

# Closure Report

## Site Description

|                    |                               |
|--------------------|-------------------------------|
| Site Name:         | State 11 Com #001             |
| Company:           | COG Operating LLC             |
| Legal Description: | U/L I, Section 11, T19S, R28E |
| County:            | Eddy County, NM               |
| GPS Coordinates:   | N 32.67416° W 104.14140°      |

## Release Data

|                    |              |
|--------------------|--------------|
| Date of Release:   | 07/15/2015   |
| Type of Release:   | Oil          |
| Source of Release: | Hole in tank |
| Volume of Release: | 80 bbls      |
| Volume Recovered:  | 80 bbls      |

## Remediation Specifications

|                         |  |   |
|-------------------------|--|---|
| Remediation Parameters: | Excavate the area around S1 and B1 to a depth of 15ft. In the area of S2 and B2, excavate to a depth of 8ft. The entire site will be backfilled with clean soil. |   |
| Remediation Activities: | 09/12/2016 to 09/16/2016   |   |
| Plan Sent to OCD:       | 07/11/2016   | Email from Cliff Brunson to Mike Bratcher |
| OCD Approval of Plan:   | 09/08/2016   | Email from Mike Bratcher to Cliff Brunson |
| Plan Sent to SLO:       | 09/08/2016   | Email from Cliff Brunson to Amber Groves  |
| BLM Approval of Plan:   | 09/15/2016   | Email from Amber Groves to Cliff Brunson  |

## Supporting Documentation

|                  |  |
|------------------|--|
| Initial C-141    | Signed 07/29/2015                                  |
| Final C-141      | Signed 09/23/2016                                  |
| Site Diagram     | July 2015  |
| Groundwater Plot | 150'   |
| TOPO Maps        | June 2016  |
| Lab Summary      | 08/05/2015 and 08/19/2015                          |
| Lab Analysis     | 08/05/2015 and 08/19/2015                          |
| Correspondence   | Request and approval of remediation plan via email |

## Request for Closure

Based on the completion of the remediation plan as agreed upon, BBC International requests closure approval from NMOCD.

Cliff Brunson, President of BBC International Inc.

09/27/2016

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 August 8, 2011

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

## Release Notification and Corrective Action

### OPERATOR

☒ Initial Report ☐ Final Report

|   |                            |
|---|----------------------------|
| Name of Company: COG Operating LLC                  | Contact: Robert McNeill    |
| Address: 600 West Illinois Avenue, Midland TX 79701 | Telephone No. 432-230-0077 |
| Facility Name: STATE 11 COM #001                    | Facility Type: Battery     |

|                      |                |                      |
|----------------------|----------------|----------------------|
| Surface Owner: State | Mineral Owner: | API No. 30-015-27916 |
|----------------------|----------------|----------------------|

### LOCATION OF RELEASE

|             |         |          |       |               |                  |               |                |        |
|-------------|---------|----------|-------|---------------|------------------|---------------|----------------|--------|
| Unit Letter | Section | Township | Range | Feet from the | North/South Line | Feet from the | East/West Line | County |
| I           | 11      | 19S      | 28E   | 2310          | South            | 660           | East           | Eddy   |

Latitude 32.6744804 Longitude -104.1410294

### NATURE OF RELEASE

|  |  |   |
|--|--|---|
| Type of Release:<br>Oil  | Volume of Release:<br>80 bbls oil                  | Volume Recovered:<br>80 bbls oil                  |
| Source of Release:<br>Hole in tank   | Date and Hour of Occurrence:<br>7/15/2015 11:34 am | Date and Hour of Discovery:<br>7/15/2015 11:34 am |
| Was Immediate Notice Given?<br><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required | If YES, To Whom?<br>Mike Bratcher - NMOCD          |   |
| By Whom? Amanda Trujillo   | Date and Hour: 7/17/2015 3:57 PM                   |   |
| Was a Watercourse Reached?<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No  | If YES, Volume Impacting the Watercourse.          |   |

If a Watercourse was Impacted, Describe Fully.\*

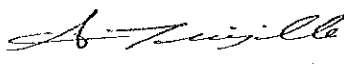
Describe Cause of Problem and Remedial Action Taken.\*

This release was caused by a hole in the tank.

Describe Area Affected and Cleanup Action Taken.\*

The release was contained within the bermed area. Concho will have the spill site sampled to delineate any possible contamination from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation work.

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

|  |                                       |                  |                                   |
|--|---------------------------------------|------------------|-----------------------------------|
| Signature:  | <u>OIL CONSERVATION DIVISION</u>      |                  |                                   |
| Printed Name: Amanda Trujillo  | Approved by Environmental Specialist: |                  |                                   |
| Title: Senior Environmental Coordinator  | Approval Date:                        | Expiration Date: |                                   |
| E-mail Address: atrujillo@concho.com   | Conditions of Approval:               |                  | Attached <input type="checkbox"/> |
| Date: 7/29/2015 Phone: 575-748-6940  |                                       |                  |                                   |

\* Attach Additional Sheets If Necessary

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
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#### OPERATOR

☐ Initial Report ☒ Final Report

|  |                            |
|--|----------------------------|
| Name of Company: COG Operating LLC                   | Contact: Robert McNeill    |
| Address: 600 West Illinois Avenue, Midland, TX 79701 | Telephone No. 432-230-0077 |
| Facility Name: State 11 Com #001                     | Facility Type: Battery     |

|                      |                |                      |
|----------------------|----------------|----------------------|
| Surface Owner: State | Mineral Owner: | API No. 30-015-27916 |
|----------------------|----------------|----------------------|

#### LOCATION OF RELEASE

| Unit Letter | Section | Township | Range | Feet from the | North/South Line | Feet from the | East/West Line | County          |
|-------------|---------|----------|-------|---------------|------------------|---------------|----------------|-----------------|
| I           | 11      | 19S      | 28E   | 2310          | South            | 660           | East           | Eddy County, NM |

Latitude N 32.67448° Longitude W 104.14102°

#### NATURE OF RELEASE

|  |  |   |
|--|--|---|
| Type of Release: Oil   | Volume of Release: 80 bbls                           | Volume Recovered: 80 bbls                           |
| Source of Release: Hole in tank  | Date and Hour of Occurrence<br>07/15/2015 @ 11:34 am | Date and Hour of Discovery<br>07/15/2015 @ 11:34 am |
| Was Immediate Notice Given?<br><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required | If YES, To Whom?<br>Mike Bratcher-NMOCD              |   |
| By Whom? Amanda Trujillo   | Date and Hour: 07/17/2015 3:57 pm                    |   |
| Was a Watercourse Reached?<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No  | If YES, Volume Impacting the Watercourse.            |   |

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\*

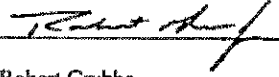
This release was caused by a hole in the tank. A vacuum truck was dispatched to recover all free-standing fluids.

Describe Area Affected and Cleanup Action Taken.\*

This release was contained within the bermed area. The site was delineated and a remediation plan was developed. The remediation plan was approved by Mike Bratcher of NMOCD via email on 09/13/2016 and approved by Amber Groves of the SLO via email on 09/15/2016. Remediation was completed in accordance with the approved plan.

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:  | Approved by Environmental Specialist: |                  |                                   |
| Printed Name: Robert Grubbs  |                                       |                  |                                   |
| Title: Senior Environmental Coordinator  | Approval Date:                        | Expiration Date: |                                   |
| E-mail Address: rgrubbs@concho.com   | Conditions of Approval:               |                  | Attached <input type="checkbox"/> |
| Date: September 23, 2016   | Phone: (432) 683-7443                 |                  |                                   |

\* Attach Additional Sheets If Necessary

## State 11 Com #1

30-015-27916  
Sec 11 T19S R28E

### Legend

- Area of Impact
- Backhoe Sampling Point
- Coring sample point

State 11 Com #1

S2 B2  
S1 B1





# Groundwater Plot

## Concho State 11 Com #1

County  
Eddy

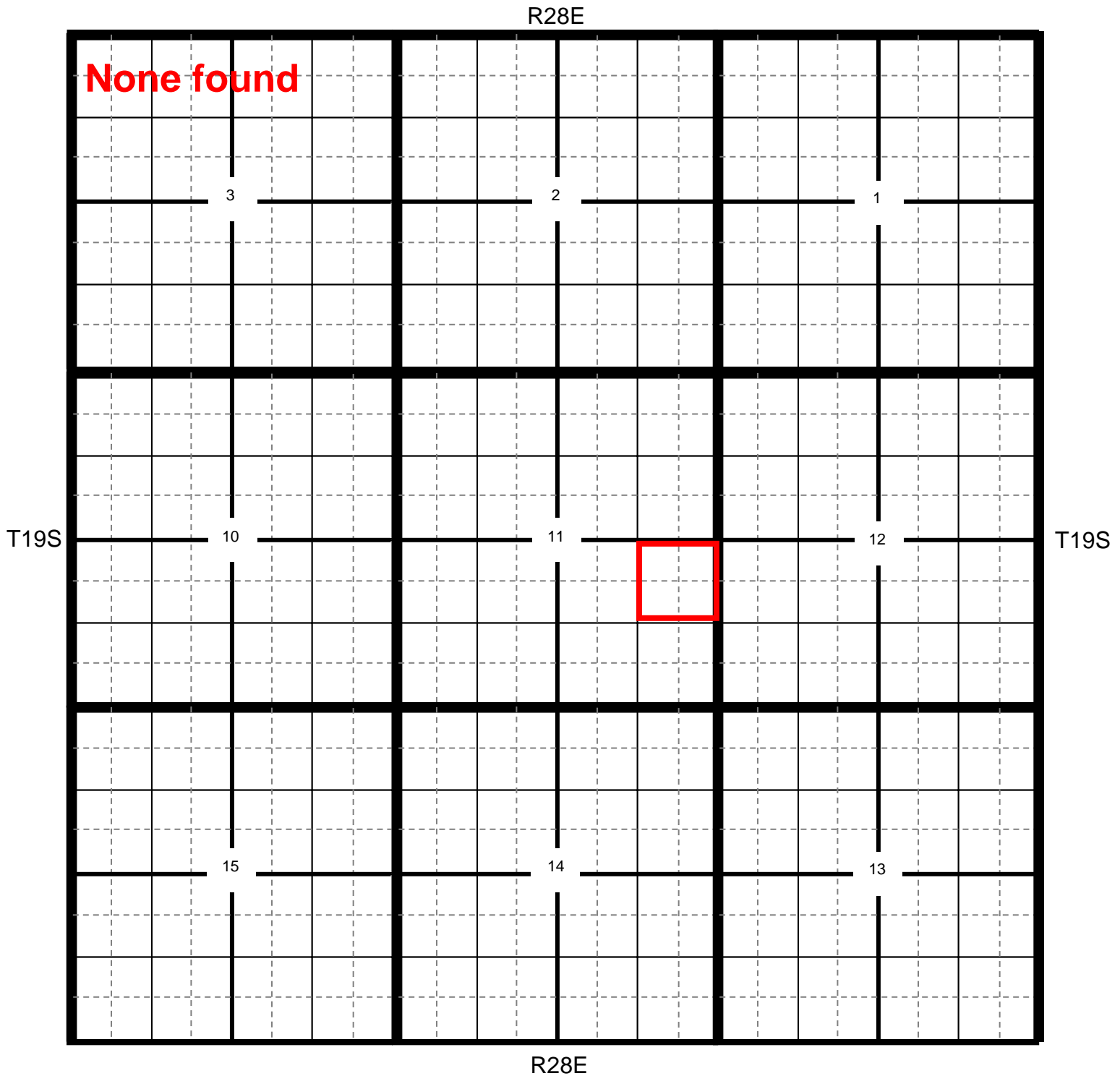
Unit Letter  
I

Section  
11

Township  
19S

Range  
28E

Trend Map 150'



★ Location

● OCD

● USGS

● SEO

● All Databases

## Concho State 11 Com #1

|               |                    |                |                 |              |
|---------------|--------------------|----------------|-----------------|--------------|
| <b>County</b> | <b>Unit Letter</b> | <b>Section</b> | <b>Township</b> | <b>Range</b> |
| Eddy          | I                  | 11             | 19S             | 28E          |

Trend Map 150'

1

2

|                            |               |               |               |
|----------------------------|---------------|---------------|---------------|
| NW/NW<br><b>None found</b> | NE/NW         | NW/NE         | NE/NE         |
| Unit Letter D              | Unit Letter C | Unit Letter B | Unit Letter A |
| SW/NW                      | SE/NW         | SW/NE         | SE/NE         |
| Unit Letter E              | Unit Letter F | Unit Letter G | Unit Letter H |
| NW/SW                      | NE/SW         | NW/SE         | NE/SE         |
| Unit Letter L              | Unit Letter K | Unit Letter J | Unit Letter I |
| SW/SW                      | SE/SW         | SW/SE         | SE/SE         |
| Unit Letter M              | Unit Letter N | Unit Letter O | Unit Letter P |

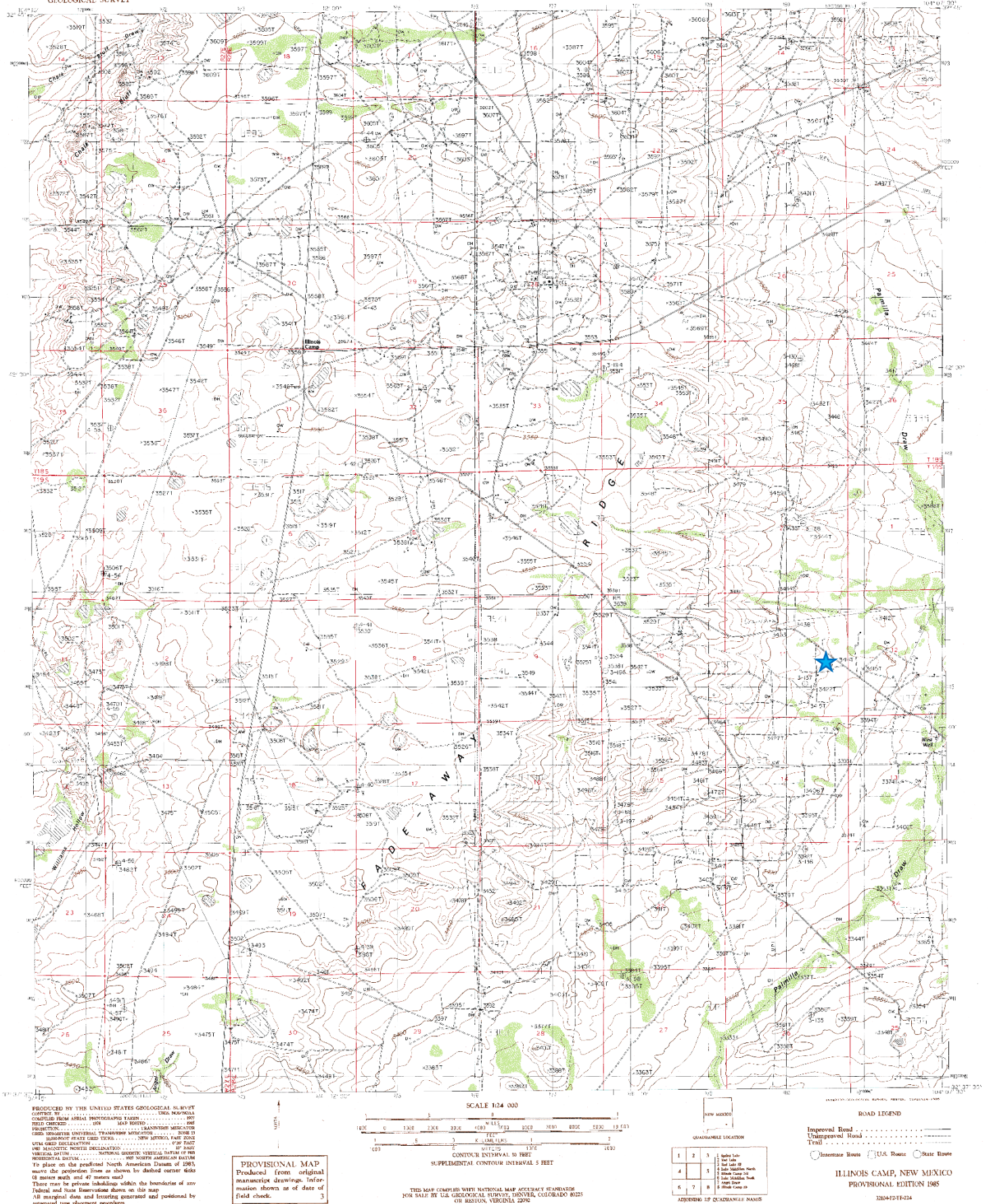
3

4

## State 11 Com #1

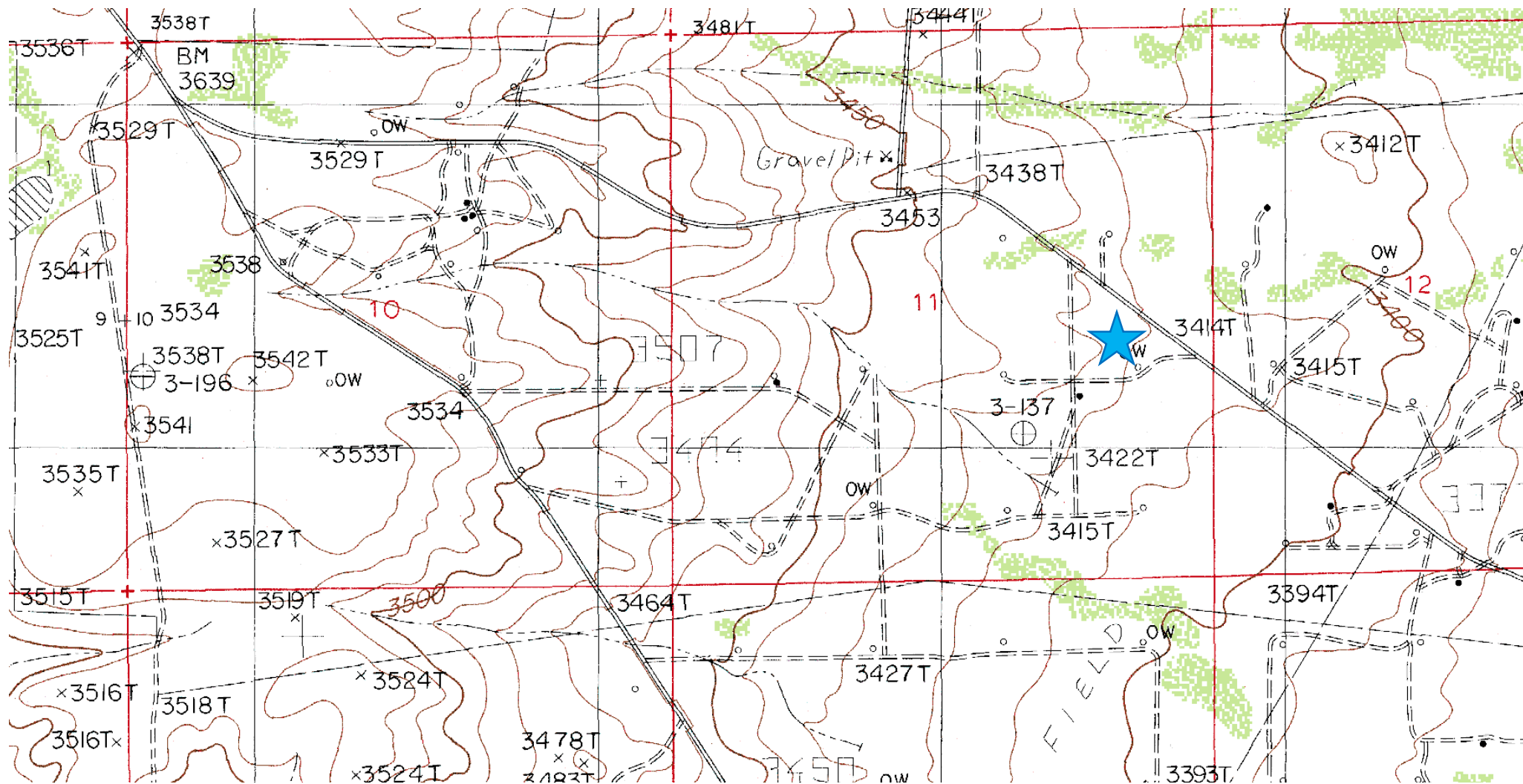
UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

ILLINOIS CAMP QUADRANGLE  
NEW MEXICO-EDDY CO.  
7.5 MINUTE SERIES (TOPOGRAPHIC)



# Concho

## State 11 Com #1



**Laboratory Analytical Results Summary  
State II Com #001**

|                      |            | Sample | SP1 @ 1' | SP1 @ 2' | S1 @ 3' | S1 @ 4' |
|----------------------|------------|--------|----------|----------|---------|---------|
| Analyte              | Method     | Date   | 1/18/16  | 1/18/16  | 1/18/16 | 1/18/16 |
|                      |            |        | mg/Kg    | mg/Kg    | mg/Kg   | mg/Kg   |
| <b>Benzene</b>       | BTEX 8021B |        | <2.00    | <2.00    | <5.00   | <5.00   |
| <b>Toluene</b>       | BTEX 8021B |        | 14       | 45.9     | 19      | 44.7    |
| <b>Ethylbenzene</b>  | BTEX 8021B |        | 29.9     | 36.6     | 31.5    | 48      |
| <b>Total Xylenes</b> | BTEX 8021B |        | 281      | 311      | 293     | 418     |
| <b>Total BTEX</b>    | BTEX 8021B |        | 324      | 393      | 344     | 511     |
| <b>Chloride</b>      | SM4500Cl-B |        | <16.0    | 32       | <16     | <16.0   |
| <b>GRO</b>           | TPH 8015M  |        | 5150     | 5510     | 6070    | 9120    |
| <b>DRO</b>           | TPH 8015M  |        | 2420     | 2150     | 2550    | 3790    |

|                      |            | Sample | SP2 @ 1' | SP2 @ 2' | S2 @ 3' | S2 @ 4' | S2 @ 5' | S2 @ 6' |
|----------------------|------------|--------|----------|----------|---------|---------|---------|---------|
| Analyte              | Method     | Date   | 1/18/16  | 1/18/16  | 1/18/16 | 1/18/16 | 1/18/16 | 1/18/16 |
|                      |            |        | mg/Kg    | mg/Kg    | mg/Kg   | mg/Kg   | mg/Kg   | mg/Kg   |
| <b>Benzene</b>       | BTEX 8021B |        | <5.00    | <5.00    | <5.00   | <5.00   | <10.0   | <5.00   |
| <b>Toluene</b>       | BTEX 8021B |        | 25.7     | 92.9     | 149     | 91      | 272     | 94.1    |
| <b>Ethylbenzene</b>  | BTEX 8021B |        | 31.5     | 65.3     | 84.8    | 53      | 110     | 53.3    |
| <b>Total Xylenes</b> | BTEX 8021B |        | 313      | 541      | 665     | 437     | 879     | 451     |
| <b>Total BTEX</b>    | BTEX 8021B |        | 371      | 699      | 899     | 582     | 1260    | 598     |
| <b>Chloride</b>      | SM4500Cl-B |        | <16.0    | 80       | 64      | <16.0   | <16.0   | 32      |
| <b>GRO</b>           | TPH 8015M  |        | 5420     | 11700    | 10700   | 8620    | 16300   | 8480    |
| <b>DRO</b>           | TPH 8015M  |        | 2250     | 3840     | 2870    | 2710    | 4010    | 2780    |



**Laboratory Analytical Results Summary**  
**State 11 Com #1**

|                      |            | Sample | B1 @ 5' | B1 @ 6' | B1 @ 7' | B1 @ 8' | B1 @ 10' | B1 @ 11' | B1 @ 12' |
|----------------------|------------|--------|---------|---------|---------|---------|----------|----------|----------|
| Analyte              | Method     | Date   | 8/19/15 | 8/19/15 | 8/19/15 | 8/19/15 | 8/19/15  | 8/19/15  | 8/19/15  |
|                      |            |        | mg/Kg   | mg/Kg   | mg/Kg   | mg/Kg   | mg/Kg    | mg/Kg    | mg/Kg    |
| <b>Benzene</b>       | BTEX 8021B |        | <2.00   | <2.00   | <2.00   | <2.50   | <2.50    | <2.00    | <2.00    |
| <b>Toluene</b>       | BTEX 8021B |        | 8.81    | 14.1    | 5.9     | 15      | 17.8     | 17.3     | 23.9     |
| <b>Ethylbenzene</b>  | BTEX 8021B |        | 15.5    | 22.3    | 17.1    | 21.3    | 19       | 16.8     | 20.1     |
| <b>Total Xylenes</b> | BTEX 8021B |        | 156     | 215     | 164     | 191     | 164      | 136      | 162      |
| <b>Total BTEX</b>    | BTEX 8021B |        | 181     | 252     | 187     | 227     | 201      | 171      | 206      |
| <b>GRO</b>           | TPH 8015M  |        | 2110    | 2560    | 2140    | 3870    | 3450     | 2870     | 3060     |
| <b>DRO</b>           | TPH 8015M  |        | 1710    | 1720    | 1810    | 2840    | 2530     | 2040     | 1980     |

**Laboratory Analytical Results Summary**  
**State 11 Com #11**

|                      |            | Sample | B1 @ 15'    | B1 @ 18'    | B1 @ 20'     | B1 @ 25'    |
|----------------------|------------|--------|-------------|-------------|--------------|-------------|
| Analyte              | Method     | Date   | 8/19/15     | 8/19/15     | 8/19/15      | 8/19/15     |
|                      |            |        | mg/Kg       | mg/Kg       | mg/Kg        | mg/Kg       |
| <b>Benzene</b>       | BTEX 8021B |        | <2.00       | <0.050      | <0.050       | <0.050      |
| <b>Toluene</b>       | BTEX 8021B |        | <b>16.8</b> | <0.050      | <0.050       | <0.050      |
| <b>Ethylbenzene</b>  | BTEX 8021B |        | <b>15.7</b> | <0.050      | <b>0.15</b>  | <b>0.09</b> |
| <b>Total Xylenes</b> | BTEX 8021B |        | <b>127</b>  | <0.150      | <b>0.24</b>  | <0.150      |
| <b>Total BTEX</b>    | BTEX 8021B |        | <b>159</b>  | <0.300      | <b>0.391</b> | <0.300      |
| <b>GRO</b>           | TPH 8015M  |        | <b>2880</b> | <b>14.9</b> | <b>38.8</b>  | <10.0       |
| <b>DRO</b>           | TPH 8015M  |        | <b>1670</b> | <b>90.2</b> | <b>82.8</b>  | <b>19</b>   |

**Laboratory Analytical Results Summary**  
**State 11 Com #11**

|                      |            | Sample | B1 @ 28'     | B1 @ 31' | B1 @ 34' | B1 @ 37' | B1 @ 40' |
|----------------------|------------|--------|--------------|----------|----------|----------|----------|
| Analyte              | Method     | Date   | 8/19/15      | 8/19/15  | 8/19/15  | 8/19/15  | 8/19/15  |
|                      |            |        | mg/Kg        | mg/Kg    | mg/Kg    | mg/Kg    | mg/Kg    |
| <b>Benzene</b>       | BTEX 8021B |        | <0.050       | <0.050   | <0.050   | <0.050   | <0.050   |
| <b>Toluene</b>       | BTEX 8021B |        | <0.050       | <0.050   | <0.050   | <0.050   | <0.050   |
| <b>Ethylbenzene</b>  | BTEX 8021B |        | <b>0.073</b> | <0.050   | <0.050   | <0.050   | <0.050   |
| <b>Total Xylenes</b> | BTEX 8021B |        | <0.150       | <0.150   | <0.150   | <0.150   | <0.150   |
| <b>Total BTEX</b>    | BTEX 8021B |        | <0.300       | <0.300   | <0.300   | <0.300   | <0.300   |
| <b>GRO</b>           | TPH 8015M  |        | <10.0        | <10.0    | <10.0    | <10.0    | <10.0    |
| <b>DRO</b>           | TPH 8015M  |        | <b>16.8</b>  | <10.0    | <10.0    | <10.0    | <10.0    |

**Laboratory Analytical Results Summary**  
**State 11 Com #1**

|                      |            | Sample | B2 @ 7'     | B2 @ 8'      | B2 @ 9'      | B2 @ 10'    | B2 @ 11' | B2 @ 12' |
|----------------------|------------|--------|-------------|--------------|--------------|-------------|----------|----------|
| Analyte              | Method     | Date   | 8/19/15     | 8/19/15      | 8/19/15      | 8/19/15     | 8/19/15  | 8/19/15  |
|                      |            |        | mg/Kg       | mg/Kg        | mg/Kg        | mg/Kg       | mg/Kg    | mg/Kg    |
| <b>Benzene</b>       | BTEX 8021B |        | <0.500      | <0.050       | <0.100       | <0.050      | <0.050   | <0.050   |
| <b>Toluene</b>       | BTEX 8021B |        | <b>9.33</b> | <0.050       | <0.100       | <0.050      | <0.050   | <0.050   |
| <b>Ethylbenzene</b>  | BTEX 8021B |        | <b>7.72</b> | <b>0.055</b> | <b>0.336</b> | <0.050      | <0.050   | <0.050   |
| <b>Total Xylenes</b> | BTEX 8021B |        | <b>95</b>   | <0.150       | <b>4.36</b>  | <0.150      | <0.150   | <0.150   |
| <b>Total BTEX</b>    | BTEX 8021B |        | <b>112</b>  | <0.300       | <b>4.7</b>   | <0.300      | <0.300   | <0.300   |
| <b>GRO</b>           | TPH 8015M  |        | <b>773</b>  | <10.0        | <b>186</b>   | <10.0       | <10.0    | <10.0    |
| <b>DRO</b>           | TPH 8015M  |        | <b>550</b>  | <b>28.6</b>  | <b>322</b>   | <b>28.2</b> | <10.0    | <10.0    |

**Laboratory Analytical Results Summary**  
**State 11 Com #1**

|                      |            | Sample | B2 @ 15' | B2 @ 18' | B2 @ 23' | B2 @ 25' |
|----------------------|------------|--------|----------|----------|----------|----------|
| Analyte              | Method     | Date   | 8/19/15  | 8/19/15  | 8/19/15  | 8/19/15  |
|                      |            |        | mg/Kg    | mg/Kg    | mg/Kg    | mg/Kg    |
| <b>Benzene</b>       | BTEX 8021B |        | <0.050   | <0.050   | <0.050   | <0.050   |
| <b>Toluene</b>       | BTEX 8021B |        | <0.050   | <0.050   | <0.050   | <0.050   |
| <b>Ethylbenzene</b>  | BTEX 8021B |        | <0.050   | <0.050   | <0.050   | <0.050   |
| <b>Total Xylenes</b> | BTEX 8021B |        | <0.150   | <0.150   | <0.150   | <0.150   |
| <b>Total BTEX</b>    | BTEX 8021B |        | <0.300   | <0.300   | <0.300   | <0.300   |
| <b>GRO</b>           | TPH 8015M  |        | <10.0    | <10.0    | <10.0    | <10.0    |
| <b>DRO</b>           | TPH 8015M  |        | <10.0    | <10.0    | <10.0    | <10.0    |



**Laboratory Analytical Results Summary**  
**State 11 Com #1**

|                      |            | Sample | B2 @ 28' | B2 @ 34' | B2 @ 37' | B2 @ 41' |
|----------------------|------------|--------|----------|----------|----------|----------|
| Analyte              | Method     | Date   | 8/19/15  | 8/19/15  | 8/19/15  | 8/19/15  |
|                      |            |        | mg/Kg    | mg/Kg    | mg/Kg    | mg/Kg    |
| <b>Benzene</b>       | BTEX 8021B |        | <0.050   | <0.050   | <0.050   | <0.050   |
| <b>Toluene</b>       | BTEX 8021B |        | <0.050   | <0.050   | <0.050   | <0.050   |
| <b>Ethylbenzene</b>  | BTEX 8021B |        | <0.050   | <0.050   | <0.050   | <0.050   |
| <b>Total Xylenes</b> | BTEX 8021B |        | <0.150   | <0.150   | <0.150   | <0.150   |
| <b>Total BTEX</b>    | BTEX 8021B |        | <0.300   | <0.300   | <0.300   | <0.300   |
| <b>GRO</b>           | TPH 8015M  |        | <10.0    | <10.0    | <10.0    | <10.0    |
| <b>DRO</b>           | TPH 8015M  |        | <10.0    | <10.0    | <10.0    | <10.0    |

August 18, 2015

AMANDA TRUJILLO  
COG Operating, LLC  
500 W. ILLINOIS  
Midland, TX 79701

RE: STATE 11 COM #1

Enclosed are the results of analyses for samples received by the laboratory on 08/12/15 14:07.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. 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, LLC  
AMANDA TRUJILLO  
500 W. ILLINOIS  
Midland TX, 79701  
Fax To: None

Received: 08/12/2015  
Reported: 08/18/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/05/2015  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Judy Garcia

**Sample ID: S1 1' (H502105-01)**

| BTEx 8021B     |        | mg/kg           |            | Analyzed By: MS |      |            |               |      |           |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |
| Benzene*       | <2.00  | 2.00            | 08/15/2015 | ND              | 2.23 | 112        | 2.00          | 1.51 |           |
| Toluene*       | 14.0   | 2.00            | 08/15/2015 | ND              | 2.12 | 106        | 2.00          | 2.75 |           |
| Ethylbenzene*  | 29.9   | 2.00            | 08/15/2015 | ND              | 2.33 | 116        | 2.00          | 2.48 |           |
| Total Xylenes* | 281    | 6.00            | 08/15/2015 | ND              | 6.49 | 108        | 6.00          | 2.28 |           |
| Total BTEx     | 324    | 12.0            | 08/15/2015 | ND              |      |            |               |      |           |

Surrogate: 4-Bromofluorobenzene (PIL) 97.3 % 85.6-137

| Chloride, SM4500Cl-B |        | mg/kg           |            | Analyzed By: AP |     |            |               |      |           |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte              | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| Chloride             | <16.0  | 16.0            | 08/17/2015 | ND              | 416 | 104        | 400           | 0.00 |           |

| TPH 8015M    |        | mg/kg           |            | Analyzed By: MS |     |            |               |       |           | S-04 |
|--------------|--------|-----------------|------------|-----------------|-----|------------|---------------|-------|-----------|------|
| Analyte      | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD   | Qualifier |      |
| GRO C6-C10   | 5150   | 10.0            | 08/14/2015 | ND              | 182 | 91.0       | 200           | 0.523 |           |      |
| DRO >C10-C28 | 2420   | 10.0            | 08/14/2015 | ND              | 191 | 95.7       | 200           | 0.645 |           |      |

Surrogate: 1-Chlorooctane 181 % 47.2-157

Surrogate: 1-Chlorooctadecane 96.3 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG Operating, LLC  
AMANDA TRUJILLO  
500 W. ILLINOIS  
Midland TX, 79701  
Fax To: None

Received: 08/12/2015  
Reported: 08/18/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/05/2015  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Judy Garcia

**Sample ID: S1 2' (H502105-02)**

| BTEX 8021B     |        | mg/kg           |            | Analyzed By: MS |      |            |               |      |           |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |
| Benzene*       | <2.00  | 2.00            | 08/15/2015 | ND              | 2.23 | 112        | 2.00          | 1.51 |           |
| Toluene*       | 45.9   | 2.00            | 08/15/2015 | ND              | 2.12 | 106        | 2.00          | 2.75 |           |
| Ethylbenzene*  | 36.6   | 2.00            | 08/15/2015 | ND              | 2.33 | 116        | 2.00          | 2.48 |           |
| Total Xylenes* | 311    | 6.00            | 08/15/2015 | ND              | 6.49 | 108        | 6.00          | 2.28 |           |
| Total BTEX     | 393    | 12.0            | 08/15/2015 | ND              |      |            |               |      |           |

Surrogate: 4-Bromofluorobenzene (PII) 95.4 % 85.6-137

| Chloride, SM4500Cl-B |        | mg/kg           |            | Analyzed By: AP |     |            |               |      |           |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte              | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| Chloride             | 32.0   | 16.0            | 08/17/2015 | ND              | 416 | 104        | 400           | 0.00 |           |

| TPH 8015M    |        | mg/kg           |            | Analyzed By: MS |     |            |               |       |           | S-04 |
|--------------|--------|-----------------|------------|-----------------|-----|------------|---------------|-------|-----------|------|
| Analyte      | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD   | Qualifier |      |
| GRO C6-C10   | 5510   | 10.0            | 08/14/2015 | ND              | 182 | 91.0       | 200           | 0.523 |           |      |
| DRO >C10-C28 | 2150   | 10.0            | 08/14/2015 | ND              | 191 | 95.7       | 200           | 0.645 |           |      |

Surrogate: 1-Chlorooctane 172 % 47.2-157

Surrogate: 1-Chlorooctadecane 94.0 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 COG Operating, LLC  
 AMANDA TRUJILLO  
 500 W. ILLINOIS  
 Midland TX, 79701  
 Fax To: None

 Received: 08/12/2015  
 Reported: 08/18/2015  
 Project Name: STATE 11 COM #1  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 08/05/2015  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Judy Garcia

**Sample ID: S1 3' (H502105-03)**

| BTEX 8021B            |             | mg/kg           |            | Analyzed By: MS |      |            |               |      |           |
|-----------------------|-------------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|
| Analyte               | Result      | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |
| Benzene*              | <5.00       | 5.00            | 08/15/2015 | ND              | 2.23 | 112        | 2.00          | 1.51 |           |
| <b>Toluene*</b>       | <b>19.0</b> | 5.00            | 08/15/2015 | ND              | 2.12 | 106        | 2.00          | 2.75 |           |
| <b>Ethylbenzene*</b>  | <b>31.5</b> | 5.00            | 08/15/2015 | ND              | 2.33 | 116        | 2.00          | 2.48 |           |
| <b>Total Xylenes*</b> | <b>293</b>  | 15.0            | 08/15/2015 | ND              | 6.49 | 108        | 6.00          | 2.28 |           |
| <b>Total BTEX</b>     | <b>344</b>  | 30.0            | 08/15/2015 | ND              |      |            |               |      |           |

Surrogate: 4-Bromofluorobenzene (PIE) 106 % 85.6-137

| Chloride, SM4500Cl-B |        | mg/kg           |            | Analyzed By: AP |     |            |               |      |           |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte              | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| Chloride             | <16.0  | 16.0            | 08/17/2015 | ND              | 416 | 104        | 400           | 0.00 |           |

| TPH 8015M              |             | mg/kg           |            | Analyzed By: MS |     |            |               |       |           | S-04 |
|------------------------|-------------|-----------------|------------|-----------------|-----|------------|---------------|-------|-----------|------|
| Analyte                | Result      | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD   | Qualifier |      |
| <b>GRO C6-C10</b>      | <b>6070</b> | 10.0            | 08/14/2015 | ND              | 182 | 91.0       | 200           | 0.523 |           |      |
| <b>DRO &gt;C10-C28</b> | <b>2550</b> | 10.0            | 08/14/2015 | ND              | 191 | 95.7       | 200           | 0.645 |           |      |

Surrogate: 1-Chlorooctane 184 % 47.2-157

Surrogate: 1-Chlorooctadecane 94.6 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

COG Operating, LLC  
AMANDA TRUJILLO  
500 W. ILLINOIS  
Midland TX, 79701  
Fax To: None

Received: 08/12/2015  
Reported: 08/18/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/05/2015  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Judy Garcia

**Sample ID: S1 4' (H502105-04)**

| BTX 8021B             |             | mg/kg           |            | Analyzed By: MS |      |            |               |      |           |
|-----------------------|-------------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|
| Analyte               | Result      | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |
| Benzene*              | <5.00       | 5.00            | 08/15/2015 | ND              | 2.23 | 112        | 2.00          | 1.51 |           |
| <b>Toluene*</b>       | <b>44.7</b> | 5.00            | 08/15/2015 | ND              | 2.12 | 106        | 2.00          | 2.75 |           |
| <b>Ethylbenzene*</b>  | <b>48.0</b> | 5.00            | 08/15/2015 | ND              | 2.33 | 116        | 2.00          | 2.48 |           |
| <b>Total Xylenes*</b> | <b>418</b>  | 15.0            | 08/15/2015 | ND              | 6.49 | 108        | 6.00          | 2.28 |           |
| <b>Total BTX</b>      | <b>511</b>  | 30.0            | 08/15/2015 | ND              |      |            |               |      |           |

Surrogate: 4-Bromofluorobenzene (PIL) 93.6 % 85.6-137

| Chloride, SM4500Cl-B |        | mg/kg           |            | Analyzed By: AP |     |            |               |      |           |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte              | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| Chloride             | <16.0  | 16.0            | 08/17/2015 | ND              | 416 | 104        | 400           | 0.00 |           |

| TPH 8015M              |             | mg/kg           |            | Analyzed By: MS |     |            |               |       |           | S-04 |
|------------------------|-------------|-----------------|------------|-----------------|-----|------------|---------------|-------|-----------|------|
| Analyte                | Result      | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD   | Qualifier |      |
| <b>GRO C6-C10</b>      | <b>9120</b> | 10.0            | 08/14/2015 | ND              | 182 | 91.0       | 200           | 0.523 |           |      |
| <b>DRO &gt;C10-C28</b> | <b>3790</b> | 10.0            | 08/14/2015 | ND              | 191 | 95.7       | 200           | 0.645 |           |      |

Surrogate: 1-Chlorooctane 228 % 47.2-157

Surrogate: 1-Chlorooctadecane 93.3 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG Operating, LLC  
AMANDA TRUJILLO  
500 W. ILLINOIS  
Midland TX, 79701  
Fax To: None

Received: 08/12/2015  
Reported: 08/18/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/05/2015  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Judy Garcia

**Sample ID: S2 1' (H502105-05)**

| BTEX 8021B            |             | mg/kg           |            | Analyzed By: MS |      |            |               |      |           |
|-----------------------|-------------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|
| Analyte               | Result      | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |
| Benzene*              | <5.00       | 5.00            | 08/15/2015 | ND              | 2.23 | 112        | 2.00          | 1.51 |           |
| <b>Toluene*</b>       | <b>25.7</b> | 5.00            | 08/15/2015 | ND              | 2.12 | 106        | 2.00          | 2.75 |           |
| <b>Ethylbenzene*</b>  | <b>31.5</b> | 5.00            | 08/15/2015 | ND              | 2.33 | 116        | 2.00          | 2.48 |           |
| <b>Total Xylenes*</b> | <b>313</b>  | 15.0            | 08/15/2015 | ND              | 6.49 | 108        | 6.00          | 2.28 |           |
| <b>Total BTEX</b>     | <b>371</b>  | 30.0            | 08/15/2015 | ND              |      |            |               |      |           |

Surrogate: 4-Bromofluorobenzene (PIC) 108 % 85.6-137

| Chloride, SM4500CI-B |        | mg/kg           |            | Analyzed By: AP |     |            |               |      |           |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte              | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| Chloride             | <16.0  | 16.0            | 08/17/2015 | ND              | 416 | 104        | 400           | 0.00 |           |

| TPH 8015M              |             | mg/kg           |            | Analyzed By: MS |     |            |               |       |           | S-04 |
|------------------------|-------------|-----------------|------------|-----------------|-----|------------|---------------|-------|-----------|------|
| Analyte                | Result      | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD   | Qualifier |      |
| <b>GRO C6-C10</b>      | <b>5420</b> | 10.0            | 08/14/2015 | ND              | 182 | 91.0       | 200           | 0.523 |           |      |
| <b>DRO &gt;C10-C28</b> | <b>2250</b> | 10.0            | 08/14/2015 | ND              | 191 | 95.7       | 200           | 0.645 |           |      |

Surrogate: 1-Chlorooctane 175 % 47.2-157

Surrogate: 1-Chlorooctadecane 99.2 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG Operating, LLC  
AMANDA TRUJILLO  
500 W. ILLINOIS  
Midland TX, 79701  
Fax To: None

Received: 08/12/2015  
Reported: 08/18/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/05/2015  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Judy Garcia

**Sample ID: S2 2' (H502105-06)**

| BTEX 8021B            |             | mg/kg           |            | Analyzed By: MS |      |            |               |      |           |
|-----------------------|-------------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|
| Analyte               | Result      | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |
| Benzene*              | <5.00       | 5.00            | 08/15/2015 | ND              | 2.23 | 112        | 2.00          | 1.51 |           |
| <b>Toluene*</b>       | <b>92.9</b> | 5.00            | 08/15/2015 | ND              | 2.12 | 106        | 2.00          | 2.75 |           |
| <b>Ethylbenzene*</b>  | <b>65.3</b> | 5.00            | 08/15/2015 | ND              | 2.33 | 116        | 2.00          | 2.48 |           |
| <b>Total Xylenes*</b> | <b>541</b>  | 15.0            | 08/15/2015 | ND              | 6.49 | 108        | 6.00          | 2.28 |           |
| <b>Total BTEX</b>     | <b>699</b>  | 30.0            | 08/15/2015 | ND              |      |            |               |      |           |

Surrogate: 4-Bromofluorobenzene (PIB) 93.5 % 85.6-137

| Chloride, SM4500Cl-B |             | mg/kg           |            | Analyzed By: AP |     |            |               |      |           |
|----------------------|-------------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte              | Result      | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| <b>Chloride</b>      | <b>80.0</b> | 16.0            | 08/17/2015 | ND              | 416 | 104        | 400           | 0.00 |           |

| TPH 8015M              |              | mg/kg           |            | Analyzed By: MS |     |            |               |       |           | S-06 |
|------------------------|--------------|-----------------|------------|-----------------|-----|------------|---------------|-------|-----------|------|
| Analyte                | Result       | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD   | Qualifier |      |
| <b>GRO C6-C10</b>      | <b>11700</b> | 100             | 08/14/2015 | ND              | 182 | 91.0       | 200           | 0.523 |           |      |
| <b>DRO &gt;C10-C28</b> | <b>3840</b>  | 100             | 08/14/2015 | ND              | 191 | 95.7       | 200           | 0.645 |           |      |

Surrogate: 1-Chlorooctane 260 % 47.2-157

Surrogate: 1-Chlorooctadecane 98.3 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG Operating, LLC  
AMANDA TRUJILLO  
500 W. ILLINOIS  
Midland TX, 79701  
Fax To: None

Received: 08/12/2015  
Reported: 08/18/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/05/2015  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Judy Garcia

**Sample ID: S2 3' (H502105-07)**

| BTEX 8021B     |        | mg/kg           |            | Analyzed By: MS |      |            |               |      |           |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |
| Benzene*       | <5.00  | 5.00            | 08/15/2015 | ND              | 2.23 | 112        | 2.00          | 1.51 |           |
| Toluene*       | 149    | 5.00            | 08/15/2015 | ND              | 2.12 | 106        | 2.00          | 2.75 |           |
| Ethylbenzene*  | 84.8   | 5.00            | 08/15/2015 | ND              | 2.33 | 116        | 2.00          | 2.48 |           |
| Total Xylenes* | 665    | 15.0            | 08/15/2015 | ND              | 6.49 | 108        | 6.00          | 2.28 |           |
| Total BTEX     | 899    | 30.0            | 08/15/2015 | ND              |      |            |               |      |           |

Surrogate: 4-Bromofluorobenzene (PIL) 93.5 % 85.6-137

| Chloride, SM4500Cl-B |        | mg/kg           |            | Analyzed By: AP |     |            |               |      |           |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte              | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| Chloride             | 64.0   | 16.0            | 08/17/2015 | ND              | 416 | 104        | 400           | 0.00 |           |

| TPH 8015M    |        | mg/kg           |            | Analyzed By: MS |     |            |               |       |           | S-06 |
|--------------|--------|-----------------|------------|-----------------|-----|------------|---------------|-------|-----------|------|
| Analyte      | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD   | Qualifier |      |
| GRO C6-C10   | 10700  | 100             | 08/14/2015 | ND              | 182 | 91.0       | 200           | 0.523 |           |      |
| DRO >C10-C28 | 2870   | 100             | 08/14/2015 | ND              | 191 | 95.7       | 200           | 0.645 |           |      |

Surrogate: 1-Chlorooctane 219 % 47.2-157

Surrogate: 1-Chlorooctadecane 88.3 % 52.1-176

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\*=Accredited Analyte

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Caley D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

COG Operating, LLC  
AMANDA TRUJILLO  
500 W. ILLINOIS  
Midland TX, 79701  
Fax To: None

Received: 08/12/2015  
Reported: 08/18/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/05/2015  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Judy Garcia

**Sample ID: S2 4' (H502105-08)**

| BTEX 8021B            |             | mg/kg           |            | Analyzed By: MS |      |            |               |      |           |
|-----------------------|-------------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|
| Analyte               | Result      | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |
| Benzene*              | <5.00       | 5.00            | 08/15/2015 | ND              | 2.23 | 112        | 2.00          | 1.51 |           |
| <b>Toluene*</b>       | <b>91.0</b> | 5.00            | 08/15/2015 | ND              | 2.12 | 106        | 2.00          | 2.75 |           |
| <b>Ethylbenzene*</b>  | <b>53.0</b> | 5.00            | 08/15/2015 | ND              | 2.33 | 116        | 2.00          | 2.48 |           |
| <b>Total Xylenes*</b> | <b>437</b>  | 15.0            | 08/15/2015 | ND              | 6.49 | 108        | 6.00          | 2.28 |           |
| <b>Total BTEX</b>     | <b>582</b>  | 30.0            | 08/15/2015 | ND              |      |            |               |      |           |

Surrogate: 4-Bromofluorobenzene (PIL) 109 % 85.6-137

| Chloride, SM4500Cl-B |        | mg/kg           |            | Analyzed By: AP |     |            |               |      |           |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte              | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| Chloride             | <16.0  | 16.0            | 08/17/2015 | ND              | 416 | 104        | 400           | 0.00 |           |

| TPH 8015M              |             | mg/kg           |            | Analyzed By: MS |     |            |               |       |           | S-04 |
|------------------------|-------------|-----------------|------------|-----------------|-----|------------|---------------|-------|-----------|------|
| Analyte                | Result      | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD   | Qualifier |      |
| <b>GRO C6-C10</b>      | <b>8620</b> | 10.0            | 08/14/2015 | ND              | 182 | 91.0       | 200           | 0.523 |           |      |
| <b>DRO &gt;C10-C28</b> | <b>2710</b> | 10.0            | 08/14/2015 | ND              | 191 | 95.7       | 200           | 0.645 |           |      |

Surrogate: 1-Chlorooctane 193 % 47.2-157

Surrogate: 1-Chlorooctadecane 92.0 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

COG Operating, LLC  
AMANDA TRUJILLO  
500 W. ILLINOIS  
Midland TX, 79701  
Fax To: None

Received: 08/12/2015  
Reported: 08/18/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/05/2015  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Judy Garcia

**Sample ID: S2 5' (H502105-09)**

| BTEX 8021B            |             | mg/kg           |            | Analyzed By: MS |      |            |               |      |           |
|-----------------------|-------------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|
| Analyte               | Result      | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |
| Benzene*              | <10.0       | 10.0            | 08/15/2015 | ND              | 2.23 | 112        | 2.00          | 1.51 |           |
| <b>Toluene*</b>       | <b>272</b>  | 10.0            | 08/15/2015 | ND              | 2.12 | 106        | 2.00          | 2.75 |           |
| <b>Ethylbenzene*</b>  | <b>110</b>  | 10.0            | 08/15/2015 | ND              | 2.33 | 116        | 2.00          | 2.48 |           |
| <b>Total Xylenes*</b> | <b>879</b>  | 30.0            | 08/15/2015 | ND              | 6.49 | 108        | 6.00          | 2.28 |           |
| <b>Total BTEX</b>     | <b>1260</b> | 60.0            | 08/15/2015 | ND              |      |            |               |      |           |

Surrogate: 4-Bromofluorobenzene (PIL) 103 % 85.6-137

| Chloride, SM4500Cl-B |        | mg/kg           |            | Analyzed By: AP |     |            |               |      |           |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte              | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| Chloride             | <16.0  | 16.0            | 08/17/2015 | ND              | 416 | 104        | 400           | 0.00 |           |

| TPH 8015M              |              | mg/kg           |            | Analyzed By: MS |     |            |               |       |           | S-06 |
|------------------------|--------------|-----------------|------------|-----------------|-----|------------|---------------|-------|-----------|------|
| Analyte                | Result       | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD   | Qualifier |      |
| <b>GRO C6-C10</b>      | <b>16300</b> | 100             | 08/14/2015 | ND              | 182 | 91.0       | 200           | 0.523 |           |      |
| <b>DRO &gt;C10-C28</b> | <b>4010</b>  | 100             | 08/14/2015 | ND              | 191 | 95.7       | 200           | 0.645 |           |      |

Surrogate: 1-Chlorooctane 275 % 47.2-157

Surrogate: 1-Chlorooctadecane 96.3 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 COG Operating, LLC  
 AMANDA TRUJILLO  
 500 W. ILLINOIS  
 Midland TX, 79701  
 Fax To: None

 Received: 08/12/2015  
 Reported: 08/18/2015  
 Project Name: STATE 11 COM #1  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 08/05/2015  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Judy Garcia

**Sample ID: S2 6' (H502105-10)**

| BTEX 8021B            |             | mg/kg           |            | Analyzed By: MS |      |            |               |      |           |
|-----------------------|-------------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|
| Analyte               | Result      | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |
| Benzene*              | <5.00       | 5.00            | 08/15/2015 | ND              | 2.23 | 112        | 2.00          | 1.51 |           |
| <b>Toluene*</b>       | <b>94.1</b> | 5.00            | 08/15/2015 | ND              | 2.12 | 106        | 2.00          | 2.75 |           |
| <b>Ethylbenzene*</b>  | <b>53.3</b> | 5.00            | 08/15/2015 | ND              | 2.33 | 116        | 2.00          | 2.48 |           |
| <b>Total Xylenes*</b> | <b>451</b>  | 15.0            | 08/15/2015 | ND              | 6.49 | 108        | 6.00          | 2.28 |           |
| <b>Total BTEX</b>     | <b>598</b>  | 30.0            | 08/15/2015 | ND              |      |            |               |      |           |

Surrogate: 4-Bromofluorobenzene (PIL) 92.2 % 85.6-137

| Chloride, SM4500Cl-B |             | mg/kg           |            | Analyzed By: AP |     |            |               |      |           |
|----------------------|-------------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte              | Result      | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| <b>Chloride</b>      | <b>32.0</b> | 16.0            | 08/17/2015 | ND              | 416 | 104        | 400           | 0.00 |           |

| TPH 8015M              |             | mg/kg           |            | Analyzed By: MS |     |            |               |       |           | S-04 |
|------------------------|-------------|-----------------|------------|-----------------|-----|------------|---------------|-------|-----------|------|
| Analyte                | Result      | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD   | Qualifier |      |
| <b>GRO C6-C10</b>      | <b>8480</b> | 10.0            | 08/14/2015 | ND              | 182 | 91.0       | 200           | 0.523 |           |      |
| <b>DRO &gt;C10-C28</b> | <b>2780</b> | 10.0            | 08/14/2015 | ND              | 191 | 95.7       | 200           | 0.645 |           |      |

Surrogate: 1-Chlorooctane 203 % 47.2-157

Surrogate: 1-Chlorooctadecane 105 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager

### Notes and Definitions

- S-06 The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
- S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- \*\* Samples not received at proper temperature of 6°C or below.
- \*\*\* Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C  
Samples reported on an as received basis (wet) unless otherwise noted on report



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Celey D. Keene, Lab Director/Quality Manager



## BILL TO

ANALYSIS REQUEST

| Lab I.D. | Sample I.D. | (G)RAB OR (C)OMP | MATRIX       |             |            |      |     |        | PRESERV. |           |            | SAMPLING |         |      |      |     |          |  |  |  |  |  |  |  |
|----------|-------------|------------------|--------------|-------------|------------|------|-----|--------|----------|-----------|------------|----------|---------|------|------|-----|----------|--|--|--|--|--|--|--|
|          |             |                  | # CONTAINERS | GROUNDWATER | WASTEWATER | SOIL | OIL | SLUDGE | OTHER    | ACID/BASE | ICE / COOL | OTHER    | DATE    | TIME | BTEX | TPH | Chloride |  |  |  |  |  |  |  |
| S1 1'    |             | 1                | x            |             |            |      |     |        | x        |           |            | 8/5/15   | 9:00 PM | x    | x    | x   |          |  |  |  |  |  |  |  |
| S1 2'    |             | 1                | x            |             |            |      |     |        | x        |           |            | 8/5/15   | 9:00 PM | x    | x    | x   |          |  |  |  |  |  |  |  |
| S1 3'    |             | 1                | x            |             |            |      |     |        | x        |           |            | 8/5/15   | 9:00 PM | x    | x    | x   |          |  |  |  |  |  |  |  |
| S1 4'    |             | 1                | x            |             |            |      |     |        | x        |           |            | 8/5/15   | 9:00 PM | x    | x    | x   |          |  |  |  |  |  |  |  |
| S2 1'    |             | 1                | x            |             |            |      |     |        | x        |           |            | 8/5/15   | 9:00 PM | x    | x    | x   |          |  |  |  |  |  |  |  |
| S2 2'    |             | 1                | x            |             |            |      |     |        | x        |           |            | 8/5/15   | 9:00 PM | x    | x    | x   |          |  |  |  |  |  |  |  |
| S2 3'    |             | 1                | x            |             |            |      |     |        | x        |           |            | 8/5/15   | 9:00 PM | x    | x    | x   |          |  |  |  |  |  |  |  |
| S2 4'    |             | 1                | x            |             |            |      |     |        | x        |           |            | 8/5/15   | 9:00 PM | x    | x    | x   |          |  |  |  |  |  |  |  |
| S2 5'    |             | 1                | x            |             |            |      |     |        | x        |           |            | 8/5/15   | 9:00 PM | x    | x    | x   |          |  |  |  |  |  |  |  |
| S2 6'    |             | 1                | x            |             |            |      |     |        | x        |           |            | 8/5/15   | 9:00 PM | x    | x    | x   |          |  |  |  |  |  |  |  |

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Relinquished By:

Date: 2/11/15 Received By: \_\_\_\_\_

Relinquished By:

Date: 8/15 Received By:

Delivered By: (Circle One)

Sampler - UPS - Bus - Other:

FORM-000 N.Z.0

† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476

#54

August 27, 2015

LUPE CARRASCO

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: STATE 11 COM #1

Enclosed are the results of analyses for samples received by the laboratory on 08/21/15 11:07.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. 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  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia

**Sample ID: B1 5' (H502225-01)**

| BTEX 8021B            |             |                 | mg/kg      |              | Analyzed By: CK |            |               |       |           |
|-----------------------|-------------|-----------------|------------|--------------|-----------------|------------|---------------|-------|-----------|
| Analyte               | Result      | Reporting Limit | Analyzed   | Method Blank | BS              | % Recovery | True Value QC | RPD   | Qualifier |
| Benzene*              | <2.00       | 2.00            | 08/26/2015 | ND           | 2.00            | 100        | 2.00          | 0.409 |           |
| <b>Toluene*</b>       | <b>8.81</b> | 2.00            | 08/26/2015 | ND           | 1.87            | 93.6       | 2.00          | 0.205 |           |
| <b>Ethylbenzene*</b>  | <b>15.5</b> | 2.00            | 08/26/2015 | ND           | 1.97            | 98.5       | 2.00          | 1.30  |           |
| <b>Total Xylenes*</b> | <b>156</b>  | 6.00            | 08/26/2015 | ND           | 5.76            | 96.1       | 6.00          | 0.693 |           |
| <b>Total BTEX</b>     | <b>181</b>  | 12.0            | 08/26/2015 | ND           |                 |            |               |       |           |

Surrogate: 4-Bromofluorobenzene (PID) 87.9 % 85.6-137

| TPH 8015M              |             |                 | mg/kg      |              | Analyzed By: CK |            |               |      |           |
|------------------------|-------------|-----------------|------------|--------------|-----------------|------------|---------------|------|-----------|
| Analyte                | Result      | Reporting Limit | Analyzed   | Method Blank | BS              | % Recovery | True Value QC | RPD  | Qualifier |
| <b>GRO C6-C10</b>      | <b>2110</b> | 10.0            | 08/25/2015 | ND           | 193             | 96.5       | 200           | 1.10 |           |
| <b>DRO &gt;C10-C28</b> | <b>1710</b> | 10.0            | 08/25/2015 | ND           | 198             | 99.2       | 200           | 1.84 |           |

Surrogate: 1-Chlorooctane 145 % 47.2-157

Surrogate: 1-Chlorooctadecane 79.8 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia

**Sample ID: B1 6' (H502225-02)**

| BTEX 8021B            |             |                 | mg/kg      |              | Analyzed By: CK |            |               |       |           |
|-----------------------|-------------|-----------------|------------|--------------|-----------------|------------|---------------|-------|-----------|
| Analyte               | Result      | Reporting Limit | Analyzed   | Method Blank | BS              | % Recovery | True Value QC | RPD   | Qualifier |
| Benzene*              | <2.00       | 2.00            | 08/26/2015 | ND           | 2.00            | 100        | 2.00          | 0.409 |           |
| <b>Toluene*</b>       | <b>14.1</b> | 2.00            | 08/26/2015 | ND           | 1.87            | 93.6       | 2.00          | 0.205 |           |
| <b>Ethylbenzene*</b>  | <b>22.3</b> | 2.00            | 08/26/2015 | ND           | 1.97            | 98.5       | 2.00          | 1.30  |           |
| <b>Total Xylenes*</b> | <b>215</b>  | 6.00            | 08/26/2015 | ND           | 5.76            | 96.1       | 6.00          | 0.693 |           |
| <b>Total BTEX</b>     | <b>252</b>  | 12.0            | 08/26/2015 | ND           |                 |            |               |       |           |

Surrogate: 4-Bromofluorobenzene (PID) 90.7 % 85.6-137

| TPH 8015M              |             |                 | mg/kg      |              | Analyzed By: CK |            |               |      |           |
|------------------------|-------------|-----------------|------------|--------------|-----------------|------------|---------------|------|-----------|
| Analyte                | Result      | Reporting Limit | Analyzed   | Method Blank | BS              | % Recovery | True Value QC | RPD  | Qualifier |
| <b>GRO C6-C10</b>      | <b>2560</b> | 10.0            | 08/25/2015 | ND           | 193             | 96.5       | 200           | 1.10 |           |
| <b>DRO &gt;C10-C28</b> | <b>1720</b> | 10.0            | 08/25/2015 | ND           | 198             | 99.2       | 200           | 1.84 |           |

Surrogate: 1-Chlorooctane 149 % 47.2-157

Surrogate: 1-Chlorooctadecane 88.6 % 52.1-176

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 COG OPERATING  
 LUPE CARRASCO  
 P. O. BOX 1630  
 ARTESIA NM, 88210  
 Fax To: NONE

 Received: 08/21/2015  
 Reported: 08/27/2015  
 Project Name: STATE 11 COM #1  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 08/19/2015  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Judy Garcia

**Sample ID: B1 7' (H502225-03)**

| BTEx 8021B     |        | mg/kg           |            | Analyzed By: CK |      |            |               |       |           |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|-------|-----------|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD   | Qualifier |
| Benzene*       | <2.00  | 2.00            | 08/26/2015 | ND              | 2.00 | 100        | 2.00          | 0.409 |           |
| Toluene*       | 5.90   | 2.00            | 08/26/2015 | ND              | 1.87 | 93.6       | 2.00          | 0.205 |           |
| Ethylbenzene*  | 17.1   | 2.00            | 08/26/2015 | ND              | 1.97 | 98.5       | 2.00          | 1.30  |           |
| Total Xylenes* | 164    | 6.00            | 08/26/2015 | ND              | 5.76 | 96.1       | 6.00          | 0.693 |           |
| Total BTEX     | 187    | 12.0            | 08/26/2015 | ND              |      |            |               |       |           |

Surrogate: 4-Bromofluorobenzene (PID) 88.0 % 85.6-137

| TPH 8015M    |        | mg/kg           |            | Analyzed By: CK |     |            |               |      |           |
|--------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte      | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| GRO C6-C10   | 2140   | 10.0            | 08/25/2015 | ND              | 193 | 96.5       | 200           | 1.10 |           |
| DRO >C10-C28 | 1810   | 10.0            | 08/25/2015 | ND              | 198 | 99.2       | 200           | 1.84 |           |

Surrogate: 1-Chlorooctane 146 % 47.2-157

Surrogate: 1-Chlorooctadecane 78.7 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

COG OPERATING  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia

**Sample ID: B1 8' (H502225-04)**

| BTEx 8021B            |             | mg/kg           |            | Analyzed By: CK |      |            |               |       |           |  |
|-----------------------|-------------|-----------------|------------|-----------------|------|------------|---------------|-------|-----------|--|
| Analyte               | Result      | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD   | Qualifier |  |
| Benzene*              | <2.50       | 2.50            | 08/26/2015 | ND              | 2.00 | 100        | 2.00          | 0.409 |           |  |
| <b>Toluene*</b>       | <b>15.0</b> | 2.50            | 08/26/2015 | ND              | 1.87 | 93.6       | 2.00          | 0.205 |           |  |
| <b>Ethylbenzene*</b>  | <b>21.3</b> | 2.50            | 08/26/2015 | ND              | 1.97 | 98.5       | 2.00          | 1.30  |           |  |
| <b>Total Xylenes*</b> | <b>191</b>  | 7.50            | 08/26/2015 | ND              | 5.76 | 96.1       | 6.00          | 0.693 |           |  |
| <b>Total BTEX</b>     | <b>227</b>  | 15.0            | 08/26/2015 | ND              |      |            |               |       |           |  |

Surrogate: 4-Bromofluorobenzene (PID) 88.6 % 85.6-137

| TPH 8015M              |             | mg/kg           |            | Analyzed By: CK |     |            |               |      |           |  |
|------------------------|-------------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|--|
| Analyte                | Result      | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |  |
| <b>GRO C6-C10</b>      | <b>3870</b> | 10.0            | 08/25/2015 | ND              | 193 | 96.5       | 200           | 1.10 |           |  |
| <b>DRO &gt;C10-C28</b> | <b>2840</b> | 10.0            | 08/25/2015 | ND              | 198 | 99.2       | 200           | 1.84 |           |  |

Surrogate: 1-Chlorooctane 184 % 47.2-157

Surrogate: 1-Chlorooctadecane 93.1 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 COG OPERATING  
 LUPE CARRASCO  
 P. O. BOX 1630  
 ARTESIA NM, 88210  
 Fax To: NONE

 Received: 08/21/2015  
 Reported: 08/27/2015  
 Project Name: STATE 11 COM #1  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 08/19/2015  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Judy Garcia

**Sample ID: B1 10' (H502225-05)**

| BTEX 8021B     |        | mg/kg           |            | Analyzed By: CK |      |            |               |       |           |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|-------|-----------|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD   | Qualifier |
| Benzene*       | <2.50  | 2.50            | 08/26/2015 | ND              | 2.00 | 100        | 2.00          | 0.409 |           |
| Toluene*       | 17.8   | 2.50            | 08/26/2015 | ND              | 1.87 | 93.6       | 2.00          | 0.205 |           |
| Ethylbenzene*  | 19.0   | 2.50            | 08/26/2015 | ND              | 1.97 | 98.5       | 2.00          | 1.30  |           |
| Total Xylenes* | 164    | 7.50            | 08/26/2015 | ND              | 5.76 | 96.1       | 6.00          | 0.693 |           |
| Total BTEX     | 201    | 15.0            | 08/26/2015 | ND              |      |            |               |       |           |

Surrogate: 4-Bromofluorobenzene (PID) 85.8 % 85.6-137

| TPH 8015M    |        | mg/kg           |            | Analyzed By: CK |     |            |               | S-04 |           |
|--------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte      | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| GRO C6-C10   | 3450   | 10.0            | 08/25/2015 | ND              | 193 | 96.5       | 200           | 1.10 |           |
| DRO >C10-C28 | 2530   | 10.0            | 08/25/2015 | ND              | 198 | 99.2       | 200           | 1.84 |           |

Surrogate: 1-Chlorooctane 167 % 47.2-157

Surrogate: 1-Chlorooctadecane 82.2 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 COG OPERATING  
 LUPE CARRASCO  
 P. O. BOX 1630  
 ARTESIA NM, 88210  
 Fax To: NONE

 Received: 08/21/2015  
 Reported: 08/27/2015  
 Project Name: STATE 11 COM #1  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 08/19/2015  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Judy Garcia

**Sample ID: B1 11' (H502225-06)**

| BTEx 8021B     |        | mg/kg           |            | Analyzed By: CK |      |            |               |       |           |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|-------|-----------|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD   | Qualifier |
| Benzene*       | <2.00  | 2.00            | 08/26/2015 | ND              | 2.00 | 100        | 2.00          | 0.409 |           |
| Toluene*       | 17.3   | 2.00            | 08/26/2015 | ND              | 1.87 | 93.6       | 2.00          | 0.205 |           |
| Ethylbenzene*  | 16.8   | 2.00            | 08/26/2015 | ND              | 1.97 | 98.5       | 2.00          | 1.30  |           |
| Total Xylenes* | 136    | 6.00            | 08/26/2015 | ND              | 5.76 | 96.1       | 6.00          | 0.693 |           |
| Total BTEX     | 171    | 12.0            | 08/26/2015 | ND              |      |            |               |       |           |

Surrogate: 4-Bromofluorobenzene (PID) 86.5 % 85.6-137

| TPH 8015M    |        | mg/kg           |            | Analyzed By: CK |     |            |               |      |           |
|--------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte      | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| GRO C6-C10   | 2870   | 10.0            | 08/25/2015 | ND              | 193 | 96.5       | 200           | 1.10 |           |
| DRO >C10-C28 | 2040   | 10.0            | 08/25/2015 | ND              | 198 | 99.2       | 200           | 1.84 |           |

Surrogate: 1-Chlorooctane 154 % 47.2-157

Surrogate: 1-Chlorooctadecane 92.1 % 52.1-176

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia

**Sample ID: B1 12' (H502225-07)**

| BTEx 8021B     |        | mg/kg           |            | Analyzed By: CK |      |            |               |       |           |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|-------|-----------|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD   | Qualifier |
| Benzene*       | <2.00  | 2.00            | 08/26/2015 | ND              | 2.00 | 100        | 2.00          | 0.409 |           |
| Toluene*       | 23.9   | 2.00            | 08/26/2015 | ND              | 1.87 | 93.6       | 2.00          | 0.205 |           |
| Ethylbenzene*  | 20.1   | 2.00            | 08/26/2015 | ND              | 1.97 | 98.5       | 2.00          | 1.30  |           |
| Total Xylenes* | 162    | 6.00            | 08/26/2015 | ND              | 5.76 | 96.1       | 6.00          | 0.693 |           |
| Total BTEx     | 206    | 12.0            | 08/26/2015 | ND              |      |            |               |       |           |

Surrogate: 4-Bromofluorobenzene (PID) 86.7 % 85.6-137

| TPH 8015M    |        | mg/kg           |            | Analyzed By: CK |     |            |               |      |           |
|--------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte      | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| GRO C6-C10   | 3060   | 10.0            | 08/25/2015 | ND              | 193 | 96.5       | 200           | 1.10 |           |
| DRO >C10-C28 | 1980   | 10.0            | 08/25/2015 | ND              | 198 | 99.2       | 200           | 1.84 |           |

Surrogate: 1-Chlorooctane 152 % 47.2-157

Surrogate: 1-Chlorooctadecane 82.7 % 52.1-176

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

|      |  |
|------|--|
| S-04 | The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.   |
| 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<br>Samples reported on an as received basis (wet) unless otherwise noted on report |

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Celey D. Keene, Lab Director/Quality Manager

**(575) 393-2326 FAX (575) 393-2476**  
**COG Operating LLC**

† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476

August 27, 2015

LUPE CARRASCO

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: STATE 11 COM #1

Enclosed are the results of analyses for samples received by the laboratory on 08/21/15 11:07.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. 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  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia

**Sample ID: B1 15' (H502224-01)**

| BTEX 8021B            |             |                 | mg/kg      |              | Analyzed By: CK |            |               |       |           |
|-----------------------|-------------|-----------------|------------|--------------|-----------------|------------|---------------|-------|-----------|
| Analyte               | Result      | Reporting Limit | Analyzed   | Method Blank | BS              | % Recovery | True Value QC | RPD   | Qualifier |
| Benzene*              | <2.00       | 2.00            | 08/26/2015 | ND           | 2.00            | 100        | 2.00          | 0.409 |           |
| <b>Toluene*</b>       | <b>16.8</b> | 2.00            | 08/26/2015 | ND           | 1.87            | 93.6       | 2.00          | 0.205 |           |
| <b>Ethylbenzene*</b>  | <b>15.7</b> | 2.00            | 08/26/2015 | ND           | 1.97            | 98.5       | 2.00          | 1.30  |           |
| <b>Total Xylenes*</b> | <b>127</b>  | 6.00            | 08/26/2015 | ND           | 5.76            | 96.1       | 6.00          | 0.693 |           |
| <b>Total BTEX</b>     | <b>159</b>  | 12.0            | 08/26/2015 | ND           |                 |            |               |       |           |

Surrogate: 4-Bromofluorobenzene (PID) 85.6 % 85.6-137

| TPH 8015M              |             |                 | mg/kg      |              | Analyzed By: CK |            |               |      |           |
|------------------------|-------------|-----------------|------------|--------------|-----------------|------------|---------------|------|-----------|
| Analyte                | Result      | Reporting Limit | Analyzed   | Method Blank | BS              | % Recovery | True Value QC | RPD  | Qualifier |
| <b>GRO C6-C10</b>      | <b>2880</b> | 10.0            | 08/25/2015 | ND           | 193             | 96.5       | 200           | 1.10 |           |
| <b>DRO &gt;C10-C28</b> | <b>1670</b> | 10.0            | 08/25/2015 | ND           | 198             | 99.2       | 200           | 1.84 |           |

Surrogate: 1-Chlorooctane 148 % 47.2-157

Surrogate: 1-Chlorooctadecane 91.2 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia

**Sample ID: B1 18' (H502224-02)**

| BTEX 8021B     |        | mg/kg           |            | Analyzed By: CK |      |            |               |       |           |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|-------|-----------|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD   | Qualifier |
| Benzene*       | <0.050 | 0.050           | 08/26/2015 | ND              | 2.00 | 100        | 2.00          | 0.409 |           |
| Toluene*       | <0.050 | 0.050           | 08/26/2015 | ND              | 1.87 | 93.6       | 2.00          | 0.205 |           |
| Ethylbenzene*  | <0.050 | 0.050           | 08/26/2015 | ND              | 1.97 | 98.5       | 2.00          | 1.30  |           |
| Total Xylenes* | <0.150 | 0.150           | 08/26/2015 | ND              | 5.76 | 96.1       | 6.00          | 0.693 |           |
| Total BTEX     | <0.300 | 0.300           | 08/26/2015 | ND              |      |            |               |       |           |

Surrogate: 4-Bromofluorobenzene (PID) 94.1 % 85.6-137

| TPH 8015M    |        | mg/kg           |            | Analyzed By: CK |     |            |               |      |           |
|--------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte      | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| GRO C6-C10   | 14.9   | 10.0            | 08/25/2015 | ND              | 193 | 96.5       | 200           | 1.10 |           |
| DRO >C10-C28 | 90.2   | 10.0            | 08/25/2015 | ND              | 198 | 99.2       | 200           | 1.84 |           |

Surrogate: 1-Chlorooctane 85.4 % 47.2-157

Surrogate: 1-Chlorooctadecane 78.3 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia

**Sample ID: B1 20' (H502224-03)**

| BTX 8021B      |        | mg/kg           |            | Analyzed By: CK |      |            |               |       |           |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|-------|-----------|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD   | Qualifier |
| Benzene*       | <0.050 | 0.050           | 08/26/2015 | ND              | 2.00 | 100        | 2.00          | 0.409 |           |
| Toluene*       | <0.050 | 0.050           | 08/26/2015 | ND              | 1.87 | 93.6       | 2.00          | 0.205 |           |
| Ethylbenzene*  | 0.150  | 0.050           | 08/26/2015 | ND              | 1.97 | 98.5       | 2.00          | 1.30  |           |
| Total Xylenes* | 0.240  | 0.150           | 08/26/2015 | ND              | 5.76 | 96.1       | 6.00          | 0.693 |           |
| Total BTX      | 0.391  | 0.300           | 08/26/2015 | ND              |      |            |               |       |           |

Surrogate: 4-Bromofluorobenzene (PID) 105 % 85.6-137

| TPH 8015M    |        | mg/kg           |            | Analyzed By: CK |     |            |               |      |           |
|--------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte      | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| GRO C6-C10   | 38.8   | 10.0            | 08/25/2015 | ND              | 193 | 96.5       | 200           | 1.10 |           |
| DRO >C10-C28 | 82.8   | 10.0            | 08/25/2015 | ND              | 198 | 99.2       | 200           | 1.84 |           |

Surrogate: 1-Chlorooctane 84.4 % 47.2-157

Surrogate: 1-Chlorooctadecane 79.3 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia

**Sample ID: B1 25' (H502224-04)**

| BTEx 8021B     |        | mg/kg           |            | Analyzed By: CK |      |            |               |       |           |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|-------|-----------|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD   | Qualifier |
| Benzene*       | <0.050 | 0.050           | 08/26/2015 | ND              | 2.00 | 100        | 2.00          | 0.409 |           |
| Toluene*       | <0.050 | 0.050           | 08/26/2015 | ND              | 1.87 | 93.6       | 2.00          | 0.205 |           |
| Ethylbenzene*  | 0.090  | 0.050           | 08/26/2015 | ND              | 1.97 | 98.5       | 2.00          | 1.30  |           |
| Total Xylenes* | <0.150 | 0.150           | 08/26/2015 | ND              | 5.76 | 96.1       | 6.00          | 0.693 |           |
| Total BTEX     | <0.300 | 0.300           | 08/26/2015 | ND              |      |            |               |       |           |

Surrogate: 4-Bromofluorobenzene (PID) 99.5 % 85.6-137

| TPH 8015M    |        | mg/kg           |            | Analyzed By: CK |     |            |               |      |           |
|--------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte      | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| GRO C6-C10   | <10.0  | 10.0            | 08/25/2015 | ND              | 193 | 96.5       | 200           | 1.10 |           |
| DRO >C10-C28 | 19.0   | 10.0            | 08/25/2015 | ND              | 198 | 99.2       | 200           | 1.84 |           |

Surrogate: 1-Chlorooctane 80.6 % 47.2-157

Surrogate: 1-Chlorooctadecane 70.2 % 52.1-176

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

|     |  |
|-----|--|
| 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<br>Samples reported on an as received basis (wet) unless otherwise noted on report |

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Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

|  |  |                            |  |                   |  |              |  |             |  |            |  |      |  |                                   |  |               |  |              |  |                                 |  |               |  |             |  |  |  |                                  |  |     |  |     |  |          |  |  |  |  |  |  |  |  |  |  |  |  |  |
|--|--|----------------------------|--|-------------------|--|--------------|--|-------------|--|------------|--|------|--|-----------------------------------|--|---------------|--|--------------|--|---------------------------------|--|---------------|--|-------------|--|--|--|----------------------------------|--|-----|--|-----|--|----------|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Company Name: COG Operating LLC  |  | <b>BILL TO</b>             |  | ANALYSIS REQUEST  |  |              |  |             |  |            |  |      |  |                                   |  |               |  |              |  |                                 |  |               |  |             |  |  |  |                                  |  |     |  |     |  |          |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Project Manager: Lupe Carrasco   |  | P.O. #:                    |  |                   |  |              |  |             |  |            |  |      |  |                                   |  |               |  |              |  |                                 |  |               |  |             |  |  |  |                                  |  |     |  |     |  |          |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Address: 2208 West Main  |  | Company: COG Operating LLC |  |                   |  |              |  |             |  |            |  |      |  |                                   |  |               |  |              |  |                                 |  |               |  |             |  |  |  |                                  |  |     |  |     |  |          |  |  |  |  |  |  |  |  |  |  |  |  |  |
| City: Artesia  |  | Attn: Robert McNeill       |  |                   |  |              |  |             |  |            |  |      |  |                                   |  |               |  |              |  |                                 |  |               |  |             |  |  |  |                                  |  |     |  |     |  |          |  |  |  |  |  |  |  |  |  |  |  |  |  |
| State: NM Zip: 88210   |  | Address: 600 W Illinois    |  |                   |  |              |  |             |  |            |  |      |  |                                   |  |               |  |              |  |                                 |  |               |  |             |  |  |  |                                  |  |     |  |     |  |          |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Phone #: (575) 748-6940 Fax #:   |  | City: Midland              |  |                   |  |              |  |             |  |            |  |      |  |                                   |  |               |  |              |  |                                 |  |               |  |             |  |  |  |                                  |  |     |  |     |  |          |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Project #:   |  | State: TX Zip: 79701       |  |                   |  |              |  |             |  |            |  |      |  |                                   |  |               |  |              |  |                                 |  |               |  |             |  |  |  |                                  |  |     |  |     |  |          |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Project Location:  |  | Phone #: (432) 221-0388    |  |                   |  |              |  |             |  |            |  |      |  |                                   |  |               |  |              |  |                                 |  |               |  |             |  |  |  |                                  |  |     |  |     |  |          |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Sampler Name: Lupe Carrasco  |  | Fax #:                     |  |                   |  |              |  |             |  |            |  |      |  |                                   |  |               |  |              |  |                                 |  |               |  |             |  |  |  |                                  |  |     |  |     |  |          |  |  |  |  |  |  |  |  |  |  |  |  |  |
| FOR LAB USE ONLY   |  |                            |  |                   |  |              |  |             |  |            |  |      |  |                                   |  |               |  |              |  |                                 |  |               |  |             |  |  |  |                                  |  |     |  |     |  |          |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Lab I.D.   |  | Sample I.D.                |  | (G)RAB OR (C)OMP. |  | # CONTAINERS |  | GROUNDWATER |  | WASTEWATER |  | SOIL |  | OIL                               |  | SLUDGE        |  | OTHER :      |  | ACID/BASE:                      |  | ICE / COOL    |  | OTHER :     |  | DATE   |  | TIME                             |  | BTX |  | TPH |  | Chloride |  |  |  |  |  |  |  |  |  |  |  |  |  |
| H507224  |  | B1 15'                     |  | X 1               |  | X 1          |  | X           |  | X          |  | X    |  | X                                 |  | X             |  | X            |  | X                               |  | X             |  | X           |  | 8/19/15  |  | 8:53am                           |  | X   |  | X   |  | X        |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1  |  | B1 18'                     |  | X 1               |  | X 1          |  | X           |  | X          |  | X    |  | X                                 |  | X             |  | X            |  | X                               |  | X             |  | X           |  |  |  |                                  |  |     |  |     |  |          |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2  |  | B1 20'                     |  | X 1               |  | X 1          |  | X           |  | X          |  | X    |  | X                                 |  | X             |  | X            |  | X                               |  | X             |  | X           |  |  |  |                                  |  |     |  |     |  |          |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3  |  | B1 25'                     |  | X 1               |  | X 1          |  | X           |  | X          |  | X    |  | X                                 |  | X             |  | X            |  | X                               |  | X             |  | X           |  |  |  |                                  |  |     |  |     |  |          |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4  |  | B1 25'                     |  | X 1               |  | X 1          |  | X           |  | X          |  | X    |  | X                                 |  | X             |  | X            |  | X                               |  | X             |  | X           |  |  |  |                                  |  |     |  |     |  |          |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| Delivered By: (Circle One)   |  |                            |  |                   |  |              |  |             |  |            |  |      |  | Relinquished By: <i>Atreuillo</i> |  | Date: 8/21/15 |  | Time: 11:01  |  | Received By: <i>Judy Garcia</i> |  | Date: 8/21/15 |  | Time: 11:01 |  | Sample Condition: <input checked="" type="checkbox"/> Cool <input type="checkbox"/> Intact |  | CHECKED BY: (Initials) <i>AG</i> |  |     |  |     |  |          |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Sampler - UPS - Bus - Other: <i>7:20</i>   |  |                            |  |                   |  |              |  |             |  |            |  |      |  | Relinquished By: <i>Atreuillo</i> |  | Date: 8/21/15 |  | Time: 11:01  |  | Received By: <i>Judy Garcia</i> |  | Date: 8/21/15 |  | Time: 11:01 |  | Sample Condition: <input checked="" type="checkbox"/> Cool <input type="checkbox"/> Intact |  | CHECKED BY: (Initials) <i>AG</i> |  |     |  |     |  |          |  |  |  |  |  |  |  |  |  |  |  |  |  |
| FORM-006 R 2.0   |  |                            |  |                   |  |              |  |             |  |            |  |      |  | Relinquished By: <i>Atreuillo</i> |  | Date: 8/21/15 |  | Time: 11:01  |  | Received By: <i>Judy Garcia</i> |  | Date: 8/21/15 |  | Time: 11:01 |  | Sample Condition: <input checked="" type="checkbox"/> Cool <input type="checkbox"/> Intact |  | CHECKED BY: (Initials) <i>AG</i> |  |     |  |     |  |          |  |  |  |  |  |  |  |  |  |  |  |  |  |
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PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

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August 27, 2015

LUPE CARRASCO

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: STATE 11 COM #1

Enclosed are the results of analyses for samples received by the laboratory on 08/21/15 11:07.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. 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,

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

Celey D. Keene

Lab Director/Quality Manager



**Analytical Results For:**

COG OPERATING  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia

**Sample ID: B1 28' (H502223-01)**

| BTEX 8021B     |        | mg/kg           |            | Analyzed By: CK |      |            |               |      |           |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |
| Benzene*       | <0.050 | 0.050           | 08/26/2015 | ND              | 1.99 | 99.5       | 2.00          | 4.04 |           |
| Toluene*       | <0.050 | 0.050           | 08/26/2015 | ND              | 1.85 | 92.6       | 2.00          | 3.26 |           |
| Ethylbenzene*  | 0.073  | 0.050           | 08/26/2015 | ND              | 1.97 | 98.4       | 2.00          | 1.93 |           |
| Total Xylenes* | <0.150 | 0.150           | 08/26/2015 | ND              | 5.67 | 94.4       | 6.00          | 2.60 |           |
| Total BTEX     | <0.300 | 0.300           | 08/26/2015 | ND              |      |            |               |      |           |

Surrogate: 4-Bromofluorobenzene (PID) 97.0 % 85.6-137

| TPH 8015M    |        | mg/kg           |            | Analyzed By: CK |     |            |               |      |           |
|--------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte      | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| GRO C6-C10   | <10.0  | 10.0            | 08/25/2015 | ND              | 193 | 96.5       | 200           | 1.10 |           |
| DRO >C10-C28 | 16.8   | 10.0            | 08/25/2015 | ND              | 198 | 99.2       | 200           | 1.84 |           |

Surrogate: 1-Chlorooctane 83.0 % 47.2-157

Surrogate: 1-Chlorooctadecane 78.8 % 52.1-176

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  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia

**Sample ID: B1 31' (H502223-02)**

| BTEx 8021B     |        | mg/kg           |            | Analyzed By: CK |      |            |               |      |           |  |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|--|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |  |
| Benzene*       | <0.050 | 0.050           | 08/26/2015 | ND              | 1.99 | 99.5       | 2.00          | 4.04 |           |  |
| Toluene*       | <0.050 | 0.050           | 08/26/2015 | ND              | 1.85 | 92.6       | 2.00          | 3.26 |           |  |
| Ethylbenzene*  | <0.050 | 0.050           | 08/26/2015 | ND              | 1.97 | 98.4       | 2.00          | 1.93 |           |  |
| Total Xylenes* | <0.150 | 0.150           | 08/26/2015 | ND              | 5.67 | 94.4       | 6.00          | 2.60 |           |  |
| Total BTEX     | <0.300 | 0.300           | 08/26/2015 | ND              |      |            |               |      |           |  |

Surrogate: 4-Bromofluorobenzene (PID) 97.1 % 85.6-137

| TPH 8015M    |        | mg/kg           |            | Analyzed By: CK |     |            |               |      |           |
|--------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte      | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| GRO C6-C10   | <10.0  | 10.0            | 08/25/2015 | ND              | 193 | 96.5       | 200           | 1.10 |           |
| DRO >C10-C28 | <10.0  | 10.0            | 08/25/2015 | ND              | 198 | 99.2       | 200           | 1.84 |           |

Surrogate: 1-Chlorooctane 77.6 % 47.2-157

Surrogate: 1-Chlorooctadecane 81.0 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia

**Sample ID: B1 34' (H502223-03)**

| BTEx 8021B     |        | mg/kg           |            | Analyzed By: CK |      |            |               |      |           |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |
| Benzene*       | <0.050 | 0.050           | 08/26/2015 | ND              | 1.99 | 99.5       | 2.00          | 4.04 |           |
| Toluene*       | <0.050 | 0.050           | 08/26/2015 | ND              | 1.85 | 92.6       | 2.00          | 3.26 |           |
| Ethylbenzene*  | <0.050 | 0.050           | 08/26/2015 | ND              | 1.97 | 98.4       | 2.00          | 1.93 |           |
| Total Xylenes* | <0.150 | 0.150           | 08/26/2015 | ND              | 5.67 | 94.4       | 6.00          | 2.60 |           |
| Total BTEX     | <0.300 | 0.300           | 08/26/2015 | ND              |      |            |               |      |           |

Surrogate: 4-Bromofluorobenzene (PID) 96.6 % 85.6-137

| TPH 8015M    |        | mg/kg           |            | Analyzed By: CK |     |            |               |      |           |
|--------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte      | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| GRO C6-C10   | <10.0  | 10.0            | 08/25/2015 | ND              | 193 | 96.5       | 200           | 1.10 |           |
| DRO >C10-C28 | <10.0  | 10.0            | 08/25/2015 | ND              | 198 | 99.2       | 200           | 1.84 |           |

Surrogate: 1-Chlorooctane 80.8 % 47.2-157

Surrogate: 1-Chlorooctadecane 84.0 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia

**Sample ID: B1 37' (H502223-04)**

| BTEx 8021B     |        | mg/kg           |            | Analyzed By: CK |      |            |               |      |           |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |
| Benzene*       | <0.050 | 0.050           | 08/26/2015 | ND              | 1.99 | 99.5       | 2.00          | 4.04 |           |
| Toluene*       | <0.050 | 0.050           | 08/26/2015 | ND              | 1.85 | 92.6       | 2.00          | 3.26 |           |
| Ethylbenzene*  | <0.050 | 0.050           | 08/26/2015 | ND              | 1.97 | 98.4       | 2.00          | 1.93 |           |
| Total Xylenes* | <0.150 | 0.150           | 08/26/2015 | ND              | 5.67 | 94.4       | 6.00          | 2.60 |           |
| Total BTEX     | <0.300 | 0.300           | 08/26/2015 | ND              |      |            |               |      |           |

Surrogate: 4-Bromofluorobenzene (PID) 95.1 % 85.6-137

| TPH 8015M    |        | mg/kg           |            | Analyzed By: CK |     |            |               |      |           |
|--------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte      | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| GRO C6-C10   | <10.0  | 10.0            | 08/25/2015 | ND              | 193 | 96.5       | 200           | 1.10 |           |
| DRO >C10-C28 | <10.0  | 10.0            | 08/25/2015 | ND              | 198 | 99.2       | 200           | 1.84 |           |

Surrogate: 1-Chlorooctane 80.0 % 47.2-157

Surrogate: 1-Chlorooctadecane 82.9 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia

**Sample ID: B1 40' (H502223-05)**

| BTEx 8021B     |        | mg/kg           |            | Analyzed By: CK |      |            |               |      |           |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |
| Benzene*       | <0.050 | 0.050           | 08/26/2015 | ND              | 1.99 | 99.5       | 2.00          | 4.04 |           |
| Toluene*       | <0.050 | 0.050           | 08/26/2015 | ND              | 1.85 | 92.6       | 2.00          | 3.26 |           |
| Ethylbenzene*  | <0.050 | 0.050           | 08/26/2015 | ND              | 1.97 | 98.4       | 2.00          | 1.93 |           |
| Total Xylenes* | <0.150 | 0.150           | 08/26/2015 | ND              | 5.67 | 94.4       | 6.00          | 2.60 |           |
| Total BTEX     | <0.300 | 0.300           | 08/26/2015 | ND              |      |            |               |      |           |

Surrogate: 4-Bromofluorobenzene (PID) 96.0 % 85.6-137

| TPH 8015M    |        | mg/kg           |            | Analyzed By: CK |     |            |               |      |           |
|--------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte      | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| GRO C6-C10   | <10.0  | 10.0            | 08/25/2015 | ND              | 193 | 96.5       | 200           | 1.10 |           |
| DRO >C10-C28 | <10.0  | 10.0            | 08/25/2015 | ND              | 198 | 99.2       | 200           | 1.84 |           |

Surrogate: 1-Chlorooctane 78.9 % 47.2-157

Surrogate: 1-Chlorooctadecane 70.7 % 52.1-176

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

|     |  |
|-----|--|
| 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<br>Samples reported on an as received basis (wet) unless otherwise noted on report |

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Celey D. Keene, Lab Director/Quality Manager



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

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August 27, 2015

LUPE CARRASCO

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: STATE 11 COM #1

Enclosed are the results of analyses for samples received by the laboratory on 08/21/15 11:07.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. 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,

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

Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia

**Sample ID: B2 7 (H502222-01)**

| BTEX 8021B            |             |                 | mg/kg      |              | Analyzed By: CK |            |               |      |           |
|-----------------------|-------------|-----------------|------------|--------------|-----------------|------------|---------------|------|-----------|
| Analyte               | Result      | Reporting Limit | Analyzed   | Method Blank | BS              | % Recovery | True Value QC | RPD  | Qualifier |
| Benzene*              | <0.500      | 0.500           | 08/26/2015 | ND           | 1.99            | 99.5       | 2.00          | 4.04 |           |
| <b>Toluene*</b>       | <b>9.33</b> | 0.500           | 08/26/2015 | ND           | 1.85            | 92.6       | 2.00          | 3.26 |           |
| <b>Ethylbenzene*</b>  | <b>7.72</b> | 0.500           | 08/26/2015 | ND           | 1.97            | 98.4       | 2.00          | 1.93 |           |
| <b>Total Xylenes*</b> | <b>95.0</b> | 1.50            | 08/26/2015 | ND           | 5.67            | 94.4       | 6.00          | 2.60 |           |
| <b>Total BTEX</b>     | <b>112</b>  | 3.00            | 08/26/2015 | ND           |                 |            |               |      |           |

Surrogate: 4-Bromofluorobenzene (PID) 100 % 85.6-137

| TPH 8015M              |            |                 | mg/kg      |              | Analyzed By: CK |            |               |      |           |
|------------------------|------------|-----------------|------------|--------------|-----------------|------------|---------------|------|-----------|
| Analyte                | Result     | Reporting Limit | Analyzed   | Method Blank | BS              | % Recovery | True Value QC | RPD  | Qualifier |
| <b>GRO C6-C10</b>      | <b>773</b> | 10.0            | 08/25/2015 | ND           | 190             | 95.0       | 200           | 1.05 |           |
| <b>DRO &gt;C10-C28</b> | <b>550</b> | 10.0            | 08/25/2015 | ND           | 198             | 98.8       | 200           | 1.17 |           |

Surrogate: 1-Chlorooctane 123 % 47.2-157

Surrogate: 1-Chlorooctadecane 84.3 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia

**Sample ID: B2 8 (H502222-02)**

| BTX 8021B      |        | mg/kg           |            | Analyzed By: CK |      |            |               |      |           |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |
| Benzene*       | <0.050 | 0.050           | 08/26/2015 | ND              | 1.99 | 99.5       | 2.00          | 4.04 |           |
| Toluene*       | <0.050 | 0.050           | 08/26/2015 | ND              | 1.85 | 92.6       | 2.00          | 3.26 |           |
| Ethylbenzene*  | 0.055  | 0.050           | 08/26/2015 | ND              | 1.97 | 98.4       | 2.00          | 1.93 |           |
| Total Xylenes* | <0.150 | 0.150           | 08/26/2015 | ND              | 5.67 | 94.4       | 6.00          | 2.60 |           |
| Total BTX      | <0.300 | 0.300           | 08/26/2015 | ND              |      |            |               |      |           |

Surrogate: 4-Bromofluorobenzene (PID) 96.4 % 85.6-137

| TPH 8015M    |        | mg/kg           |            | Analyzed By: CK |     |            |               |      |           |
|--------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte      | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| GRO C6-C10   | <10.0  | 10.0            | 08/25/2015 | ND              | 190 | 95.0       | 200           | 1.05 |           |
| DRO >C10-C28 | 28.6   | 10.0            | 08/25/2015 | ND              | 198 | 98.8       | 200           | 1.17 |           |

Surrogate: 1-Chlorooctane 92.6 % 47.2-157

Surrogate: 1-Chlorooctadecane 77.9 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia

**Sample ID: B2 9 (H502222-03)**

| BTX 8021B      |        | mg/kg           |            | Analyzed By: CK |      |            |               |      |           |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |
| Benzene*       | <0.100 | 0.100           | 08/26/2015 | ND              | 1.99 | 99.5       | 2.00          | 4.04 |           |
| Toluene*       | <0.100 | 0.100           | 08/26/2015 | ND              | 1.85 | 92.6       | 2.00          | 3.26 |           |
| Ethylbenzene*  | 0.336  | 0.100           | 08/26/2015 | ND              | 1.97 | 98.4       | 2.00          | 1.93 |           |
| Total Xylenes* | 4.36   | 0.300           | 08/26/2015 | ND              | 5.67 | 94.4       | 6.00          | 2.60 |           |
| Total BTX      | 4.70   | 0.600           | 08/26/2015 | ND              |      |            |               |      |           |

Surrogate: 4-Bromofluorobenzene (PID) 88.6 % 85.6-137

| TPH 8015M    |        | mg/kg           |            | Analyzed By: CK |     |            |               |      |           |
|--------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte      | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| GRO C6-C10   | 186    | 10.0            | 08/25/2015 | ND              | 190 | 95.0       | 200           | 1.05 |           |
| DRO >C10-C28 | 322    | 10.0            | 08/25/2015 | ND              | 198 | 98.8       | 200           | 1.17 |           |

Surrogate: 1-Chlorooctane 106 % 47.2-157

Surrogate: 1-Chlorooctadecane 80.6 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia

**Sample ID: B2 10 (H502222-04)**

| BTEx 8021B     |        | mg/kg           |            | Analyzed By: CK |      |            |               |      |           |  |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|--|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |  |
| Benzene*       | <0.050 | 0.050           | 08/26/2015 | ND              | 1.99 | 99.5       | 2.00          | 4.04 |           |  |
| Toluene*       | <0.050 | 0.050           | 08/26/2015 | ND              | 1.85 | 92.6       | 2.00          | 3.26 |           |  |
| Ethylbenzene*  | <0.050 | 0.050           | 08/26/2015 | ND              | 1.97 | 98.4       | 2.00          | 1.93 |           |  |
| Total Xylenes* | <0.150 | 0.150           | 08/26/2015 | ND              | 5.67 | 94.4       | 6.00          | 2.60 |           |  |
| Total BTEX     | <0.300 | 0.300           | 08/26/2015 | ND              |      |            |               |      |           |  |

Surrogate: 4-Bromofluorobenzene (PID) 94.1 % 85.6-137

| TPH 8015M    |        | mg/kg           |            | Analyzed By: CK |     |            |               |      |           |
|--------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte      | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| GRO C6-C10   | <10.0  | 10.0            | 08/25/2015 | ND              | 190 | 95.0       | 200           | 1.05 |           |
| DRO >C10-C28 | 28.2   | 10.0            | 08/25/2015 | ND              | 198 | 98.8       | 200           | 1.17 |           |

Surrogate: 1-Chlorooctane 89.1 % 47.2-157

Surrogate: 1-Chlorooctadecane 79.6 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia

**Sample ID: B2 11 (H502222-05)**

| BTEx 8021B     |        | mg/kg           |            | Analyzed By: CK |      |            |               |      |           |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |
| Benzene*       | <0.050 | 0.050           | 08/26/2015 | ND              | 1.99 | 99.5       | 2.00          | 4.04 |           |
| Toluene*       | <0.050 | 0.050           | 08/26/2015 | ND              | 1.85 | 92.6       | 2.00          | 3.26 |           |
| Ethylbenzene*  | <0.050 | 0.050           | 08/26/2015 | ND              | 1.97 | 98.4       | 2.00          | 1.93 |           |
| Total Xylenes* | <0.150 | 0.150           | 08/26/2015 | ND              | 5.67 | 94.4       | 6.00          | 2.60 |           |
| Total BTEX     | <0.300 | 0.300           | 08/26/2015 | ND              |      |            |               |      |           |

Surrogate: 4-Bromofluorobenzene (PID) 95.1 % 85.6-137

| TPH 8015M    |        | mg/kg           |            | Analyzed By: CK |     |            |               |      |           |
|--------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte      | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| GRO C6-C10   | <10.0  | 10.0            | 08/25/2015 | ND              | 193 | 96.5       | 200           | 1.10 |           |
| DRO >C10-C28 | <10.0  | 10.0            | 08/25/2015 | ND              | 198 | 99.2       | 200           | 1.84 |           |

Surrogate: 1-Chlorooctane 89.5 % 47.2-157

Surrogate: 1-Chlorooctadecane 84.7 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**COG OPERATING  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONEReceived: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVENSampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia**Sample ID: B2 12 (H502222-06)**

| BTEx 8021B     |        | mg/kg           |            | Analyzed By: CK |      |            |               |      |           |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |
| Benzene*       | <0.050 | 0.050           | 08/26/2015 | ND              | 1.99 | 99.5       | 2.00          | 4.04 |           |
| Toluene*       | <0.050 | 0.050           | 08/26/2015 | ND              | 1.85 | 92.6       | 2.00          | 3.26 |           |
| Ethylbenzene*  | <0.050 | 0.050           | 08/26/2015 | ND              | 1.97 | 98.4       | 2.00          | 1.93 |           |
| Total Xylenes* | <0.150 | 0.150           | 08/26/2015 | ND              | 5.67 | 94.4       | 6.00          | 2.60 |           |
| Total BTEX     | <0.300 | 0.300           | 08/26/2015 | ND              |      |            |               |      |           |

Surrogate: 4-Bromofluorobenzene (PID) 96.5 % 85.6-137

| TPH 8015M    |        | mg/kg           |            | Analyzed By: CK |     |            |               |      |           |
|--------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte      | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| GRO C6-C10   | <10.0  | 10.0            | 08/25/2015 | ND              | 193 | 96.5       | 200           | 1.10 |           |
| DRO >C10-C28 | <10.0  | 10.0            | 08/25/2015 | ND              | 198 | 99.2       | 200           | 1.84 |           |

Surrogate: 1-Chlorooctane 82.1 % 47.2-157

Surrogate: 1-Chlorooctadecane 86.9 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

|     |  |
|-----|--|
| 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<br>Samples reported on an as received basis (wet) unless otherwise noted on report |

---

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Celey D. Keene, Lab Director/Quality Manager

**(575) 393-2326 FAX (575) 393-2476**  
**COG Operating LLC**

#54



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

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August 27, 2015

LUPE CARRASCO

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: STATE 11 COM #1

Enclosed are the results of analyses for samples received by the laboratory on 08/21/15 11:07.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. 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,

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

Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia

**Sample ID: B2 15' (H502221-01)**

| BTEX 8021B     |        | mg/kg           |            | Analyzed By: CK |      |            |               |      |           |  |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|--|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |  |
| Benzene*       | <0.050 | 0.050           | 08/26/2015 | ND              | 1.99 | 99.5       | 2.00          | 4.04 |           |  |
| Toluene*       | <0.050 | 0.050           | 08/26/2015 | ND              | 1.85 | 92.6       | 2.00          | 3.26 |           |  |
| Ethylbenzene*  | <0.050 | 0.050           | 08/26/2015 | ND              | 1.97 | 98.4       | 2.00          | 1.93 |           |  |
| Total Xylenes* | <0.150 | 0.150           | 08/26/2015 | ND              | 5.67 | 94.4       | 6.00          | 2.60 |           |  |
| Total BTEX     | <0.300 | 0.300           | 08/26/2015 | ND              |      |            |               |      |           |  |

Surrogate: 4-Bromofluorobenzene (PID) 95.3 % 85.6-137

| TPH 8015M    |        | mg/kg           |            | Analyzed By: CK |     |            |               |      |           |  |
|--------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|--|
| Analyte      | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |  |
| GRO C6-C10   | <10.0  | 10.0            | 08/25/2015 | ND              | 190 | 95.0       | 200           | 1.05 |           |  |
| DRO >C10-C28 | <10.0  | 10.0            | 08/25/2015 | ND              | 198 | 98.8       | 200           | 1.17 |           |  |

Surrogate: 1-Chlorooctane 80.9 % 47.2-157

Surrogate: 1-Chlorooctadecane 76.9 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 COG OPERATING  
 LUPE CARRASCO  
 P. O. BOX 1630  
 ARTESIA NM, 88210  
 Fax To: NONE

 Received: 08/21/2015  
 Reported: 08/27/2015  
 Project Name: STATE 11 COM #1  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 08/19/2015  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Judy Garcia

**Sample ID: B2 18 (H502221-02)**

| BTEx 8021B     |        | mg/kg           |            | Analyzed By: CK |      |            |               |      |           |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |
| Benzene*       | <0.050 | 0.050           | 08/26/2015 | ND              | 1.99 | 99.5       | 2.00          | 4.04 |           |
| Toluene*       | <0.050 | 0.050           | 08/26/2015 | ND              | 1.85 | 92.6       | 2.00          | 3.26 |           |
| Ethylbenzene*  | <0.050 | 0.050           | 08/26/2015 | ND              | 1.97 | 98.4       | 2.00          | 1.93 |           |
| Total Xylenes* | <0.150 | 0.150           | 08/26/2015 | ND              | 5.67 | 94.4       | 6.00          | 2.60 |           |
| Total BTEX     | <0.300 | 0.300           | 08/26/2015 | ND              |      |            |               |      |           |

Surrogate: 4-Bromofluorobenzene (PID) 95.7 % 85.6-137

| TPH 8015M    |        | mg/kg           |            | Analyzed By: CK |     |            |               |      |           |
|--------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte      | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| GRO C6-C10   | <10.0  | 10.0            | 08/25/2015 | ND              | 190 | 95.0       | 200           | 1.05 |           |
| DRO >C10-C28 | <10.0  | 10.0            | 08/25/2015 | ND              | 198 | 98.8       | 200           | 1.17 |           |

Surrogate: 1-Chlorooctane 81.1 % 47.2-157

Surrogate: 1-Chlorooctadecane 75.1 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 COG OPERATING  
 LUPE CARRASCO  
 P. O. BOX 1630  
 ARTESIA NM, 88210  
 Fax To: NONE

 Received: 08/21/2015  
 Reported: 08/27/2015  
 Project Name: STATE 11 COM #1  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 08/19/2015  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Judy Garcia

**Sample ID: B2 23 (H502221-03)**

| BTEx 8021B     |        | mg/kg           |            | Analyzed By: CK |      |            |               |      |           |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |
| Benzene*       | <0.050 | 0.050           | 08/26/2015 | ND              | 1.99 | 99.5       | 2.00          | 4.04 |           |
| Toluene*       | <0.050 | 0.050           | 08/26/2015 | ND              | 1.85 | 92.6       | 2.00          | 3.26 |           |
| Ethylbenzene*  | <0.050 | 0.050           | 08/26/2015 | ND              | 1.97 | 98.4       | 2.00          | 1.93 |           |
| Total Xylenes* | <0.150 | 0.150           | 08/26/2015 | ND              | 5.67 | 94.4       | 6.00          | 2.60 |           |
| Total BTEX     | <0.300 | 0.300           | 08/26/2015 | ND              |      |            |               |      |           |

Surrogate: 4-Bromofluorobenzene (PID) 96.0 % 85.6-137

| TPH 8015M    |        | mg/kg           |            | Analyzed By: CK |     |            |               |      |           |
|--------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte      | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| GRO C6-C10   | <10.0  | 10.0            | 08/25/2015 | ND              | 190 | 95.0       | 200           | 1.05 |           |
| DRO >C10-C28 | <10.0  | 10.0            | 08/25/2015 | ND              | 198 | 98.8       | 200           | 1.17 |           |

Surrogate: 1-Chlorooctane 81.6 % 47.2-157

Surrogate: 1-Chlorooctadecane 78.3 % 52.1-176

Cardinal Laboratories

\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

COG OPERATING  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia

**Sample ID: B2 25 (H502221-04)**

| BTX 8021B      |        | mg/kg           |            | Analyzed By: CK |      |            |               |      |           |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |
| Benzene*       | <0.050 | 0.050           | 08/26/2015 | ND              | 1.99 | 99.5       | 2.00          | 4.04 |           |
| Toluene*       | <0.050 | 0.050           | 08/26/2015 | ND              | 1.85 | 92.6       | 2.00          | 3.26 |           |
| Ethylbenzene*  | <0.050 | 0.050           | 08/26/2015 | ND              | 1.97 | 98.4       | 2.00          | 1.93 |           |
| Total Xylenes* | <0.150 | 0.150           | 08/26/2015 | ND              | 5.67 | 94.4       | 6.00          | 2.60 |           |
| Total BTX      | <0.300 | 0.300           | 08/26/2015 | ND              |      |            |               |      |           |

Surrogate: 4-Bromofluorobenzene (PID) 97.4 % 85.6-137

| TPH 8015M    |        | mg/kg           |            | Analyzed By: CK |     |            |               |      |           |
|--------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte      | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| GRO C6-C10   | <10.0  | 10.0            | 08/25/2015 | ND              | 190 | 95.0       | 200           | 1.05 |           |
| DRO >C10-C28 | <10.0  | 10.0            | 08/25/2015 | ND              | 198 | 98.8       | 200           | 1.17 |           |

Surrogate: 1-Chlorooctane 79.9 % 47.2-157

Surrogate: 1-Chlorooctadecane 78.7 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

|     |  |
|-----|--|
| 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<br>Samples reported on an as received basis (wet) unless otherwise noted on report |

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---

Celey D. Keene, Lab Director/Quality Manager

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

## ANALYSIS REQUEST

|          |                   |
|----------|-------------------|
| P.O. #:  |                   |
| Company: | COG Operating LLC |
| Attn:    | Robert McNeill    |
| Address: | 600 W Illinois    |
| City:    | Midland           |
| State:   | TX                |
| Zip:     | 79701             |
| Phone #: | (432) 221-0388    |
| Fax #:   |                   |
| PRECEP/  | CALC/             |

[illegible][illegible]

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|                    |         |              |                       |                              |                             |                |
|--------------------|---------|--------------|-----------------------|------------------------------|-----------------------------|----------------|
| Relinquished By:   | Date:   | Received By: | Phone Result:         | <input type="checkbox"/> Yes | <input type="checkbox"/> No | Add'l Phone #: |
| <i>[Signature]</i> | 8/20/15 |              | Fax Result:           | <input type="checkbox"/> Yes | <input type="checkbox"/> No | Add'l Fax #:   |
| Time:              | 5:00pm  |              | REMARKS:              | gcarasco@concho.com          |                             |                |
| Date:              | 8/1/15  | Received By: | atruijillo@concho.com |                              |                             |                |

Delivered By: (Circle One)

Sample - UPS - Bus - Other:

FORM-006 R 2.0

Time: 11:07

7.20

Sample Condition

Cool ☒ Inlet ☒

☐ Yes ☐ Yes

☐ No ☐ No

CHECKED BY: Judy Garcia

(Initials) JG

† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476

August 27, 2015

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

RE: STATE 11 COM #1

Enclosed are the results of analyses for samples received by the laboratory on 08/21/15 11:07.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. 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  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia

**Sample ID: B2 28' (H502220-01)**

| BTEX 8021B     |        | mg/kg           |            | Analyzed By: CK |      |            |               |      |           |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |
| Benzene*       | <0.050 | 0.050           | 08/26/2015 | ND              | 1.99 | 99.5       | 2.00          | 4.04 |           |
| Toluene*       | <0.050 | 0.050           | 08/26/2015 | ND              | 1.85 | 92.6       | 2.00          | 3.26 |           |
| Ethylbenzene*  | <0.050 | 0.050           | 08/26/2015 | ND              | 1.97 | 98.4       | 2.00          | 1.93 |           |
| Total Xylenes* | <0.150 | 0.150           | 08/26/2015 | ND              | 5.67 | 94.4       | 6.00          | 2.60 |           |
| Total BTEX     | <0.300 | 0.300           | 08/26/2015 | ND              |      |            |               |      |           |

Surrogate: 4-Bromofluorobenzene (PID) 96.9 % 85.6-137

| TPH 8015M    |        | mg/kg           |            | Analyzed By: CK |     |            |               |      |           |  |
|--------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|--|
| Analyte      | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |  |
| GRO C6-C10   | <10.0  | 10.0            | 08/24/2015 | ND              | 190 | 95.0       | 200           | 1.05 |           |  |
| DRO >C10-C28 | <10.0  | 10.0            | 08/24/2015 | ND              | 198 | 98.8       | 200           | 1.17 |           |  |

Surrogate: 1-Chlorooctane 75.7 % 47.2-157

Surrogate: 1-Chlorooctadecane 71.6 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia

**Sample ID: B2 34' (H502220-02)**

| BTEx 8021B     |        | mg/kg           |            | Analyzed By: CK |      |            |               |      |           |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |
| Benzene*       | <0.050 | 0.050           | 08/26/2015 | ND              | 1.99 | 99.5       | 2.00          | 4.04 |           |
| Toluene*       | <0.050 | 0.050           | 08/26/2015 | ND              | 1.85 | 92.6       | 2.00          | 3.26 |           |
| Ethylbenzene*  | <0.050 | 0.050           | 08/26/2015 | ND              | 1.97 | 98.4       | 2.00          | 1.93 |           |
| Total Xylenes* | <0.150 | 0.150           | 08/26/2015 | ND              | 5.67 | 94.4       | 6.00          | 2.60 |           |
| Total BTEx     | <0.300 | 0.300           | 08/26/2015 | ND              |      |            |               |      |           |

Surrogate: 4-Bromofluorobenzene (PID) 96.3 % 85.6-137

| TPH 8015M    |        | mg/kg           |            | Analyzed By: CK |     |            |               |      |           |
|--------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte      | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| GRO C6-C10   | <10.0  | 10.0            | 08/25/2015 | ND              | 190 | 95.0       | 200           | 1.05 |           |
| DRO >C10-C28 | <10.0  | 10.0            | 08/25/2015 | ND              | 198 | 98.8       | 200           | 1.17 |           |

Surrogate: 1-Chlorooctane 82.1 % 47.2-157

Surrogate: 1-Chlorooctadecane 77.0 % 52.1-176

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia

**Sample ID: B2 37' (H502220-03)**

| BTX 8021B      |        | mg/kg           |            | Analyzed By: CK |      |            |               |      |           |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |
| Benzene*       | <0.050 | 0.050           | 08/26/2015 | ND              | 1.99 | 99.5       | 2.00          | 4.04 |           |
| Toluene*       | <0.050 | 0.050           | 08/26/2015 | ND              | 1.85 | 92.6       | 2.00          | 3.26 |           |
| Ethylbenzene*  | <0.050 | 0.050           | 08/26/2015 | ND              | 1.97 | 98.4       | 2.00          | 1.93 |           |
| Total Xylenes* | <0.150 | 0.150           | 08/26/2015 | ND              | 5.67 | 94.4       | 6.00          | 2.60 |           |
| Total BTX      | <0.300 | 0.300           | 08/26/2015 | ND              |      |            |               |      |           |

Surrogate: 4-Bromofluorobenzene (PID) 95.0 % 85.6-137

| TPH 8015M    |        | mg/kg           |            | Analyzed By: CK |     |            |               |      |           |
|--------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte      | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| GRO C6-C10   | <10.0  | 10.0            | 08/25/2015 | ND              | 190 | 95.0       | 200           | 1.05 |           |
| DRO >C10-C28 | <10.0  | 10.0            | 08/25/2015 | ND              | 198 | 98.8       | 200           | 1.17 |           |

Surrogate: 1-Chlorooctane 84.5 % 47.2-157

Surrogate: 1-Chlorooctadecane 80.0 % 52.1-176

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

COG OPERATING  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia

**Sample ID: B2 41' (H502220-04)**

| BTEx 8021B     |        | mg/kg           |            | Analyzed By: CK |      |            |               |      |           |  |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|--|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |  |
| Benzene*       | <0.050 | 0.050           | 08/26/2015 | ND              | 1.99 | 99.5       | 2.00          | 4.04 |           |  |
| Toluene*       | <0.050 | 0.050           | 08/26/2015 | ND              | 1.85 | 92.6       | 2.00          | 3.26 |           |  |
| Ethylbenzene*  | <0.050 | 0.050           | 08/26/2015 | ND              | 1.97 | 98.4       | 2.00          | 1.93 |           |  |
| Total Xylenes* | <0.150 | 0.150           | 08/26/2015 | ND              | 5.67 | 94.4       | 6.00          | 2.60 |           |  |
| Total BTEX     | <0.300 | 0.300           | 08/26/2015 | ND              |      |            |               |      |           |  |

Surrogate: 4-Bromofluorobenzene (PID) 96.8 % 85.6-137

| TPH 8015M    |        | mg/kg           |            | Analyzed By: CK |     |            |               |      |           |
|--------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte      | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| GRO C6-C10   | <10.0  | 10.0            | 08/25/2015 | ND              | 190 | 95.0       | 200           | 1.05 |           |
| DRO >C10-C28 | <10.0  | 10.0            | 08/25/2015 | ND              | 198 | 98.8       | 200           | 1.17 |           |

Surrogate: 1-Chlorooctane 82.8 % 47.2-157

Surrogate: 1-Chlorooctadecane 78.2 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

|     |  |
|-----|--|
| 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<br>Samples reported on an as received basis (wet) unless otherwise noted on report |

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Celey D. Keene, Lab Director/Quality Manager

# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

**BILL TO**

**ANALYSIS REQUEST**

P.O. #:

Company: COG Operating LLC

Attn: Robert McNeill

Address: 600 W Illinois

City: Midland

State: TX Zip: 79701

Phone #: (432) 221-0388

Fax #:

Company Name: COG Operating LLC

Project Manager: Lupe Carrasco

Address: 2208 West Main

City: Artesia

Phone #: (575) 748-6940

Project #:

Project Name: Statelcom #1

Project Location:

Sampler Name: Lupe Carrasco

FOR LAB USE ONLY

Lab I.D. Sample I.D.

H50222D

28' 28' 34' 37' 41' 41'

(G)RAB OR (C)OMP.

# CONTAINERS

GROUNDWATER

WASTEWATER

SOIL

OIL

SLUDGE

OTHER :

ACID/BASE:

ICE / COOL

OTHER :

DATE

TIME

DATE

TIME

DATE

TIME

DATE

TIME

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TIME

DATE

TIME

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Relinquished By:

Relinquished By:

Date: 8/20/15  
Time: 5:00 pm

Received By:

Sample Condition  
☐ Yes ☒ No

CHECKED BY:

Phone Result: ☐ Yes ☐ No Add'l Phone #:

Fax Result: ☐ Yes ☐ No Add'l Fax #:

REMARKS: gcastrasco@concho.com

atruijillo@concho.com

Delivered By: (Circle One)

Sampler - UPS - Bus - Other:

FORM-006 R 2.0

† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476

**From:** [Bratcher, Mike, EMNRD](#)  
**To:** [Cliff Brunson](#)  
**Cc:** [Patterson, Heather, EMNRD](#); [Robert Grubbs](#); [Ken Swinney](#); [Jennifer Gilkey](#); [Kathy Purvis](#)  
**Subject:** RE: COG State 11 Com #1 - Remediation Plan  
**Date:** Tuesday, September 13, 2016 4:03:32 PM

---

RE: COG Operating \* State 11 Com 1 \* 2RP-3182 \* DOR: 7/15/15

Cliff,

Your revised proposal for remediation of the above referenced release is approved. Please advise once remedial activities have been scheduled.

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations.

If you have any questions or concerns, and for notification, please contact me.

**Mike Bratcher**  
**NMOCD District 2**  
**811 S. First Street**  
**Artesia, NM 88210**  
**O: 575-748-1283 X108**  
**C: 575-626-0857**  
**F: 575-748-9720**

---

**From:** Cliff Brunson [mailto:[cbrunson@bbcinternational.com](mailto:cbrunson@bbcinternational.com)]  
**Sent:** Thursday, September 08, 2016 8:21 PM  
**To:** Bratcher, Mike, EMNRD  
**Cc:** Patterson, Heather, EMNRD; Robert Grubbs; Ken Swinney; Jennifer Gilkey; Kathy Purvis  
**Subject:** FW: COG State 11 Com #1 - Remediation Plan

Mike,

I have attached an amended remediation plan for the COG State 11 Com #1 release per our discussion last week. The excavation will now be 15 feet deep on the south half depicted by S1 and B1 and 8 feet in the north half depicted by S2 and B2. This will address the BTEX concerns that you had expressed. If you would please reply back via e-mail with your concurrence on this amended plan, it would be greatly appreciated.

Thanks, Cliff

Cliff P. Brunson, CEI, CRS  
President  
BBC International, Inc.

World-Wide Environmental Specialists  
Mailing Address:  
P. O. Box 805  
Hobbs, NM 88241-0805 USA  
Shipping Address:  
1324 W. Marland St.  
Hobbs, NM 88240 USA  
Phone: (575) 397-6388  
Fax: (575) 397-0397  
E-Mail: [cbrunson@bbcinternational.com](mailto:cbrunson@bbcinternational.com)



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---

**From:** Cliff Brunson [<mailto:cbrunson@bbcinternational.com>]  
**Sent:** Monday, July 11, 2016 5:27 PM  
**To:** Mike Bratcher <[mike.bratcher@state.nm.us](mailto:mike.bratcher@state.nm.us)>  
**Cc:** Robert Grubbs ([RGrubbs@concho.com](mailto:RGrubbs@concho.com)) <[RGrubbs@concho.com](mailto:RGrubbs@concho.com)>; Heather Patterson <[heather.patterson@state.nm.us](mailto:heather.patterson@state.nm.us)>; Ken Swinney <[kswinney@bbcinternational.com](mailto:kswinney@bbcinternational.com)>; Jennifer Gilkey <[jgilkey@bbcinternational.com](mailto:jgilkey@bbcinternational.com)>; Kathy Purvis <[kathy@bbcinternational.com](mailto:kathy@bbcinternational.com)>  
**Subject:** COG State 11 Com #1 - Remediation Plan

Mike,

This e-mail is to confirm our discussion concerning the remediation plan for the COG State 11 Com #1 release. I have attached the information packet that we used in our discussion with a cover page describing the remediation plan that we agreed upon.

If you would please reply back via e-mail with your concurrence on this plan, it would be greatly appreciated.

Thanks, Cliff

Cliff P. Brunson, CEI, CRS  
President  
BBC International, Inc.  
World-Wide Environmental Specialists  
Mailing Address:  
P. O. Box 805  
Hobbs, NM 88241-0805 USA  
Shipping Address:  
1324 W. Marland St.  
Hobbs, NM 88240 USA

Phone: (575) 397-6388

Fax: (575) 397-0397

E-Mail: [cbrunson@bbcinternational.com](mailto:cbrunson@bbcinternational.com)

\*\*\*\*\*

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\*\*\*\*\*

**From:** [Groves, Amber](#)  
**To:** [Cliff Brunson](#)  
**Cc:** [Robert Grubbs](#); [Ken Swinney](#); [Jennifer Gilkey](#); [Kathy Purvis](#)  
**Subject:** RE: COG State 11 Com #1 - Remediation Plan  
**Date:** Thursday, September 15, 2016 10:03:56 AM  
**Attachments:** [image002.png](#)  
[image001.png](#)

---

Cliff,

I will concur with NMOCD on work plan approval.

Thank you,

**Amber Groves**

*Remediation Specialist*

*Field Operations Division*

(575)392-3697

(575)263-3209 cell

New Mexico State Land Office

2827 N. Dal Paso Suite 117

Hobbs, NM 88260

.....  
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---

**From:** Cliff Brunson [mailto:cbrunson@bbcinternational.com]  
**Sent:** Thursday, September 08, 2016 8:27 PM  
**To:** Groves, Amber <agroves@slo.state.nm.us>  
**Cc:** Robert Grubbs <RGrubbs@concho.com>; Ken Swinney <kswinney@bbcinternational.com>; Jennifer Gilkey <jgilkey@bbcinternational.com>; Kathy Purvis <kathy@bbcinternational.com>  
**Subject:** FW: COG State 11 Com #1 - Remediation Plan

Amber,

I have attached an amended remediation plan for the COG State 11 Com #1 release. Mike Bratcher has approved this amended plan since he had concern over the BTEX levels when it was first proposed to have a shallower excavation with a liner. Now, there will be no liner and a much deeper excavation to remove the BTEX. The excavation will now be 15 feet deep on the south half depicted by S1 and B1 and 8 feet in the north half depicted by S2 and B2. This will address the BTEX concerns



that the OCD had expressed. If you would please reply back via e-mail with your concurrence on this amended plan, it would be greatly appreciated.

Thanks, Cliff

Cliff P. Brunson, CEI, CRS  
President  
BBC International, Inc.  
World-Wide Environmental Specialists  
Mailing Address:  
P. O. Box 805  
Hobbs, NM 88241-0805 USA  
Shipping Address:  
1324 W. Marland St.  
Hobbs, NM 88240 USA  
Phone: (575) 397-6388  
Fax: (575) 397-0397  
E-Mail: [cbrunson@bbcinternational.com](mailto:cbrunson@bbcinternational.com)



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\*\*\*\*\*

---

**From:** Cliff Brunson [<mailto:cbrunson@bbcinternational.com>]  
**Sent:** Monday, July 11, 2016 5:50 PM  
**To:** Amber Groves <[agroves@slo.state.nm.us](mailto:agroves@slo.state.nm.us)>  
**Cc:** Robert Grubbs ([RGrubbs@concho.com](mailto:RGrubbs@concho.com)) <[RGrubbs@concho.com](mailto:RGrubbs@concho.com)>; Ken Swinney <[kswinney@bbcinternational.com](mailto:kswinney@bbcinternational.com)>; Jennifer Gilkey <[jgilkey@bbcinternational.com](mailto:jgilkey@bbcinternational.com)>; Kathy Purvis <[kathy@bbcinternational.com](mailto:kathy@bbcinternational.com)>  
**Subject:** COG State 11 Com #1 - Remediation Plan

Amber,

This e-mail is to confirm our discussion concerning the remediation plan for the COG State 11 Com #1 release. I have attached the information packet that we used in our discussion with a cover page describing the remediation plan that we agreed upon.

If you would please reply back via e-mail with your concurrence on this plan, it would be greatly appreciated.

Thanks, Cliff

Cliff P. Brunson, CEI, CRS  
President  
BBC International, Inc.  
World-Wide Environmental Specialists  
Mailing Address:  
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Hobbs, NM 88241-0805 USA  
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