



**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
<b>Benzene</b>	<b>10 PPM</b>	<b>10 PPM</b>	<b>10 PPM</b>
<b>BTEX</b>	<b>50 PPM</b>	<b>50 PPM</b>	<b>50 PPM</b>
<b>TPH</b>	<b>5000 PPM</b>	<b>1000 PPM</b>	<b>100 PPM</b>

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



### **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 that reads 'Jennifer Knowlton'. The signature is fluid and cursive, with the first and last names being more prominent.

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

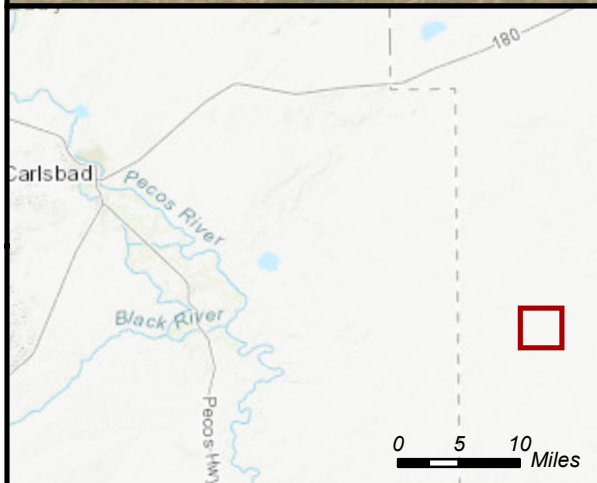
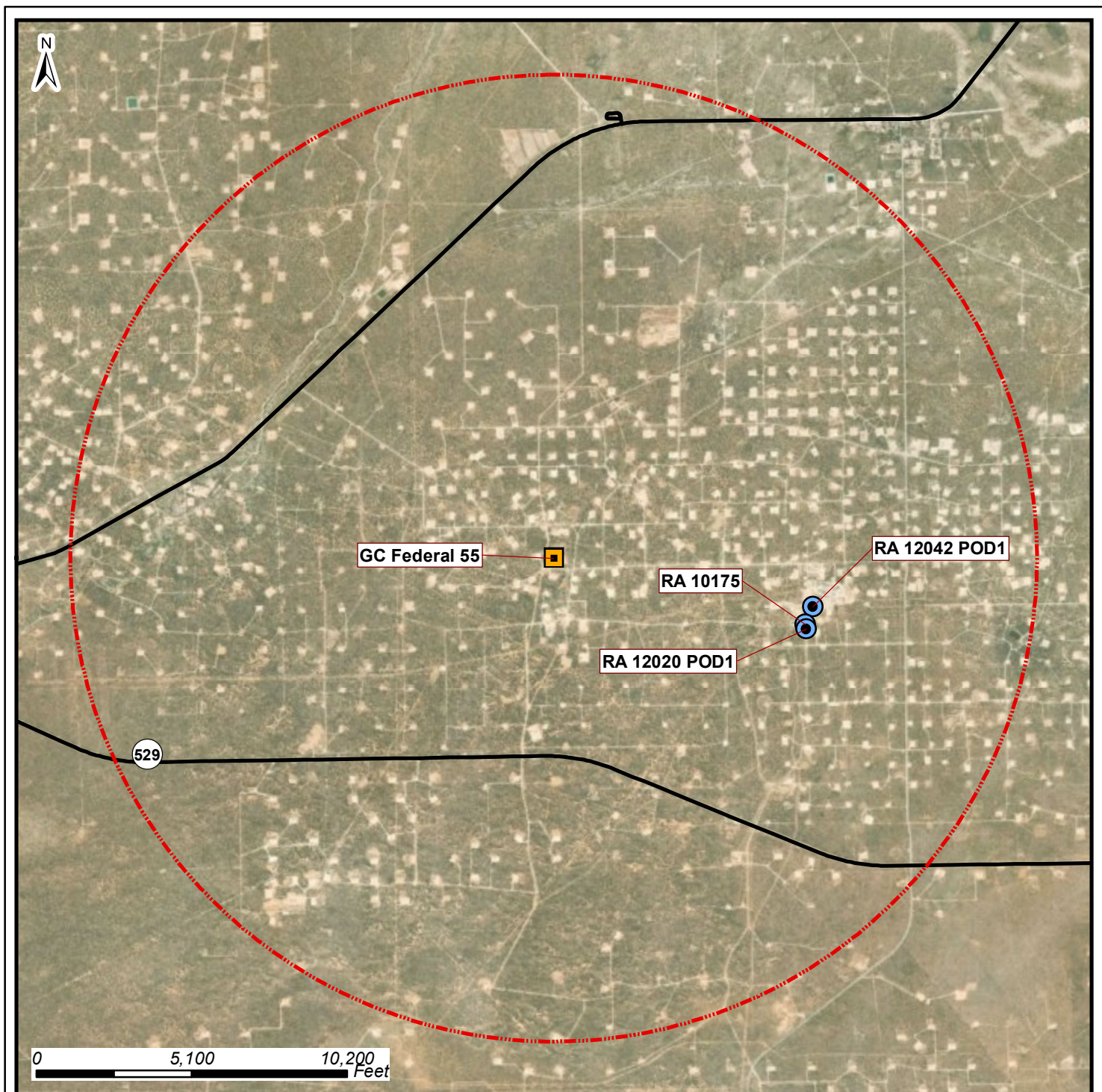
Appendix B: NMOSE Well Report

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 guarantee as to the quality or accuracy of the underlying data.



**HRL**  
COMPLIANCE  
SOLUTIONS

Author: A. Asay

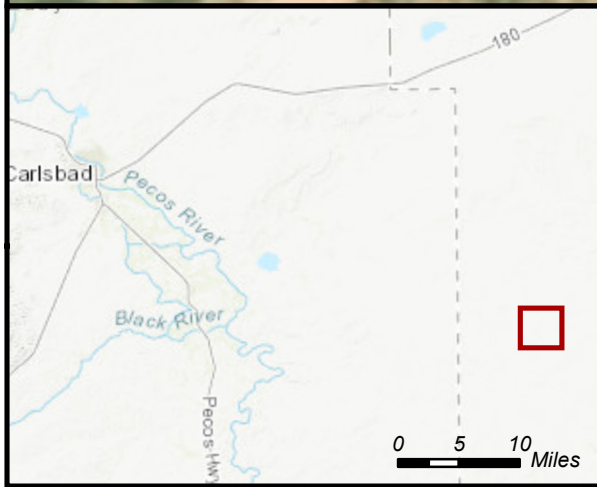
Revision: 0

Date: 7/13/2018



**Figure 2:**  
**Site and Sample Location Map**







 <b>Site and Sample Location Map</b> <b>GC Federal 55</b> 32.817412 -103.800378 Section 19, Township 17 South, Range 32 East							
<b>Legend</b> <div style="display: flex; align-items: center; margin-bottom: 5px;"> <span style="color: red; font-size: 1.2em; margin-right: 10px;">●</span> Sample Points         </div> <div style="display: flex; align-items: center;"> <span style="background-color: #90EE90; width: 20px; height: 10px; margin-right: 10px;"></span> Proposed Remediation Area         </div>							
<small>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.</small>	<div style="display: flex; align-items: center;">  </div>						
<table border="1" style="width: 100%; font-size: 0.8em;"> <tr> <td style="width: 50%;">Author: A. Asay</td> <td style="width: 50%;"></td> </tr> <tr> <td>Revision: 0</td> <td></td> </tr> <tr> <td>Date: 7/12/2018</td> <td></td> </tr> </table>		Author: A. Asay		Revision: 0		Date: 7/12/2018	
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 <b>BOLD</b> 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

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

Form C-141  
Revised April 3, 2017

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

## Release Notification and Corrective Action

### OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: COG Operating, LLC (OGRID #229137)	Contact: Robert McNeill	
Address: 600 West Illinois Avenue, Midland TX 79701	Telephone No. 432-683-7443	
Facility Name: GC Federal #055	Facility Type: Flowline	
Surface Owner: Federal	Mineral Owner: Federal	API No. 30-025-40007

### 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.

### OIL CONSERVATION DIVISION

Signature:

*DeAnn Grant*

Printed Name:

DeAnn Grant

Approved by Environmental Specialist:

Title:

HSE Administrative Assistant

Approval Date:

Expiration Date:

E-mail Address:

agrnt@concho.com

Conditions of Approval:

Attached ☐

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
<a href="#">RA 10175</a>			LE	2	1	28	17S	32E		614814	3631005*	2574	158		
<a href="#">RA 12020 POD1</a>			LE	2	2	1	28	17S	32E	614828	3630954	2600	120	81	39
<a href="#">RA 12042 POD1</a>			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**



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

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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](http://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,

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)**

BTX 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 BTX	<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		
<b>DRO &gt;C10-C28*</b>	<b>35.3</b>	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)**

BTX 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 BTX	<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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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 - SURFACE (H801489-05)**

BTX 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 BTX	<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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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 - 1' (H801489-06)**

BTX 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 BTX	<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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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 - 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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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 - 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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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 - 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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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 - SURFACE (H801489-11)**

BTX 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 BTX	<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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\*=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: T3 - 1' (H801489-12)**

BTX 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 BTX	<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	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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\*=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: 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)**

BTX 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 BTX	<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)**

BTX 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 BTX	<0.300	0.300	06/02/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 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	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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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 - 5' (H801489-16)**

BTX 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 BTX	<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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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 - 6' (H801489-17)**

BTX 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 BTX	<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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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 - 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)**

BTX 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 BTX	<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)**

BTX 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 BTX	<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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\*=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: 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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**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 - 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)**

BTX 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 BTX	<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)**

BTX 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 BTX	<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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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 - 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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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 - 2' (H801489-28)**

BTX 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 BTX	<0.300	0.300	06/04/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 114 % 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	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)**

BTX 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 BTX	<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)**

BTX 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 BTX	<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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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)**

BTX 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 BTX	<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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 Fax To: NONE

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 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)**

BTX 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 BTX	<0.300	0.300	06/04/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 107 % 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	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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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)**

BTX 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 BTX	<0.300	0.300	06/04/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 111 % 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	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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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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**Notes and Definitions**

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

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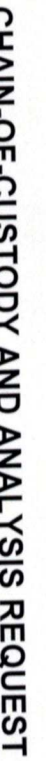
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