRL assumes no responsibility for any risks, dangers, or liabilities that may result from its use and makes no guarantees as to the quality or accuracy of the underlying data.



Author: A. Asay
Revision: 0
Date: 7/13/2018



Figure 2:
Site and Sample Location Map



Site and Sample Location Map

GC Federal 55
32.817412 -103.800378
Section 19, Township 17 South, Range 32 East

Legend

- Sample Points
- Proposed Remediation Area

DISCLAIMER: This representation and the Geographic Information System (GIS) used to create it are designed as a source of reference and not intended to replace official records and/or legal surveys. HRL assumes no responsibility for any risks, dangers, or liabilities that may result from its use and makes no guarantees as to the quality or accuracy of the underlying data.



Author: A. Asay
Revision: 0
Date: 7/12/2018



Table 3: Analytical Results Summary

TABLE 1												
Summary of Delineation Sampling Analytical Results												
Concentrations of Benzene, BTEX, TPH & Chloride in Soil												
Concho												
GC Federal #055												
Lea County, New Mexico												
NMOCD REF: 2RP-5052												
SAMPLE LOCATION	SAMPLE DEPTH (bgs)	SAMPLE DATE	SOIL STATUS	8021B					8015M			300.0
				BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYLBENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)	TOTAL BTEX (mg/Kg)	GRO (mg/Kg)	DRO (mg/Kg)	Total TPH (mg/Kg)	CHLORIDE (mg/Kg)
NMOCD - Guidelines for Remediation of Leaks, Spills and Releases				10	NE	NE	NE	50	NE	NE	5,000	600
Vertical Delineation Sampling												
T1	Surface	5/30/2018	In-Situ	<0.05	<0.05	<0.05	<0.150	<0.300	<10.0	<0.10	<10.0	80
T1	1'	5/30/2018	In-Situ	<0.05	<0.05	<0.05	<0.150	<0.300	<10.0	<0.10	<10.0	-
T1	2'	5/30/2018	In-Situ	<0.05	<0.05	<0.05	<0.150	<0.300	<10.0	<0.10	<10.0	-
T1	3'	5/30/2018	In-Situ	<0.05	<0.05	<0.05	<0.150	<0.300	<10.0	<0.10	<10.0	-
T2	Surface	5/30/2018	In-Situ	<0.05	<0.05	<0.05	<0.150	<0.300	<10.0	<0.10	<10.0	16
T2	1'	5/30/2018	In-Situ	<0.05	<0.05	<0.05	<0.150	<0.300	<10.0	<0.10	<10.0	-
T2	2'	5/30/2018	In-Situ	<0.05	<0.05	<0.05	<0.150	<0.300	<10.0	<0.10	<10.0	-
T2	3'	5/30/2018	In-Situ	<0.05	<0.05	<0.05	<0.150	<0.300	<10.0	<0.10	<10.0	-
T2	4'	5/30/2018	In-Situ	<0.05	<0.05	<0.05	<0.150	<0.300	<10.0	<0.10	<10.0	-
T2	5'	5/30/2018	In-Situ	<0.05	<0.05	<0.05	<0.150	<0.300	<10.0	<0.10	<10.0	-
T3	Surface	5/30/2018	In-Situ	<0.05	<0.05	<0.05	<0.150	<0.300	<10.0	<0.10	<10.0	12,700
T3	1'	5/30/2018	In-Situ	<0.05	<0.05	<0.05	<0.150	<0.300	<10.0	<0.10	<10.0	6,400
T3	2'	5/30/2018	In-Situ	<0.05	<0.05	<0.05	<0.150	<0.300	<10.0	<0.10	<10.0	3,200
T3	3'	5/30/2018	In-Situ	<0.05	<0.05	<0.05	<0.150	<0.300	<10.0	<0.10	<10.0	4,200
T3	4'	5/30/2018	In-Situ	<0.05	<0.05	<0.05	<0.150	<0.300	<10.0	<0.10	<10.0	832
T3	5'	5/30/2018	In-Situ	<0.05	<0.05	<0.05	<0.150	<0.300	<10.0	<0.10	<10.0	1,010
T3	6'	5/30/2018	In-Situ	<0.05	<0.05	<0.05	<0.150	<0.300	<10.0	<0.10	<10.0	528
T3	8'	5/30/2018	In-Situ	<0.05	<0.05	<0.05	<0.150	<0.300	<10.0	<0.10	<10.0	-
T3	10'	5/30/2018	In-Situ	<0.05	<0.05	<0.05	<0.150	<0.300	<10.0	<0.10	<10.0	-
T4	Surface	5/30/2018	In-Situ	<0.05	<0.05	<0.05	<0.150	<0.300	<10.0	<0.10	<10.0	128
T4	1'	5/30/2018	In-Situ	<0.05	<0.05	<0.05	<0.150	<0.300	<10.0	<0.10	<10.0	-
T4	2'	5/30/2018	In-Situ	<0.05	<0.05	<0.05	<0.150	<0.300	<10.0	<0.10	<10.0	-
T4	3'	5/30/2018	In-Situ	<0.05	<0.05	<0.05	<0.150	<0.300	<10.0	<0.10	<10.0	-
T4	4'	5/30/2018	In-Situ	<0.05	<0.05	<0.05	<0.150	<0.300	<10.0	<0.10	<10.0	-
T4	5'	5/30/2018	In-Situ	<0.05	<0.05	<0.05	<0.150	<0.300	<10.0	<0.10	<10.0	-
T5	Surface	5/30/2018	In-Situ	<0.05	<0.05	<0.05	<0.150	<0.300	<10.0	<0.10	<10.0	3,160
T5	1'	5/30/2018	In-Situ	<0.05	<0.05	<0.05	<0.150	<0.300	<10.0	<0.10	<10.0	2,720
T5	2'	5/30/2018	In-Situ	<0.05	<0.05	<0.05	<0.150	<0.300	<10.0	<0.10	<10.0	3,800
T5	3'	5/30/2018	In-Situ	<0.05	<0.05	<0.05	<0.150	<0.300	<10.0	<0.10	<10.0	1,620
T5	4'	5/30/2018	In-Situ	<0.05	<0.05	<0.05	<0.150	<0.300	<10.0	<0.10	<10.0	800
T5	5'	5/30/2018	In-Situ	<0.05	<0.05	<0.05	<0.150	<0.300	<10.0	<0.10	<10.0	848
T5	6'	5/30/2018	In-Situ	<0.05	<0.05	<0.05	<0.150	<0.300	<10.0	<0.10	<10.0	704
T5	8'	5/30/2018	In-Situ	<0.05	<0.05	<0.05	<0.150	<0.300	<10.0	<0.10	<10.0	384
T5	10'	5/30/2018	In-Situ	<0.05	<0.05	<0.05	<0.150	<0.300	<10.0	<0.10	<10.0	-
mg/Kg - milligrams per Kilogram												
- = Not Established												
Concentrations in BOLD exceed the NMOCD Guidelines												
Proposed excavated area												



Appendix A: Form C141 Initial

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: GC Federal #055	Facility Type: Flowline

Surface Owner: Federal	Mineral Owner: Federal	API No. 30-025-40007
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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
I	19	17S	32E	1,630	South	990	East	Lea

Latitude 32.8173409 Longitude -103.8004608 NAD83

NATURE OF RELEASE

Type of Release: Oil & Produced Water	Volume of Release: 10 bbl. Oil 30 bbl. Produced Water	Volume Recovered: 8 bbl. Oil 25 bbl. Produced Water
Source of Release: Flowline Corrosion	Date and Hour of Occurrence: May 7, 2018 9:00am	Date and Hour of Discovery: May 7, 2018 9:00am
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 Henryetta Price – BLM Shelley Tucker - BLM	
By Whom? Sheldon Hitchcock	Date and Hour: May 7, 2018 9:42am	
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.*

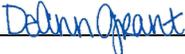
Describe Cause of Problem and Remedial Action Taken.*

The release was caused by a hole in a steel flowline due to corrosion. The flowline is being replaced.

Describe Area Affected and Cleanup Action Taken.*

The release occurred on location. A vacuum truck was dispatched to remove all freestanding fluids. Concho will have the spill area sampled to delineate 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.

		<u>OIL CONSERVATION DIVISION</u>	
Signature: 	Approved by Environmental Specialist:		
Printed Name: DeAnn Grant	Approval Date:	Expiration Date:	
Title: HSE Administrative Assistant	Conditions of Approval:		
E-mail Address: agrant@concho.com			Attached <input type="checkbox"/>
Date: May 9, 2018	Phone: 432-253-4513		

* Attach Additional Sheets If Necessary



Appendix B: NMOSE Well Report



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	Distance	Depth Well	Depth Water	Water Column
RA 10175			LE	2	1	28	17S	32E		614814	3631005*	2574	158		
RA 12020 POD1			LE	2	2	1	28	17S	32E	614828	3630954	2600	120	81	39
RA 12042 POD1			LE	2	2	1	28	17S	32E	614891	3631181	2609	400		

Average Depth to Water: **81 feet**

Minimum Depth: **81 feet**

Maximum Depth: **81 feet**

Record Count: 3

UTMNAD83 Radius Search (in meters):

Easting (X): 612328.52

Northing (Y): 3631675.18

Radius: 4828

*UTM location was derived from PLSS - see Help

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



Appendix C: Laboratory Analytical Reports



June 08, 2018

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

RE: GC FEDERAL #55

Enclosed are the results of analyses for samples received by the laboratory on 05/31/18 11:30.

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/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive style.

Celey D. Keene
Lab Director/Quality Manager

Analytical Results For:

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

 Received: 05/31/2018
 Reported: 06/08/2018
 Project Name: GC FEDERAL #55
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 05/30/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: T1 - SURFACE (H801489-01)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/04/2018	ND	2.17	108	2.00	0.751	
Toluene*	<0.050	0.050	06/04/2018	ND	2.16	108	2.00	0.514	
Ethylbenzene*	<0.050	0.050	06/04/2018	ND	2.12	106	2.00	0.363	
Total Xylenes*	<0.150	0.150	06/04/2018	ND	6.24	104	6.00	0.166	
Total BTEX	<0.300	0.300	06/04/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 112 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	06/05/2018	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/02/2018	ND	196	98.0	200	0.929	
DRO >C10-C28*	<10.0	10.0	06/02/2018	ND	211	105	200	1.20	
EXT DRO >C28-C36	<10.0	10.0	06/02/2018	ND					

Surrogate: 1-Chlorooctane 82.8 % 41-142

Surrogate: 1-Chlorooctadecane 73.2 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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



Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 05/31/2018
 Reported: 06/08/2018
 Project Name: GC FEDERAL #55
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 05/30/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: T1 - 1' (H801489-02)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/04/2018	ND	2.17	108	2.00	0.751		
Toluene*	<0.050	0.050	06/04/2018	ND	2.16	108	2.00	0.514		
Ethylbenzene*	<0.050	0.050	06/04/2018	ND	2.12	106	2.00	0.363		
Total Xylenes*	<0.150	0.150	06/04/2018	ND	6.24	104	6.00	0.166		
Total BTEX	<0.300	0.300	06/04/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 108 % 69.8-142

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	06/02/2018	ND	196	98.0	200	0.929		
DRO >C10-C28*	35.3	10.0	06/02/2018	ND	211	105	200	1.20		
EXT DRO >C28-C36	<10.0	10.0	06/02/2018	ND						

Surrogate: 1-Chlorooctane 89.8 % 41-142

Surrogate: 1-Chlorooctadecane 82.4 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 05/31/2018
 Reported: 06/08/2018
 Project Name: GC FEDERAL #55
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 05/30/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: T1 - 2' (H801489-03)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/04/2018	ND	2.17	108	2.00	0.751		
Toluene*	<0.050	0.050	06/04/2018	ND	2.16	108	2.00	0.514		
Ethylbenzene*	<0.050	0.050	06/04/2018	ND	2.12	106	2.00	0.363		
Total Xylenes*	<0.150	0.150	06/04/2018	ND	6.24	104	6.00	0.166		
Total BTEX	<0.300	0.300	06/04/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 109 % 69.8-142

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	06/02/2018	ND	196	98.0	200	0.929		
DRO >C10-C28*	<10.0	10.0	06/02/2018	ND	211	105	200	1.20		
EXT DRO >C28-C36	<10.0	10.0	06/02/2018	ND						

Surrogate: 1-Chlorooctane 89.9 % 41-142

Surrogate: 1-Chlorooctadecane 81.3 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 05/31/2018
 Reported: 06/08/2018
 Project Name: GC FEDERAL #55
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 05/30/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: T1 - 3' (H801489-04)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/04/2018	ND	2.17	108	2.00	0.751	
Toluene*	<0.050	0.050	06/04/2018	ND	2.16	108	2.00	0.514	
Ethylbenzene*	<0.050	0.050	06/04/2018	ND	2.12	106	2.00	0.363	
Total Xylenes*	<0.150	0.150	06/04/2018	ND	6.24	104	6.00	0.166	
Total BTEX	<0.300	0.300	06/04/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 109 % 69.8-142

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/02/2018	ND	196	98.0	200	0.929	
DRO >C10-C28*	<10.0	10.0	06/02/2018	ND	211	105	200	1.20	
EXT DRO >C28-C36	<10.0	10.0	06/02/2018	ND					

Surrogate: 1-Chlorooctane 88.9 % 41-142

Surrogate: 1-Chlorooctadecane 80.8 % 37.6-147

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Analytical Results For:

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

 Received: 05/31/2018
 Reported: 06/08/2018
 Project Name: GC FEDERAL #55
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 05/30/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: T2 - SURFACE (H801489-05)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/04/2018	ND	2.17	108	2.00	0.751		
Toluene*	<0.050	0.050	06/04/2018	ND	2.16	108	2.00	0.514		
Ethylbenzene*	<0.050	0.050	06/04/2018	ND	2.12	106	2.00	0.363		
Total Xylenes*	<0.150	0.150	06/04/2018	ND	6.24	104	6.00	0.166		
Total BTEX	<0.300	0.300	06/04/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.8 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	06/05/2018	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	06/02/2018	ND	196	98.0	200	0.929		
DRO >C10-C28*	<10.0	10.0	06/02/2018	ND	211	105	200	1.20		
EXT DRO >C28-C36	<10.0	10.0	06/02/2018	ND						

Surrogate: 1-Chlorooctane 85.7 % 41-142

Surrogate: 1-Chlorooctadecane 77.0 % 37.6-147

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Analytical Results For:

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

 Received: 05/31/2018
 Reported: 06/08/2018
 Project Name: GC FEDERAL #55
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 05/30/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: T2 - 1' (H801489-06)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/04/2018	ND	2.17	108	2.00	0.751	
Toluene*	<0.050	0.050	06/04/2018	ND	2.16	108	2.00	0.514	
Ethylbenzene*	<0.050	0.050	06/04/2018	ND	2.12	106	2.00	0.363	
Total Xylenes*	<0.150	0.150	06/04/2018	ND	6.24	104	6.00	0.166	
Total BTEX	<0.300	0.300	06/04/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 109 % 69.8-142

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/02/2018	ND	196	98.0	200	0.929	
DRO >C10-C28*	<10.0	10.0	06/02/2018	ND	211	105	200	1.20	
EXT DRO >C28-C36	<10.0	10.0	06/02/2018	ND					

Surrogate: 1-Chlorooctane 90.7 % 41-142

Surrogate: 1-Chlorooctadecane 82.8 % 37.6-147

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Analytical Results For:

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

 Received: 05/31/2018
 Reported: 06/08/2018
 Project Name: GC FEDERAL #55
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 05/30/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: T2 - 2' (H801489-07)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/02/2018	ND	1.80	90.0	2.00	1.24		
Toluene*	<0.050	0.050	06/02/2018	ND	1.76	88.0	2.00	1.44		
Ethylbenzene*	<0.050	0.050	06/02/2018	ND	1.74	87.2	2.00	0.914		
Total Xylenes*	<0.150	0.150	06/02/2018	ND	5.36	89.3	6.00	0.940		
Total BTEX	<0.300	0.300	06/02/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 117 % 69.8-142

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	06/02/2018	ND	196	98.0	200	0.929		
DRO >C10-C28*	<10.0	10.0	06/02/2018	ND	211	105	200	1.20		
EXT DRO >C28-C36	<10.0	10.0	06/02/2018	ND						

Surrogate: 1-Chlorooctane 93.2 % 41-142

Surrogate: 1-Chlorooctadecane 83.4 % 37.6-147

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Analytical Results For:

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

 Received: 05/31/2018
 Reported: 06/08/2018
 Project Name: GC FEDERAL #55
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 05/30/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: T2 - 3' (H801489-08)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/02/2018	ND	1.80	90.0	2.00	1.24		
Toluene*	<0.050	0.050	06/02/2018	ND	1.76	88.0	2.00	1.44		
Ethylbenzene*	<0.050	0.050	06/02/2018	ND	1.74	87.2	2.00	0.914		
Total Xylenes*	<0.150	0.150	06/02/2018	ND	5.36	89.3	6.00	0.940		
Total BTEX	<0.300	0.300	06/02/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 114 % 69.8-142

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	06/02/2018	ND	196	98.0	200	0.929		
DRO >C10-C28*	<10.0	10.0	06/02/2018	ND	211	105	200	1.20		
EXT DRO >C28-C36	<10.0	10.0	06/02/2018	ND						

Surrogate: 1-Chlorooctane 84.6 % 41-142

Surrogate: 1-Chlorooctadecane 76.2 % 37.6-147

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Analytical Results For:

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

 Received: 05/31/2018
 Reported: 06/08/2018
 Project Name: GC FEDERAL #55
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 05/30/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: T2 - 4' (H801489-09)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/02/2018	ND	1.80	90.0	2.00	1.24		
Toluene*	<0.050	0.050	06/02/2018	ND	1.76	88.0	2.00	1.44		
Ethylbenzene*	<0.050	0.050	06/02/2018	ND	1.74	87.2	2.00	0.914		
Total Xylenes*	<0.150	0.150	06/02/2018	ND	5.36	89.3	6.00	0.940		
Total BTEX	<0.300	0.300	06/02/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 113 % 69.8-142

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	06/02/2018	ND	196	98.0	200	0.929		
DRO >C10-C28*	<10.0	10.0	06/02/2018	ND	211	105	200	1.20		
EXT DRO >C28-C36	<10.0	10.0	06/02/2018	ND						

Surrogate: 1-Chlorooctane 89.1 % 41-142

Surrogate: 1-Chlorooctadecane 80.6 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 05/31/2018
 Reported: 06/08/2018
 Project Name: GC FEDERAL #55
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 05/30/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: T2 - 5' (H801489-10)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/02/2018	ND	1.80	90.0	2.00	1.24	
Toluene*	<0.050	0.050	06/02/2018	ND	1.76	88.0	2.00	1.44	
Ethylbenzene*	<0.050	0.050	06/02/2018	ND	1.74	87.2	2.00	0.914	
Total Xylenes*	<0.150	0.150	06/02/2018	ND	5.36	89.3	6.00	0.940	
Total BTEX	<0.300	0.300	06/02/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 110 % 69.8-142

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/02/2018	ND	196	98.0	200	0.929	
DRO >C10-C28*	<10.0	10.0	06/02/2018	ND	211	105	200	1.20	
EXT DRO >C28-C36	<10.0	10.0	06/02/2018	ND					

Surrogate: 1-Chlorooctane 89.7 % 41-142

Surrogate: 1-Chlorooctadecane 80.3 % 37.6-147

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Analytical Results For:

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

 Received: 05/31/2018
 Reported: 06/08/2018
 Project Name: GC FEDERAL #55
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 05/30/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: T3 - SURFACE (H801489-11)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/02/2018	ND	1.80	90.0	2.00	1.24		
Toluene*	<0.050	0.050	06/02/2018	ND	1.76	88.0	2.00	1.44		
Ethylbenzene*	<0.050	0.050	06/02/2018	ND	1.74	87.2	2.00	0.914		
Total Xylenes*	<0.150	0.150	06/02/2018	ND	5.36	89.3	6.00	0.940		
Total BTEX	<0.300	0.300	06/02/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 111 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	12700	16.0	06/05/2018	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	06/02/2018	ND	196	98.0	200	0.929		
DRO >C10-C28*	<10.0	10.0	06/02/2018	ND	211	105	200	1.20		
EXT DRO >C28-C36	<10.0	10.0	06/02/2018	ND						

Surrogate: 1-Chlorooctane 79.1 % 41-142

Surrogate: 1-Chlorooctadecane 71.3 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 05/31/2018
 Reported: 06/08/2018
 Project Name: GC FEDERAL #55
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 05/30/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: T3 - 1' (H801489-12)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/02/2018	ND	1.80	90.0	2.00	1.24		
Toluene*	<0.050	0.050	06/02/2018	ND	1.76	88.0	2.00	1.44		
Ethylbenzene*	<0.050	0.050	06/02/2018	ND	1.74	87.2	2.00	0.914		
Total Xylenes*	<0.150	0.150	06/02/2018	ND	5.36	89.3	6.00	0.940		
Total BTEX	<0.300	0.300	06/02/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 108 % 69.8-142

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	6400	16.0	06/05/2018	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	06/02/2018	ND	196	98.0	200	0.929		
DRO >C10-C28*	<10.0	10.0	06/02/2018	ND	211	105	200	1.20		
EXT DRO >C28-C36	<10.0	10.0	06/02/2018	ND						

Surrogate: 1-Chlorooctane 87.3 % 41-142

Surrogate: 1-Chlorooctadecane 78.9 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 05/31/2018
 Reported: 06/08/2018
 Project Name: GC FEDERAL #55
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 05/30/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: T3 - 2' (H801489-13)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/02/2018	ND	1.80	90.0	2.00	1.24		
Toluene*	<0.050	0.050	06/02/2018	ND	1.76	88.0	2.00	1.44		
Ethylbenzene*	<0.050	0.050	06/02/2018	ND	1.74	87.2	2.00	0.914		
Total Xylenes*	<0.150	0.150	06/02/2018	ND	5.36	89.3	6.00	0.940		
Total BTEX	<0.300	0.300	06/02/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 108 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	3200	16.0	06/05/2018	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	06/02/2018	ND	196	98.0	200	0.929		
DRO >C10-C28*	<10.0	10.0	06/02/2018	ND	211	105	200	1.20		
EXT DRO >C28-C36	<10.0	10.0	06/02/2018	ND						

Surrogate: 1-Chlorooctane 88.0 % 41-142

Surrogate: 1-Chlorooctadecane 79.9 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 05/31/2018
 Reported: 06/08/2018
 Project Name: GC FEDERAL #55
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 05/30/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: T3 - 3' (H801489-14)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/02/2018	ND	1.80	90.0	2.00	1.24		
Toluene*	<0.050	0.050	06/02/2018	ND	1.76	88.0	2.00	1.44		
Ethylbenzene*	<0.050	0.050	06/02/2018	ND	1.74	87.2	2.00	0.914		
Total Xylenes*	<0.150	0.150	06/02/2018	ND	5.36	89.3	6.00	0.940		
Total BTEX	<0.300	0.300	06/02/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 109 % 69.8-142

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	4200	16.0	06/05/2018	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	06/02/2018	ND	196	98.0	200	0.929		
DRO >C10-C28*	<10.0	10.0	06/02/2018	ND	211	105	200	1.20		
EXT DRO >C28-C36	<10.0	10.0	06/02/2018	ND						

Surrogate: 1-Chlorooctane 85.5 % 41-142

Surrogate: 1-Chlorooctadecane 77.7 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 05/31/2018
 Reported: 06/08/2018
 Project Name: GC FEDERAL #55
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 05/30/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: T3 - 4' (H801489-15)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/02/2018	ND	1.80	90.0	2.00	1.24	
Toluene*	<0.050	0.050	06/02/2018	ND	1.76	88.0	2.00	1.44	
Ethylbenzene*	<0.050	0.050	06/02/2018	ND	1.74	87.2	2.00	0.914	
Total Xylenes*	<0.150	0.150	06/02/2018	ND	5.36	89.3	6.00	0.940	
Total BTEX	<0.300	0.300	06/02/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	832	16.0	06/05/2018	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/02/2018	ND	196	98.0	200	0.929	
DRO >C10-C28*	<10.0	10.0	06/02/2018	ND	211	105	200	1.20	
EXT DRO >C28-C36	<10.0	10.0	06/02/2018	ND					

Surrogate: 1-Chlorooctane 86.7 % 41-142

Surrogate: 1-Chlorooctadecane 81.2 % 37.6-147

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Analytical Results For:

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

 Received: 05/31/2018
 Reported: 06/08/2018
 Project Name: GC FEDERAL #55
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 05/30/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: T3 - 5' (H801489-16)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/02/2018	ND	1.80	90.0	2.00	1.24	
Toluene*	<0.050	0.050	06/02/2018	ND	1.76	88.0	2.00	1.44	
Ethylbenzene*	<0.050	0.050	06/02/2018	ND	1.74	87.2	2.00	0.914	
Total Xylenes*	<0.150	0.150	06/02/2018	ND	5.36	89.3	6.00	0.940	
Total BTEX	<0.300	0.300	06/02/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 106 % 69.8-142

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1010	16.0	06/05/2018	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/02/2018	ND	196	98.0	200	0.929	
DRO >C10-C28*	<10.0	10.0	06/02/2018	ND	211	105	200	1.20	
EXT DRO >C28-C36	<10.0	10.0	06/02/2018	ND					

Surrogate: 1-Chlorooctane 81.4 % 41-142

Surrogate: 1-Chlorooctadecane 72.6 % 37.6-147

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Analytical Results For:

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

 Received: 05/31/2018
 Reported: 06/08/2018
 Project Name: GC FEDERAL #55
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 05/30/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: T3 - 6' (H801489-17)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/02/2018	ND	1.80	90.0	2.00	1.24	
Toluene*	<0.050	0.050	06/02/2018	ND	1.76	88.0	2.00	1.44	
Ethylbenzene*	<0.050	0.050	06/02/2018	ND	1.74	87.2	2.00	0.914	
Total Xylenes*	<0.150	0.150	06/02/2018	ND	5.36	89.3	6.00	0.940	
Total BTEX	<0.300	0.300	06/02/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 106 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	528	16.0	06/05/2018	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/01/2018	ND	170	85.0	200	12.3	
DRO >C10-C28*	<10.0	10.0	06/01/2018	ND	174	87.2	200	11.9	
EXT DRO >C28-C36	<10.0	10.0	06/01/2018	ND					

Surrogate: 1-Chlorooctane 44.4 % 41-142

Surrogate: 1-Chlorooctadecane 46.0 % 37.6-147

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Analytical Results For:

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

 Received: 05/31/2018
 Reported: 06/08/2018
 Project Name: GC FEDERAL #55
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 05/30/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: T3 - 8' (H801489-18)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/02/2018	ND	1.80	90.0	2.00	1.24		
Toluene*	<0.050	0.050	06/02/2018	ND	1.76	88.0	2.00	1.44		
Ethylbenzene*	<0.050	0.050	06/02/2018	ND	1.74	87.2	2.00	0.914		
Total Xylenes*	<0.150	0.150	06/02/2018	ND	5.36	89.3	6.00	0.940		
Total BTEX	<0.300	0.300	06/02/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 69.8-142

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	06/01/2018	ND	170	85.0	200	12.3		
DRO >C10-C28*	<10.0	10.0	06/01/2018	ND	174	87.2	200	11.9		
EXT DRO >C28-C36	<10.0	10.0	06/01/2018	ND						

Surrogate: 1-Chlorooctane 47.2 % 41-142

Surrogate: 1-Chlorooctadecane 49.4 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 05/31/2018
 Reported: 06/08/2018
 Project Name: GC FEDERAL #55
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 05/30/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: T3 - 10' (H801489-19)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/02/2018	ND	1.80	90.0	2.00	1.24		
Toluene*	<0.050	0.050	06/02/2018	ND	1.76	88.0	2.00	1.44		
Ethylbenzene*	<0.050	0.050	06/02/2018	ND	1.74	87.2	2.00	0.914		
Total Xylenes*	<0.150	0.150	06/02/2018	ND	5.36	89.3	6.00	0.940		
Total BTEX	<0.300	0.300	06/02/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 107 % 69.8-142

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	06/01/2018	ND	170	85.0	200	12.3		
DRO >C10-C28*	<10.0	10.0	06/01/2018	ND	174	87.2	200	11.9		
EXT DRO >C28-C36	<10.0	10.0	06/01/2018	ND						

Surrogate: 1-Chlorooctane 60.5 % 41-142

Surrogate: 1-Chlorooctadecane 63.5 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 05/31/2018
 Reported: 06/08/2018
 Project Name: GC FEDERAL #55
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 05/30/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: T4 - SURFACE (H801489-20)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/02/2018	ND	1.80	90.0	2.00	1.24		
Toluene*	<0.050	0.050	06/02/2018	ND	1.76	88.0	2.00	1.44		
Ethylbenzene*	<0.050	0.050	06/02/2018	ND	1.74	87.2	2.00	0.914		
Total Xylenes*	<0.150	0.150	06/02/2018	ND	5.36	89.3	6.00	0.940		
Total BTEX	<0.300	0.300	06/02/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	128	16.0	06/05/2018	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	06/01/2018	ND	170	85.0	200	12.3		
DRO >C10-C28*	<10.0	10.0	06/01/2018	ND	174	87.2	200	11.9		
EXT DRO >C28-C36	<10.0	10.0	06/01/2018	ND						

Surrogate: 1-Chlorooctane 68.3 % 41-142

Surrogate: 1-Chlorooctadecane 71.5 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 05/31/2018
 Reported: 06/08/2018
 Project Name: GC FEDERAL #55
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 05/30/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: T4 - 1' (H801489-21)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/02/2018	ND	1.80	90.0	2.00	1.24		
Toluene*	<0.050	0.050	06/02/2018	ND	1.76	88.0	2.00	1.44		
Ethylbenzene*	<0.050	0.050	06/02/2018	ND	1.74	87.2	2.00	0.914		
Total Xylenes*	<0.150	0.150	06/02/2018	ND	5.36	89.3	6.00	0.940		
Total BTEX	<0.300	0.300	06/02/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 105 % 69.8-142

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	06/01/2018	ND	170	85.0	200	12.3		
DRO >C10-C28*	<10.0	10.0	06/01/2018	ND	174	87.2	200	11.9		
EXT DRO >C28-C36	<10.0	10.0	06/01/2018	ND						

Surrogate: 1-Chlorooctane 71.3 % 41-142

Surrogate: 1-Chlorooctadecane 74.8 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 05/31/2018
 Reported: 06/08/2018
 Project Name: GC FEDERAL #55
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 05/30/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: T4 - 2' (H801489-22)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/02/2018	ND	1.80	90.0	2.00	1.24	
Toluene*	<0.050	0.050	06/02/2018	ND	1.76	88.0	2.00	1.44	
Ethylbenzene*	<0.050	0.050	06/02/2018	ND	1.74	87.2	2.00	0.914	
Total Xylenes*	<0.150	0.150	06/02/2018	ND	5.36	89.3	6.00	0.940	
Total BTEX	<0.300	0.300	06/02/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 69.8-142

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/01/2018	ND	170	85.0	200	12.3	
DRO >C10-C28*	<10.0	10.0	06/01/2018	ND	174	87.2	200	11.9	
EXT DRO >C28-C36	<10.0	10.0	06/01/2018	ND					

Surrogate: 1-Chlorooctane 64.6 % 41-142

Surrogate: 1-Chlorooctadecane 65.7 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received:	05/31/2018	Sampling Date:	05/30/2018
Reported:	06/08/2018	Sampling Type:	Soil
Project Name:	GC FEDERAL #55	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: T4 - 3' (H801489-23)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/02/2018	ND	1.80	90.0	2.00	1.24		
Toluene*	<0.050	0.050	06/02/2018	ND	1.76	88.0	2.00	1.44		
Ethylbenzene*	<0.050	0.050	06/02/2018	ND	1.74	87.2	2.00	0.914		
Total Xylenes*	<0.150	0.150	06/02/2018	ND	5.36	89.3	6.00	0.940		
Total BTEX	<0.300	0.300	06/02/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 69.8-142

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	06/01/2018	ND	170	85.0	200	12.3		
DRO >C10-C28*	<10.0	10.0	06/01/2018	ND	174	87.2	200	11.9		
EXT DRO >C28-C36	<10.0	10.0	06/01/2018	ND						

Surrogate: 1-Chlorooctane 70.9 % 41-142

Surrogate: 1-Chlorooctadecane 74.0 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 05/31/2018
 Reported: 06/08/2018
 Project Name: GC FEDERAL #55
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 05/30/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: T4 - 4' (H801489-24)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/02/2018	ND	1.80	90.0	2.00	1.24		
Toluene*	<0.050	0.050	06/02/2018	ND	1.76	88.0	2.00	1.44		
Ethylbenzene*	<0.050	0.050	06/02/2018	ND	1.74	87.2	2.00	0.914		
Total Xylenes*	<0.150	0.150	06/02/2018	ND	5.36	89.3	6.00	0.940		
Total BTEX	<0.300	0.300	06/02/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 69.8-142

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	06/01/2018	ND	170	85.0	200	12.3		
DRO >C10-C28*	<10.0	10.0	06/01/2018	ND	174	87.2	200	11.9		
EXT DRO >C28-C36	<10.0	10.0	06/01/2018	ND						

Surrogate: 1-Chlorooctane 61.3 % 41-142

Surrogate: 1-Chlorooctadecane 64.1 % 37.6-147

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Analytical Results For:

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

 Received: 05/31/2018
 Reported: 06/08/2018
 Project Name: GC FEDERAL #55
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 05/30/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: T4 - 5' (H801489-25)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/04/2018	ND	2.08	104	2.00	2.18		
Toluene*	<0.050	0.050	06/04/2018	ND	2.06	103	2.00	2.34		
Ethylbenzene*	<0.050	0.050	06/04/2018	ND	2.06	103	2.00	2.02		
Total Xylenes*	<0.150	0.150	06/04/2018	ND	6.40	107	6.00	2.30		
Total BTEX	<0.300	0.300	06/04/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 111 % 69.8-142

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	06/01/2018	ND	170	85.0	200	12.3		
DRO >C10-C28*	<10.0	10.0	06/01/2018	ND	174	87.2	200	11.9		
EXT DRO >C28-C36	<10.0	10.0	06/01/2018	ND						

Surrogate: 1-Chlorooctane 73.6 % 41-142

Surrogate: 1-Chlorooctadecane 77.9 % 37.6-147

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Analytical Results For:

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

Received:	05/31/2018	Sampling Date:	05/30/2018
Reported:	06/08/2018	Sampling Type:	Soil
Project Name:	GC FEDERAL #55	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: T5 - SURFACE (H801489-26)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/04/2018	ND	2.08	104	2.00	2.18		
Toluene*	<0.050	0.050	06/04/2018	ND	2.06	103	2.00	2.34		
Ethylbenzene*	<0.050	0.050	06/04/2018	ND	2.06	103	2.00	2.02		
Total Xylenes*	<0.150	0.150	06/04/2018	ND	6.40	107	6.00	2.30		
Total BTEX	<0.300	0.300	06/04/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 113 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	3160	16.0	06/05/2018	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	06/01/2018	ND	170	85.0	200	12.3		
DRO >C10-C28*	471	10.0	06/01/2018	ND	174	87.2	200	11.9		
EXT DRO >C28-C36	118	10.0	06/01/2018	ND						

Surrogate: 1-Chlorooctane 77.5 % 41-142

Surrogate: 1-Chlorooctadecane 119 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 05/31/2018
 Reported: 06/08/2018
 Project Name: GC FEDERAL #55
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 05/30/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: T5 - 1' (H801489-27)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/04/2018	ND	2.08	104	2.00	2.18	
Toluene*	<0.050	0.050	06/04/2018	ND	2.06	103	2.00	2.34	
Ethylbenzene*	<0.050	0.050	06/04/2018	ND	2.06	103	2.00	2.02	
Total Xylenes*	<0.150	0.150	06/04/2018	ND	6.40	107	6.00	2.30	
Total BTEX	<0.300	0.300	06/04/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 110 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2720	16.0	06/05/2018	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/01/2018	ND	170	85.0	200	12.3	
DRO >C10-C28*	<10.0	10.0	06/01/2018	ND	174	87.2	200	11.9	
EXT DRO >C28-C36	<10.0	10.0	06/01/2018	ND					

Surrogate: 1-Chlorooctane 72.0 % 41-142

Surrogate: 1-Chlorooctadecane 78.1 % 37.6-147

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Analytical Results For:

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

 Received: 05/31/2018
 Reported: 06/08/2018
 Project Name: GC FEDERAL #55
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 05/30/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: T5 - 2' (H801489-28)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/04/2018	ND	2.08	104	2.00	2.18	
Toluene*	<0.050	0.050	06/04/2018	ND	2.06	103	2.00	2.34	
Ethylbenzene*	<0.050	0.050	06/04/2018	ND	2.06	103	2.00	2.02	
Total Xylenes*	<0.150	0.150	06/04/2018	ND	6.40	107	6.00	2.30	
Total BTEX	<0.300	0.300	06/04/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 114 % 69.8-142

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3800	16.0	06/05/2018	ND	432	108	400	0.00	QM-07

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/01/2018	ND	170	85.0	200	12.3	
DRO >C10-C28*	<10.0	10.0	06/01/2018	ND	174	87.2	200	11.9	
EXT DRO >C28-C36	<10.0	10.0	06/01/2018	ND					

Surrogate: 1-Chlorooctane 72.3 % 41-142

Surrogate: 1-Chlorooctadecane 77.2 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 05/31/2018
 Reported: 06/08/2018
 Project Name: GC FEDERAL #55
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 05/30/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: T5 - 3' (H801489-29)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/04/2018	ND	2.08	104	2.00	2.18	
Toluene*	<0.050	0.050	06/04/2018	ND	2.06	103	2.00	2.34	
Ethylbenzene*	<0.050	0.050	06/04/2018	ND	2.06	103	2.00	2.02	
Total Xylenes*	<0.150	0.150	06/04/2018	ND	6.40	107	6.00	2.30	
Total BTEX	<0.300	0.300	06/04/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 112 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1620	16.0	06/05/2018	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/02/2018	ND	170	85.0	200	12.3	
DRO >C10-C28*	<10.0	10.0	06/02/2018	ND	174	87.2	200	11.9	
EXT DRO >C28-C36	<10.0	10.0	06/02/2018	ND					

Surrogate: 1-Chlorooctane 72.8 % 41-142

Surrogate: 1-Chlorooctadecane 76.7 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 05/31/2018
 Reported: 06/08/2018
 Project Name: GC FEDERAL #55
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 05/30/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: T5 - 4' (H801489-30)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/04/2018	ND	2.08	104	2.00	2.18	
Toluene*	<0.050	0.050	06/04/2018	ND	2.06	103	2.00	2.34	
Ethylbenzene*	<0.050	0.050	06/04/2018	ND	2.06	103	2.00	2.02	
Total Xylenes*	<0.150	0.150	06/04/2018	ND	6.40	107	6.00	2.30	
Total BTEX	<0.300	0.300	06/04/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 109 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	800	16.0	06/05/2018	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/02/2018	ND	170	85.0	200	12.3	
DRO >C10-C28*	<10.0	10.0	06/02/2018	ND	174	87.2	200	11.9	
EXT DRO >C28-C36	<10.0	10.0	06/02/2018	ND					

Surrogate: 1-Chlorooctane 75.7 % 41-142

Surrogate: 1-Chlorooctadecane 80.1 % 37.6-147

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 05/31/2018
 Reported: 06/08/2018
 Project Name: GC FEDERAL #55
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 05/30/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: T5 - 5' (H801489-31)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/04/2018	ND	2.08	104	2.00	2.18	
Toluene*	<0.050	0.050	06/04/2018	ND	2.06	103	2.00	2.34	
Ethylbenzene*	<0.050	0.050	06/04/2018	ND	2.06	103	2.00	2.02	
Total Xylenes*	<0.150	0.150	06/04/2018	ND	6.40	107	6.00	2.30	
Total BTEX	<0.300	0.300	06/04/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 109 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	848	16.0	06/05/2018	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/02/2018	ND	170	85.0	200	12.3	
DRO >C10-C28*	<10.0	10.0	06/02/2018	ND	174	87.2	200	11.9	
EXT DRO >C28-C36	<10.0	10.0	06/02/2018	ND					

Surrogate: 1-Chlorooctane 67.2 % 41-142

Surrogate: 1-Chlorooctadecane 70.8 % 37.6-147

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 05/31/2018
 Reported: 06/08/2018
 Project Name: GC FEDERAL #55
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 05/30/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: T5 - 6' (H801489-32)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/04/2018	ND	2.08	104	2.00	2.18	
Toluene*	<0.050	0.050	06/04/2018	ND	2.06	103	2.00	2.34	
Ethylbenzene*	<0.050	0.050	06/04/2018	ND	2.06	103	2.00	2.02	
Total Xylenes*	<0.150	0.150	06/04/2018	ND	6.40	107	6.00	2.30	
Total BTEX	<0.300	0.300	06/04/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 107 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	704	16.0	06/05/2018	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/02/2018	ND	170	85.0	200	12.3	
DRO >C10-C28*	<10.0	10.0	06/02/2018	ND	174	87.2	200	11.9	
EXT DRO >C28-C36	<10.0	10.0	06/02/2018	ND					

Surrogate: 1-Chlorooctane 74.5 % 41-142

Surrogate: 1-Chlorooctadecane 79.0 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 05/31/2018
 Reported: 06/08/2018
 Project Name: GC FEDERAL #55
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 05/30/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: T5 - 8' (H801489-33)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/04/2018	ND	2.08	104	2.00	2.18	
Toluene*	<0.050	0.050	06/04/2018	ND	2.06	103	2.00	2.34	
Ethylbenzene*	<0.050	0.050	06/04/2018	ND	2.06	103	2.00	2.02	
Total Xylenes*	<0.150	0.150	06/04/2018	ND	6.40	107	6.00	2.30	
Total BTEX	<0.300	0.300	06/04/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 111 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	384	16.0	06/05/2018	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/02/2018	ND	170	85.0	200	12.3	
DRO >C10-C28*	<10.0	10.0	06/02/2018	ND	174	87.2	200	11.9	
EXT DRO >C28-C36	<10.0	10.0	06/02/2018	ND					

Surrogate: 1-Chlorooctane 75.5 % 41-142

Surrogate: 1-Chlorooctadecane 79.9 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 05/31/2018
 Reported: 06/08/2018
 Project Name: GC FEDERAL #55
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 05/30/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: T5 - 10' (H801489-34)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/04/2018	ND	2.08	104	2.00	2.18		
Toluene*	<0.050	0.050	06/04/2018	ND	2.06	103	2.00	2.34		
Ethylbenzene*	<0.050	0.050	06/04/2018	ND	2.06	103	2.00	2.02		
Total Xylenes*	<0.150	0.150	06/04/2018	ND	6.40	107	6.00	2.30		
Total BTEX	<0.300	0.300	06/04/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 109 % 69.8-142

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	06/02/2018	ND	170	85.0	200	12.3		
DRO >C10-C28*	<10.0	10.0	06/02/2018	ND	174	87.2	200	11.9		
EXT DRO >C28-C36	<10.0	10.0	06/02/2018	ND						

Surrogate: 1-Chlorooctane 64.9 % 41-142

Surrogate: 1-Chlorooctadecane 67.3 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- ** Samples not received at proper temperature of 6°C or below.
- *** Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C
Samples reported on an as received basis (wet) unless otherwise noted on report





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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

2 of 4

Company Name: COG Operating LLC		BILL TO	
Project Manager: Dakota Neel	P.O. #:	Company: COG Operating LLC	ANALYSIS REQUEST
Address: 2208 West Main	City: Artesia	Attn: Robert McNeill	
State: NM	Zip: 88210	Address: 600 W Illinois	
Phone #: (575) 748-6930	Fax #: Project Owner:	City: Midland	
Project #: GC Federal #55	Project Location:	State: TX	Zip: 79701
Sampler Name: Dakota Neel	FOR LAB USE ONLY	Phone #: (432) 221-0388	Fax #:

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						PRESERV	SAMPLING	DATE	TIME	BTEX	TPH	Chloride					
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :												
H801489	T3-SURFACE		1			X				X	5/30/18	8:00 AM	X	X	X						
11	T3-1'										5/30/18	8:00 AM	X	X	X						
12	T3-2'										5/30/18	8:00 AM	X	X	X						
13	T3-3'										5/30/18	8:00 AM	X	X	X						
14	T3-4'										5/30/18	8:00 AM	X	X	X						
15	T3-5'										5/30/18	8:00 AM	X	X	X						
16	T3-6'										5/30/18	8:00 AM	X	X	X						
17	T3-8'										5/30/18	8:00 AM	X	X	X						
18	T3-10'										5/30/18	8:00 AM	X	X	X						
19											5/30/18	8:00 AM	X	X	X						

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Relinquished By: *[Signature]* Date: 5-31-18
 Received By: *[Signature]* Date: 5/31/2018
 Relinquished By: *[Signature]* Date: 11:30
 Received By: *[Signature]*

Delivered By: (Circle One) UPS Bus Other: *Estimated 1.15c*
 Time: 1:30
 Sample Condition: Cool Intact
 Yes No
 CHECKED BY: *[Signature]* (Initials) *TS #95*

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



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

3054

BILL TO

ANALYSIS REQUEST

Company Name: COG Operating LLC
 Project Manager: Dakota Neel
 Address: 2208 West Main
 City: Artesia State: NM Zip: 88210
 Phone #: (575) 748-6930 Fax #: _____
 Project #: _____ Project Owner: _____
 Project Name: GC Federal #55
 Project Location: _____
 Sampler Name: Dakota Neel
 P.O. #: _____ Company: COG Operating LLC
 Attn: Robert McNeill
 Address: 600 W Illinois
 City: Midland
 State: TX Zip: 79701
 Phone #: (432) 221-0388
 Fax #: _____

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	BTEX	TPH	Chloride
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :					
4801489	T4-SURFACE		1			X				5/30/18	8:00 AM	X	X	X
20	T4-1'									5/30/18	8:00 AM	X	X	X
21	T4-2'									5/30/18	8:00 AM	X	X	X
22	T4-3'									5/30/18	8:00 AM	X	X	X
23	T4-4'									5/30/18	8:00 AM	X	X	X
24	T4-5'									5/30/18	8:00 AM	X	X	X

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Relinquished By: _____ Date: 5-31-18
 Received By: *Jessica Williams*
 Time: 11:30
 Relinquished By: _____ Date: _____
 Received By: _____
 Time: _____
 Delivered By: (Circle One) _____
 Sample Condition: Cool Intact
 Sample - UPS - Bus - Other: _____
 Checked By: (Initials) *YD #75*

Phone Result: Yes No Add'l Phone #: _____
 Fax Result: Yes No Add'l Fax #: _____
 REMARKS: dneel2@concho.com
 3. Please fax written changes to 575-393-2476

