

## SITE INFORMATION

### Report Type: Closure Report 1RP-4743

#### General Site Information:

|                             |                                                                                                                                                                                                                                                                                |         |       |              |  |  |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------|--------------|--|--|
| Site:                       | Airacuda Federal #2H                                                                                                                                                                                                                                                           |         |       |              |  |  |
| Company:                    | COG Operating LLC                                                                                                                                                                                                                                                              |         |       |              |  |  |
| Section, Township and Range | Unit B                                                                                                                                                                                                                                                                         | Sec. 31 | T 25S | R 33E        |  |  |
| Lease Number:               | API No. 30-025-40407                                                                                                                                                                                                                                                           |         |       |              |  |  |
| County:                     | Lea County                                                                                                                                                                                                                                                                     |         |       |              |  |  |
| GPS:                        | 32.65821° N                                                                                                                                                                                                                                                                    |         |       | 103.63804° W |  |  |
| Surface Owner:              | Federal                                                                                                                                                                                                                                                                        |         |       |              |  |  |
| Mineral Owner:              |                                                                                                                                                                                                                                                                                |         |       |              |  |  |
| Directions:                 | From the intersection of Hwy 128 and CR 1 in rural Lea County, travel south on CR 1 for 8.40 mi, turn east onto lease road and continue for 2.70 mi and turn southeast onto lease road for 1.20 mi, turn north onto lease road for 0.25 mi, turn west for 0.10 mi to location. |         |       |              |  |  |
|                             |                                                                                                                                                                                                                                                                                |         |       |              |  |  |
|                             |                                                                                                                                                                                                                                                                                |         |       |              |  |  |
|                             |                                                                                                                                                                                                                                                                                |         |       |              |  |  |
|                             |                                                                                                                                                                                                                                                                                |         |       |              |  |  |

#### Release Data:

|                          |             |
|--------------------------|-------------|
| Date Released:           | 6/23/2017   |
| Type Release:            | Oil         |
| Source of Contamination: | Sight Glass |
| Fluid Released:          | 42 bbls     |
| Fluids Recovered:        | 15 bbls     |

#### Official Communication:

|               |                                                                              |                                                                            |
|---------------|------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| Name:         | Robert McNeil                                                                | Ike Tavaréz                                                                |
| Company:      | COG Operating, LLC                                                           | Tetra Tech                                                                 |
| Address:      | One Concho Center                                                            | 4000 N. Big Spring                                                         |
|               | 600 W. Illinois Ave.                                                         | Ste 401                                                                    |
| City:         | Midland Texas, 79701                                                         | Midland, Texas                                                             |
| Phone number: | (432) 683-7443                                                               | (432) 687-8110                                                             |
| Fax:          | (432) 684-7137                                                               |                                                                            |
| Email:        | <a href="mailto:rmcneil@conchoresources.com">rmcneil@conchoresources.com</a> | <a href="mailto:Ike.Tavaréz@tetrattech.com">Ike.Tavaréz@tetrattech.com</a> |

#### Ranking Criteria

| Depth to Groundwater:                     | Ranking Score | Site Data |
|-------------------------------------------|---------------|-----------|
| <50 ft                                    | 20            |           |
| 50-99 ft                                  | 10            |           |
| >100 ft.                                  | 0             | 225'-250' |
| WellHead Protection:                      | Ranking Score | Site Data |
| Water Source <1,000 ft., Private <200 ft. | 20            |           |
| Water Source >1,000 ft., Private >200 ft. | 0             | 0         |
| Surface Body of Water:                    | Ranking Score | Site Data |
| <200 ft.                                  | 20            |           |
| 200 ft - 1,000 ft.                        | 10            |           |
| >1,000 ft.                                | 0             | 0         |
| <b>Total Ranking Score:</b>               |               | <b>0</b>  |

| Acceptable Soil RRAL (mg/kg) |            |       |
|------------------------------|------------|-------|
| Benzene                      | Total BTEX | TPH   |
| 10                           | 50         | 5,000 |



September 21, 2017

Ms. Olivia Yu  
Environmental Engineer Specialist  
Oil Conservation Division, District 1  
1625 North French Drive  
Hobbs, New Mexico 88240

**Re: Closure Report for the COG Operating LLC, Airacuda Federal #2H, Unit B, Section 31, Township 25 South, Range 33 East, Lea County, New Mexico. 1RP-4743**

Ms. Yu:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC., (COG) to prepare a closure report for a spill at the Airacuda Federal #2H, Unit B, Section 31, Township 25 South, Range 33 East, Lea County, New Mexico. The spill site coordinates are N 32.0934601 °, W 103.609169 °. The site location is shown on Figures 1 and 2.

## **Background**

According to the State of New Mexico C-141 Initial Report, the release was discovered on June 23, 2017, and released approximately forty two (42) barrels of oil due to a broken sight glass. A vacuum truck was used to remove the freestanding fluids, recovering approximately fifteen (15) barrels of oil. The release occurred within a lined facility and had an over spray in the adjacent pasture. The overspray area measured approximately 100' x 110'. The initial C-141 Form is included in Appendix A.

## **Groundwater**

No water wells were listed within Section 31 on the New Mexico Office of the State Engineer's website. According to the Chevron Texaco Groundwater Trend map, the average depth to groundwater in this area is between 225' and 250' below surface. The groundwater data is shown in Appendix B.

## **Regulatory**

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, dated August 13, 1993. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum



hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the depth to groundwater, the proposed RRAL for TPH is 5,000 mg/kg.

### Soil Assessment and Analytical Results

On July 11, 2017, COG personnel were onsite to evaluate and sample the overspray area in the pasture. Two (2) sample trenches (T-1 and T-2) were installed in the area to 5.0'-6.0' below surface, as well as four (4) sample trenches (North, South, East, and West) in order to evaluate the horizontal extents. All samples were analyzed for TPH analysis by EPA Method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The results of the sampling are summarized in Table 1. The trench locations are shown in Figure 3.

Referring to Table 1, all of the samples collected at trenches (T-1, T-2, North, South, East, and West) showed benzene, total BTEX, or TPH concentrations below the RRAL's. Additionally, none of the samples collected showed elevated chloride, with concentrations ranging between 25.4 mg/kg and <4.88 mg/kg.

### Conclusion

Based on the laboratory results, COG requests closure of this spill issue. The final C-141 is enclosed in Appendix A. If you have any questions or comments concerning the assessment activities for this site, please call me at (432) 682-4559.

Respectfully submitted,  
TETRA TECH

A handwritten signature in blue ink, appearing to read 'Ike Tavarez'.

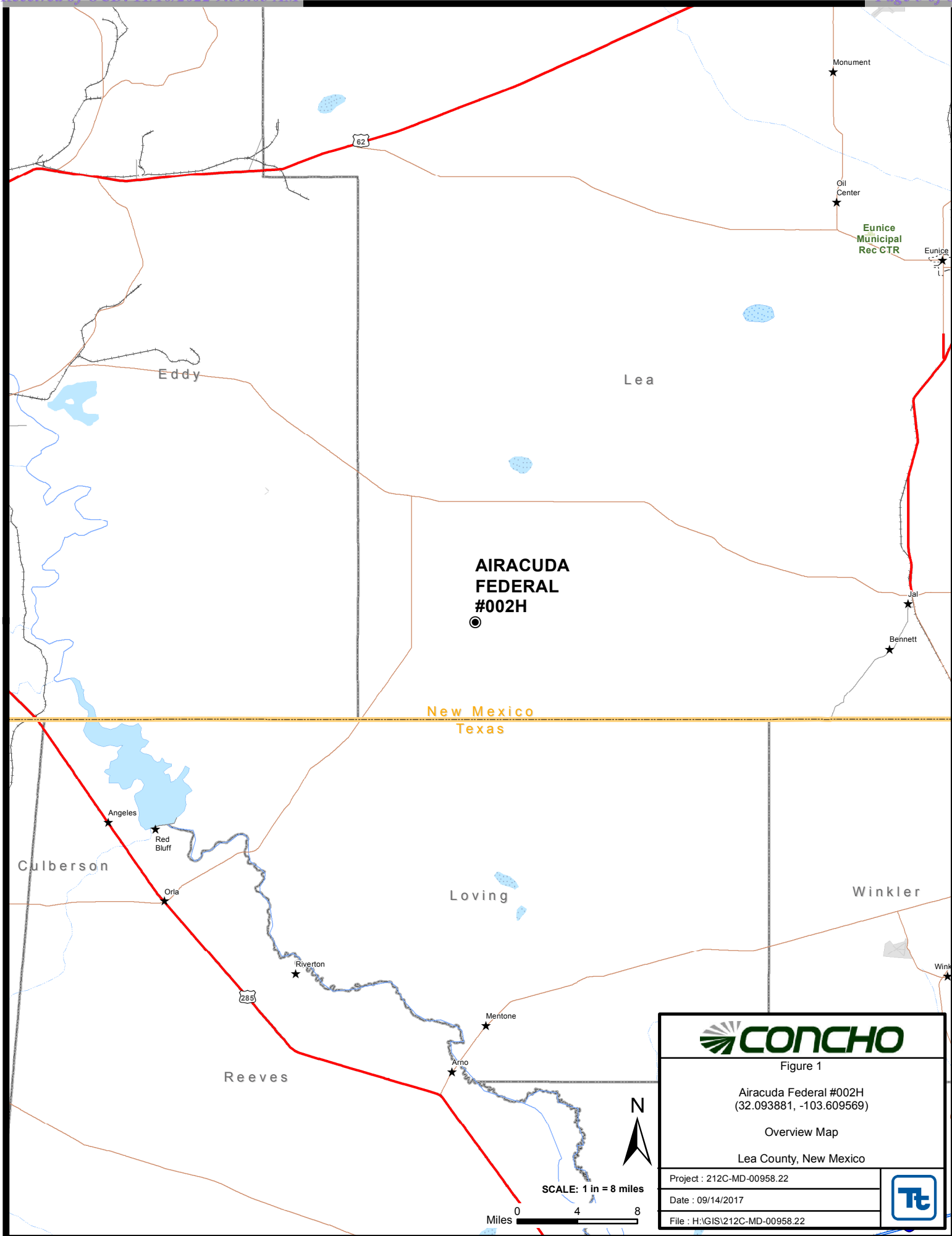
Ike Tavarez, PG  
Senior Project Manager

A handwritten signature in blue ink, appearing to read 'Clair Gonzales'.

Clair Gonzales,  
Geologist I

cc: Robert McNeill – COG  
Dakota Neel – COG  
Shelly Tucker – BLM

## Figures







# Tables

**Table 1**  
**COG Operating LLC.**  
**Airacuda Federal #2H**  
**Lea County, New Mexico**

| Sample ID    | Sample Date | Sample Depth (ft) | Soil Status |         | TPH (mg/kg) |         |         |       | Benzene (mg/kg) | Toluene (mg/kg) | Ethylbenzene (mg/kg) | Xylene (mg/kg) | Total BTEX (mg/kg) | Chloride (mg/kg) |
|--------------|-------------|-------------------|-------------|---------|-------------|---------|---------|-------|-----------------|-----------------|----------------------|----------------|--------------------|------------------|
|              |             |                   | In-Situ     | Removed | C6-C10      | C10-C28 | C28-C35 | Total |                 |                 |                      |                |                    |                  |
| <b>T-1</b>   | 7/11/2017   | Surface           | X           |         | <15.0       | <15.0   | <15.0   | <15.0 | <0.00200        | <0.00200        | <0.00200             | <0.00200       | <0.00200           | 25.4             |
|              | "           | 1                 | X           |         | <15.0       | 27.9    | <15.0   | 27.9  | <0.00199        | <0.00199        | <0.00199             | <0.00199       | <0.00199           | 6.83             |
|              | "           | 2                 | X           |         | <15.0       | <15.0   | <15.0   | <15.0 | <0.00198        | <0.00198        | <0.00198             | <0.00198       | <0.00198           | 5.26             |
|              | "           | 3                 | X           |         | <15.0       | <15.0   | <15.0   | <15.0 | <0.00201        | <0.00201        | <0.00201             | <0.00201       | <0.00201           | 6.49             |
|              | "           | 4                 | X           |         | <15.0       | <15.0   | <15.0   | <15.0 | <0.00200        | <0.00200        | <0.00200             | <0.00200       | <0.00200           | <5.00            |
|              | "           | 6                 | X           |         | <15.0       | <15.0   | <15.0   | <15.0 | <0.00200        | <0.00200        | <0.00200             | <0.00200       | <0.00200           | 7.75             |
| <b>T-2</b>   | 7/11/2017   | Surface           | X           |         | <15.0       | <15.0   | <15.0   | <15.0 | <0.00201        | <0.00201        | <0.00201             | <0.00201       | <0.00201           | <4.88            |
|              | "           | 1                 | X           |         | <14.9       | <14.9   | <14.9   | <14.9 | <0.00199        | <0.00199        | <0.00199             | <0.00199       | <0.00199           | <4.95            |
|              | "           | 2                 | X           |         | <15.0       | <15.0   | <15.0   | <15.0 | <0.00199        | <0.00199        | <0.00199             | <0.00199       | <0.00199           | 7.69             |
|              | "           | 3                 | X           |         | <15.0       | <15.0   | <15.0   | <15.0 | <0.00200        | <0.00200        | <0.00200             | <0.00200       | <0.00200           | 5.60             |
|              | "           | 4                 | X           |         | <15.0       | <15.0   | <15.0   | <15.0 | <0.00200        | <0.00200        | <0.00200             | <0.00200       | <0.00200           | <4.92            |
|              | "           | 5                 | X           |         | <15.0       | <15.0   | <15.0   | <15.0 | <0.00201        | <0.00201        | <0.00201             | <0.00201       | <0.00201           | <4.97            |
| <b>North</b> | 7/11/2017   | Surface           | X           |         | <15.0       | <15.0   | <15.0   | <15.0 | <0.00198        | <0.00198        | <0.00198             | <0.00198       | <0.00198           | 6.65             |
|              | "           | 1                 | X           |         | <14.9       | <14.9   | <14.9   | <14.9 | <0.00201        | <0.00201        | <0.00201             | <0.00201       | <0.00201           | <5.00            |
| <b>South</b> | 7/11/2017   | Surface           | X           |         | <14.9       | <14.9   | <14.9   | <14.9 | <0.00202        | <0.00202        | <0.00202             | <0.00202       | <0.00202           | 5.00             |
|              | "           | 1                 | X           |         | <15.0       | <15.0   | <15.0   | <15.0 | <0.00200        | <0.00200        | <0.00200             | <0.00200       | <0.00200           | <5.02            |
| <b>East</b>  | 7/11/2017   | Surface           | X           |         | <15.0       | <15.0   | <15.0   | <15.0 | <0.00199        | <0.00199        | <0.00199             | <0.00199       | <0.00199           | 6.39             |
|              | "           | 1                 | X           |         | <15.0       | 18.0    | <15.0   | 18.0  | <0.00152        | <0.00198        | <0.00198             | <0.00198       | <0.00198           | 11.2             |
| <b>West</b>  | 7/11/2017   | Surface           | X           |         | 29.2        | 16.0    | <15.0   | 45.2  | <0.00341        | <0.00341        | 0.00527              | 0.00498        | 0.0551             | <5.02            |
|              | "           | 1                 | X           |         | <15.0       | <15.0   | <15.0   | <15.0 | <0.00200        | <0.00200        | <0.00200             | <0.00200       | <0.00200           | <4.94            |

## Photos

COG Operating LLC  
Airacuda Federal #2H  
Lea County, New Mexico



TETRA TECH



View South of Lined Facility



View South of Lined Facility

## Appendix A

Page 13 of 85  
Received by OCD: 11/10/2022 9:38:03 AM  
Released to Imaging: 11/10/2022 9:41:43 AM

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 OGRID # 229137   | Contact: Robert McNeill     |                      |
| Address: 600 West Illinois Avenue, Midland TX 79701 | Telephone No. 432-683-7443  |                      |
| Facility Name: Airacuda Federal #002H               | Facility Type: Tank Battery |                      |
| Surface Owner: Federal                              | Mineral Owner: Federal      | API No. 30-025-40407 |

LOCATION OF RELEASE

|                  |               |                 |              |                      |                           |                       |                        |               |
|------------------|---------------|-----------------|--------------|----------------------|---------------------------|-----------------------|------------------------|---------------|
| Unit Letter<br>B | Section<br>31 | Township<br>25S | Range<br>33E | Feet from the<br>330 | North/South Line<br>North | Feet from the<br>1980 | East/West Line<br>East | County<br>Lea |
|------------------|---------------|-----------------|--------------|----------------------|---------------------------|-----------------------|------------------------|---------------|

Latitude 32.0934601 Longitude -103.609169

NATURE OF RELEASE

|                                                                                                                                          |                                                        |                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------|
| Type of Release:<br>Oil                                                                                                                  | Volume of Release:<br>42 bbls                          | Volume Recovered:<br>15 bbls                          |
| Source of Release:<br>Sight Glass                                                                                                        | Date and Hour of Occurrence:<br>June 23, 2017 10:00 am | Date and Hour of Discovery:<br>June 23, 2017 10:00 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>Ms. Yu - NMOCD / Ms. Tucker - BLM  |                                                       |
| By Whom? Rebecca Haskell                                                                                                                 | Date and Hour: June 23, 2017 1:41 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.\*

**RECEIVED**

By Olivia Yu at 1:26 pm, Jul 03, 2017

Describe Cause of Problem and Remedial Action Taken.\*

The release was due to a broken sight glass on a heater treater. The sight glass was replaced.

Describe Area Affected and Cleanup Action Taken.\*

The release occurred within the lined facility with overspray in the adjacent pasture. A vacuum truck was dispatched to remove all freestanding fluids. The gravel and remaining oil will be taken to disposal. Concho will have the spill area evaluated for any possible impact from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation activities.

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

|                                         |                                                                                                                                                              |                                   |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| Signature: <i>Rebecca Haskell</i>       | <b>OIL CONSERVATION DIVISION</b>                                                                                                                             |                                   |
| Printed Name: Rebecca Haskell           | Approved by Environmental Specialist: <i>by</i>                                                                                                              |                                   |
| Title: Senior HSE Coordinator           | Approval Date: 7/3/2017                                                                                                                                      | Expiration Date:                  |
| E-mail Address: rhaskell@concho.com     | Conditions of Approval:                                                                                                                                      | Attached <input type="checkbox"/> |
| Date: June 26, 2017 Phone: 432-683-7443 | Please inspect liner in question. Provide NMOCD with a concise report of the inspection with affirmation the liner has and will continue to contain liquids. |                                   |
| Attach Additional Sheets If Necessary   | NMOCD requests confirmatory laboratory analyses of discrete soil samples from impacted pasture area.                                                         |                                   |

1RP-4743

nOY1718449237

pOY1718449915

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, 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 October 10, 2003

Submit 2 Copies to appropriate  
District Office in accordance  
with Rule 116 on back  
side of form

## Release Notification and Corrective Action

### OPERATOR

☐ Initial Report ☒ Final Report

|                                                            |                                     |
|------------------------------------------------------------|-------------------------------------|
| Name of Company <b>COG Operating LLC</b>                   | Contact <b>Robert McNeil</b>        |
| Address <b>600 West Illinois Ave. Midland, Texas 79701</b> | Telephone No. <b>(432) 683-7443</b> |
| Facility Name: <b>Airacuda Federal #2H</b>                 | Facility Type <b>Tank Battery</b>   |
| Surface Owner: Federal                                     | Mineral Owner:                      |
| API No. 30-025-40407                                       |                                     |

### LOCATION OF RELEASE

|                  |               |                 |              |                      |                           |                       |                        |               |
|------------------|---------------|-----------------|--------------|----------------------|---------------------------|-----------------------|------------------------|---------------|
| Unit Letter<br>B | Section<br>31 | Township<br>25S | Range<br>33E | Feet from the<br>330 | North/South Line<br>North | Feet from the<br>1980 | East/West Line<br>East | County<br>Lea |
|------------------|---------------|-----------------|--------------|----------------------|---------------------------|-----------------------|------------------------|---------------|

Latitude N 32.0934601° Longitude W 103.609169°

### NATURE OF RELEASE

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                      |                                                                                         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|-----------------------------------------------------------------------------------------|
| Type of Release: Oil                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Volume of Release 42 bbls                            | Volume Recovered: 15 bbls                                                               |
| Source of Release: Sight Glass                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Date and Hour of Occurrence<br>June 23, 2017 10:00am | Date and Hour of Discovery<br>June 23, 2017 10:00am                                     |
| Was Immediate Notice Given?<br><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | If YES, To Whom?<br>MS. Yu-NMOCD/ Ms. Tucker-BLM     |                                                                                         |
| By Whom? Rebecca Haskell                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Date and Hour June 23, 2017 1:41 p.m.                |                                                                                         |
| Was a Watercourse Reached?<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | If YES, Volume Impacting the Watercourse.<br>N/A     |                                                                                         |
| If a Watercourse was Impacted, Describe Fully.*<br><br>N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                      |                                                                                         |
| Describe Cause of Problem and Remedial Action Taken.*<br><br>The release occurred due to a broken sight glass on a heater treater. The sight glass was replaced. The release occurred within the lined facility and oversprayed into the adjacent pasture. A vacuum truck was used to remove all freestanding fluids.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                      |                                                                                         |
| Describe Area Affected and Cleanup Action Taken.*<br><br>The site was inspected and soil samples were collected to define the spills extent. None of the samples collected showed elevated benzene, total BTEX, TPH or chloride concentrations. Tetra Tech prepared a closure report and submitted to NMOCD for review.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                      |                                                                                         |
| I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. |                                                      |                                                                                         |
| Signature:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                      | OIL CONSERVATION DIVISION<br><br>Approved by District Supervisor: <i>Ashley Maxwell</i> |
| Printed Name: Ike Tavaréz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                      |                                                                                         |
| Title: Project Manager                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Approval Date: 11/10/2022                            | Expiration Date:                                                                        |
| E-mail Address: Ike.Tavaréz@TetraTech.com                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Conditions of Approval:                              |                                                                                         |
| Date: 09/13/17                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Phone: (432) 682-4559                                | Attached <input type="checkbox"/>                                                       |

\* Attach Additional Sheets If Necessary

## Appendix B

**Water Well Data**  
**Average Depth to Groundwater (ft)**  
**COG - Airacuda Federal #2H**  
**Lea County, New Mexico**

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

| 24 South |    |      | 33 East |    |    |
|----------|----|------|---------|----|----|
| 6        | 5  | 4    | 3       | 2  | 1  |
| 7        | 8  | 9    | 10      | 11 | 12 |
| 18       | 17 | 16   | 15      | 14 | 13 |
| 19       | 20 | 21   | 22      | 23 | 24 |
| 30       | 29 | 28   | 27      | 26 | 25 |
| 31       | 32 | 33   | 34      | 35 | 36 |
|          |    | 93.2 |         |    |    |

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

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

| 25 South |    |    | 33 East |     |    |
|----------|----|----|---------|-----|----|
| 6        | 5  | 4  | 3       | 172 | 2  |
| 7        | 8  | 9  | 10      | 11  | 12 |
| 18       | 17 | 16 | 15      | 14  | 13 |
| 19       | 20 | 21 | 22      | 23  | 24 |
| 30       | 29 | 28 | 27      | 26  | 25 |
| 31       | 32 | 33 | 34      | 35  | 36 |
|          |    |    | 125     |     |    |

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

| 26 South |    |    | 32 East |    |    |
|----------|----|----|---------|----|----|
| 6        | 5  | 4  | 3       | 2  | 1  |
| 7        | 8  | 9  | 10      | 11 | 12 |
| 18       | 17 | 16 | 15      | 14 | 13 |
| 19       | 20 | 21 | 333     | 22 | 23 |
| 30       | 29 | 28 | 27      | 26 | 25 |
| 31       | 32 | 33 | 34      | 35 | 36 |
| 295      |    |    |         |    |    |

| 26 South |    |    | 33 East |     |    |
|----------|----|----|---------|-----|----|
| 6        | 5  | 4  | 3       | 175 | 2  |
| 7        | 8  | 9  | 10      | 11  | 12 |
| 18       | 17 | 16 | 15      | 14  | 13 |
| 19       | 20 | 21 | 22      | 23  | 24 |
| 30       | 29 | 28 | 27      | 26  | 25 |
| 31       | 32 | 33 | 34      | 35  | 36 |
|          |    |    | 125     |     |    |

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

**88** New Mexico State Engineers Well Reports

**105** USGS Well Reports

**90** Geology and Groundwater Conditions in Southern Lea, County, NM (Report 6)

Geology and Groundwater Resources of Eddy County, NM (Report 3)

**34** NMOCD - Groundwater Data

**123** Tetra Tech installed temporary wells and field water level

**143** NMOCD Groundwater map well location



## New Mexico Office of the State Engineer

# Water Column/Average Depth to Water

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

(R=POD has been replaced,

O=orphaned,

C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest) (NAD83 UTM in meters)

(In feet)

| POD Number                        | POD Code | Sub-basin | County | Q 64 | Q 16 | Q 4 | Sec | Tw  | Rng | X      | Y        | DepthWell | DepthWater | Water Column |
|-----------------------------------|----------|-----------|--------|------|------|-----|-----|-----|-----|--------|----------|-----------|------------|--------------|
| <a href="#">C 02312</a>           |          |           | LE     | 1    | 2    | 1   | 05  | 25S | 33E | 632241 | 3559687* | 150       | 90         | 60           |
| <a href="#">C 02313</a>           |          |           | LE     | 2    | 3    | 3   | 26  | 25S | 33E | 636971 | 3552098* | 150       | 110        | 40           |
| <a href="#">C 02373 CLW317846</a> | O        |           | LE     | 2    | 1    | 1   | 13  | 25S | 33E | 638518 | 3556544* | 625       | 185        | 440          |
| <a href="#">C 02373 S</a>         |          |           | LE     | 1    | 2    | 1   | 13  | 25S | 33E | 638721 | 3556549* | 625       | 185        | 440          |
| Average Depth to Water:           |          |           |        |      |      |     |     |     |     |        |          |           | 142 feet   |              |
| Minimum Depth:                    |          |           |        |      |      |     |     |     |     |        |          |           | 90 feet    |              |
| Maximum Depth:                    |          |           |        |      |      |     |     |     |     |        |          |           | 185 feet   |              |

Record Count: 4

PLSS Search:

Township: 25S Range: 33E

\*UTM location was derived from PLSS - see Help

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

9/13/17 11:25 AM

WATER COLUMN/ AVERAGE DEPTH TO WATER

## Appendix C



# Certificate of Analysis Summary 557823

COG Operating LLC, Artesia, NM

Project Name: Airacuda 31 Fed BTY



Project Id:

Contact: Aaron Lieb

Project Location: Airacuda 31 Fed B

Date Received in Lab: Mon Jul-17-17 11:45 am

Report Date: 25-JUL-17

Project Manager: Kelsey Brooks

| <i>Analysis Requested</i>                | <i>Lab Id:</i>    | 557823-001       | 557823-002       | 557823-003       | 557823-004       | 557823-005       | 557823-006       |
|------------------------------------------|-------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|                                          | <i>Field Id:</i>  | T1-Surface       | T1-1'            | T1-2'            | T1-3'            | T1-4'            | T1-5'            |
|                                          | <i>Depth:</i>     |                  | 1- ft            | 2- ft            | 3- ft            | 4- ft            | 6- ft            |
|                                          | <i>Matrix:</i>    | SOIL             | SOIL             | SOIL             | SOIL             | SOIL             | SOIL             |
|                                          | <i>Sampled:</i>   | Jul-11-17 10:00  | Jul-11-17 10:00  | Jul-11-17 10:00  | Jul-11-17 10:00  | Jul-11-17 10:00  | Jul-11-17 10:00  |
| <b>BTEX by EPA 8021B</b>                 | <i>Extracted:</i> | Jul-21-17 14:00  | Jul-21-17 14:00  | Jul-21-17 14:00  | Jul-21-17 14:00  | Jul-21-17 14:00  | Jul-21-17 14:00  |
|                                          | <i>Analyzed:</i>  | Jul-21-17 20:19  | Jul-21-17 20:38  | Jul-21-17 20:57  | Jul-21-17 21:15  | Jul-21-17 21:34  | Jul-21-17 21:53  |
|                                          | <i>Units/RL:</i>  | mg/kg RL         | mg/kg RL         | mg/kg RL         | mg/kg RL         | mg/kg RL         | mg/kg RL         |
| Benzene                                  |                   | <0.00200 0.00200 | <0.00199 0.00199 | <0.00198 0.00198 | <0.00201 0.00201 | <0.00200 0.00200 | <0.00200 0.00200 |
| Toluene                                  |                   | <0.00200 0.00200 | <0.00199 0.00199 | <0.00198 0.00198 | <0.00201 0.00201 | <0.00200 0.00200 | <0.00200 0.00200 |
| Ethylbenzene                             |                   | <0.00200 0.00200 | <0.00199 0.00199 | <0.00198 0.00198 | <0.00201 0.00201 | <0.00200 0.00200 | <0.00200 0.00200 |
| m,p-Xylenes                              |                   | <0.00401 0.00401 | <0.00398 0.00398 | <0.00396 0.00396 | <0.00402 0.00402 | <0.00399 0.00399 | <0.00401 0.00401 |
| o-Xylene                                 |                   | <0.00200 0.00200 | <0.00199 0.00199 | <0.00198 0.00198 | <0.00201 0.00201 | <0.00200 0.00200 | <0.00200 0.00200 |
| Total Xylenes                            |                   | <0.00200 0.00200 | <0.00199 0.00199 | <0.00198 0.00198 | <0.00201 0.00201 | <0.00200 0.00200 | <0.00200 0.00200 |
| Total BTEX                               |                   | <0.00200 0.00200 | <0.00199 0.00199 | <0.00198 0.00198 | <0.00201 0.00201 | <0.00200 0.00200 | <0.00200 0.00200 |
| <b>Inorganic Anions by EPA 300/300.1</b> | <i>Extracted:</i> | Jul-21-17 17:00  | Jul-21-17 17:00  | Jul-21-17 17:00  | Jul-21-17 17:00  | Jul-21-17 17:00  | Jul-21-17 17:00  |
|                                          | <i>Analyzed:</i>  | Jul-22-17 04:22  | Jul-22-17 04:45  | Jul-22-17 04:53  | Jul-22-17 05:00  | Jul-22-17 05:08  | Jul-22-17 05:31  |
|                                          | <i>Units/RL:</i>  | mg/kg RL         | mg/kg RL         | mg/kg RL         | mg/kg RL         | mg/kg RL         | mg/kg RL         |
| Chloride                                 |                   | 25.4 5.01        | 6.83 4.89        | 5.26 4.89        | 6.49 4.93        | <5.00 5.00       | 7.75 4.90        |
| <b>TPH By SW8015 Mod</b>                 | <i>Extracted:</i> | Jul-19-17 18:00  | Jul-19-17 18:00  | Jul-19-17 18:00  | Jul-19-17 18:00  | Jul-19-17 18:00  | Jul-19-17 18:00  |
|                                          | <i>Analyzed:</i>  | Jul-20-17 04:13  | Jul-20-17 05:16  | Jul-20-17 05:37  | Jul-20-17 05:59  | Jul-20-17 06:20  | Jul-20-17 06:41  |
|                                          | <i>Units/RL:</i>  | mg/kg RL         | mg/kg RL         | mg/kg RL         | mg/kg RL         | mg/kg RL         | mg/kg RL         |
| Gasoline Range Hydrocarbons (GRO)        |                   | <15.0 15.0       | <15.0 15.0       | <15.0 15.0       | <15.0 15.0       | <15.0 15.0       | <15.0 15.0       |
| Diesel Range Organics (DRO)              |                   | <15.0 15.0       | 27.9 15.0        | <15.0 15.0       | <15.0 15.0       | <15.0 15.0       | <15.0 15.0       |
| Oil Range Hydrocarbons (ORO)             |                   | <15.0 15.0       | <15.0 15.0       | <15.0 15.0       | <15.0 15.0       | <15.0 15.0       | <15.0 15.0       |
| Total TPH                                |                   | <15.0 15.0       | 27.9 15.0        | <15.0 15.0       | <15.0 15.0       | <15.0 15.0       | <15.0 15.0       |

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Kelsey Brooks  
Project Manager



# Certificate of Analysis Summary 557823

COG Operating LLC, Artesia, NM

Project Name: Airacuda 31 Fed BTY



Project Id:

Contact: Aaron Lieb

Project Location: Airacuda 31 Fed B

Date Received in Lab: Mon Jul-17-17 11:45 am

Report Date: 25-JUL-17

Project Manager: Kelsey Brooks

| <i>Analysis Requested</i>                | <i>Lab Id:</i>    | 557823-007       | 557823-008       | 557823-009       | 557823-010       | 557823-011       | 557823-012       |
|------------------------------------------|-------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|                                          | <i>Field Id:</i>  | T2-Surface       | T2-1'            | T2-2'            | T2-3'            | T2-4'            | T2-6'            |
|                                          | <i>Depth:</i>     |                  | 1- ft            | 2- ft            | 3- ft            | 4- ft            | 6- ft            |
|                                          | <i>Matrix:</i>    | SOIL             | SOIL             | SOIL             | SOIL             | SOIL             | SOIL             |
|                                          | <i>Sampled:</i>   | Jul-11-17 10:00  | Jul-11-17 10:00  | Jul-11-17 10:00  | Jul-11-17 10:00  | Jul-11-17 10:00  | Jul-11-17 10:00  |
| <b>BTEX by EPA 8021B</b>                 | <i>Extracted:</i> | Jul-21-17 14:00  | Jul-21-17 14:00  | Jul-20-17 13:30  | Jul-20-17 13:30  | Jul-20-17 13:30  | Jul-21-17 07:30  |
|                                          | <i>Analyzed:</i>  | Jul-21-17 22:12  | Jul-21-17 22:30  | Jul-20-17 22:03  | Jul-20-17 22:22  | Jul-20-17 22:41  | Jul-21-17 16:31  |
|                                          | <i>Units/RL:</i>  | mg/kg RL         | mg/kg RL         | mg/kg RL         | mg/kg RL         | mg/kg RL         | mg/kg RL         |
| Benzene                                  |                   | <0.00201 0.00201 | <0.00199 0.00199 | <0.00199 0.00199 | <0.00200 0.00200 | <0.00201 0.00201 | <0.00201 0.00201 |
| Toluene                                  |                   | <0.00201 0.00201 | <0.00199 0.00199 | <0.00199 0.00199 | <0.00200 0.00200 | <0.00201 0.00201 | <0.00201 0.00201 |
| Ethylbenzene                             |                   | <0.00201 0.00201 | <0.00199 0.00199 | <0.00199 0.00199 | <0.00200 0.00200 | <0.00201 0.00201 | <0.00201 0.00201 |
| m,p-Xylenes                              |                   | <0.00402 0.00402 | <0.00398 0.00398 | <0.00398 0.00398 | <0.00399 0.00399 | <0.00402 0.00402 | <0.00402 0.00402 |
| o-Xylene                                 |                   | <0.00201 0.00201 | <0.00199 0.00199 | <0.00199 0.00199 | <0.00200 0.00200 | <0.00201 0.00201 | 0.00246 0.00201  |
| Total Xylenes                            |                   | <0.00201 0.00201 | <0.00199 0.00199 | <0.00199 0.00199 | <0.00200 0.00200 | <0.00201 0.00201 | 0.00246 0.00201  |
| Total BTEX                               |                   | <0.00201 0.00201 | <0.00199 0.00199 | <0.00199 0.00199 | <0.00200 0.00200 | <0.00201 0.00201 | 0.00246 0.00201  |
| <b>Inorganic Anions by EPA 300/300.1</b> | <i>Extracted:</i> | Jul-21-17 17:00  | Jul-21-17 17:00  | Jul-21-17 17:00  | Jul-21-17 17:00  | Jul-21-17 17:00  | Jul-21-17 17:00  |
|                                          | <i>Analyzed:</i>  | Jul-22-17 05:39  | Jul-22-17 05:46  | Jul-22-17 05:54  | Jul-22-17 06:02  | Jul-22-17 06:09  | Jul-22-17 06:33  |
|                                          | <i>Units/RL:</i>  | mg/kg RL         | mg/kg RL         | mg/kg RL         | mg/kg RL         | mg/kg RL         | mg/kg RL         |
| Chloride                                 |                   | <4.88 4.88       | <4.95 4.95       | 7.69 5.00        | 5.60 5.03        | <4.92 4.92       | <4.97 4.97       |
| <b>TPH By SW8015 Mod</b>                 | <i>Extracted:</i> | Jul-19-17 18:00  | Jul-19-17 18:00  | Jul-19-17 18:00  | Jul-19-17 18:00  | Jul-19-17 18:00  | Jul-19-17 18:00  |
|                                          | <i>Analyzed:</i>  | Jul-20-17 07:04  | Jul-20-17 07:26  | Jul-20-17 07:48  | Jul-20-17 08:10  | Jul-20-17 09:15  | Jul-20-17 09:37  |
|                                          | <i>Units/RL:</i>  | mg/kg RL         | mg/kg RL         | mg/kg RL         | mg/kg RL         | mg/kg RL         | mg/kg RL         |
| Gasoline Range Hydrocarbons (GRO)        |                   | <15.0 15.0       | <14.9 14.9       | <15.0 15.0       | <15.0 15.0       | <15.0 15.0       | <15.0 15.0       |
| Diesel Range Organics (DRO)              |                   | <15.0 15.0       | <14.9 14.9       | <15.0 15.0       | <15.0 15.0       | <15.0 15.0       | <15.0 15.0       |
| Oil Range Hydrocarbons (ORO)             |                   | <15.0 15.0       | <14.9 14.9       | <15.0 15.0       | <15.0 15.0       | <15.0 15.0       | <15.0 15.0       |
| Total TPH                                |                   | <15.0 15.0       | <14.9 14.9       | <15.0 15.0       | <15.0 15.0       | <15.0 15.0       | <15.0 15.0       |

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Kelsey Brooks  
Project Manager

# Analytical Report 557823

for  
**COG Operating LLC**

**Project Manager: Aaron Lieb**

**Airacuda 31 Fed BTY**

**25-JUL-17**

Collected By: Client



**1211 W. Florida Ave, Midland TX 79701**

Xenco-Houston (EPA Lab code: TX00122):  
Texas (T104704215), Arizona (AZ0765), Florida (E871002), Louisiana (03054)  
Oklahoma (9218)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295)  
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400)  
Xenco-San Antonio: Texas (T104704534)  
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)  
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)



25-JUL-17

Project Manager: **Aaron Lieb**

**COG Operating LLC**

2407 Pecos Avenue

Artesia, NM 88210

Reference: XENCO Report No(s): **557823**

**Airacuda 31 Fed BTY**

Project Address: Airacuda 31 Fed B

**Aaron Lieb:**

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 557823. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 557823 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

A handwritten signature in black ink that reads 'Kelsey Brooks'.

**Kelsey Brooks**

Project Manager

***Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.***

*Certified and approved by numerous States and Agencies.*

*A Small Business and Minority Status Company that delivers SERVICE and QUALITY*

Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America



# Sample Cross Reference 557823



## COG Operating LLC, Artesia, NM

Airacuda 31 Fed BTY

| Sample Id  | Matrix | Date Collected | Sample Depth | Lab Sample Id |
|------------|--------|----------------|--------------|---------------|
| T1-Surface | S      | 07-11-17 10:00 |              | 557823-001    |
| T1-1'      | S      | 07-11-17 10:00 | 1 ft         | 557823-002    |
| T1-2'      | S      | 07-11-17 10:00 | 2 ft         | 557823-003    |
| T1-3'      | S      | 07-11-17 10:00 | 3 ft         | 557823-004    |
| T1-4'      | S      | 07-11-17 10:00 | 4 ft         | 557823-005    |
| T1-5'      | S      | 07-11-17 10:00 | 6 ft         | 557823-006    |
| T2-Surface | S      | 07-11-17 10:00 |              | 557823-007    |
| T2-1'      | S      | 07-11-17 10:00 | 1 ft         | 557823-008    |
| T2-2'      | S      | 07-11-17 10:00 | 2 ft         | 557823-009    |
| T2-3'      | S      | 07-11-17 10:00 | 3 ft         | 557823-010    |
| T2-4'      | S      | 07-11-17 10:00 | 4 ft         | 557823-011    |
| T2-6'      | S      | 07-11-17 10:00 | 6 ft         | 557823-012    |

**CASE NARRATIVE****Client Name: COG Operating LLC****Project Name: Airacuda 31 Fed BTY**

Project ID:  
Work Order Number(s): 557823

Report Date: 25-JUL-17  
Date Received: 07/17/2017

---

**Sample receipt non conformances and comments:**

---

**Sample receipt non conformances and comments per sample:**

None

**Analytical non conformances and comments:**

Batch: LBA-3022826 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3022985 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3022986 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3023111 Inorganic Anions by EPA 300/300.1

Lab Sample ID 557823-011 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 557823-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.



# Certificate of Analytical Results 557823



## COG Operating LLC, Artesia, NM

Airacuda 31 Fed BTY

Sample Id: **T1-Surface**

Matrix: Soil

Date Received: 07.17.17 11.45

Lab Sample Id: 557823-001

Date Collected: 07.11.17 10.00

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 07.21.17 17.00

Basis: Wet Weight

Seq Number: 3023111

| Parameter | Cas Number | Result | RL   | Units | Analysis Date  | Flag | Dil |
|-----------|------------|--------|------|-------|----------------|------|-----|
| Chloride  | 16887-00-6 | 25.4   | 5.01 | mg/kg | 07.22.17 04.22 |      | 1   |

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 07.19.17 18.00

Basis: Wet Weight

Seq Number: 3022910

| Parameter                         | Cas Number        | Result            | RL           | Units         | Analysis Date        | Flag        | Dil |
|-----------------------------------|-------------------|-------------------|--------------|---------------|----------------------|-------------|-----|
| Gasoline Range Hydrocarbons (GRO) | PHC610            | <15.0             | 15.0         | mg/kg         | 07.20.17 04.13       | U           | 1   |
| Diesel Range Organics (DRO)       | C10C28DRO         | <15.0             | 15.0         | mg/kg         | 07.20.17 04.13       | U           | 1   |
| Oil Range Hydrocarbons (ORO)      | PHCG2835          | <15.0             | 15.0         | mg/kg         | 07.20.17 04.13       | U           | 1   |
| Total TPH                         | PHC635            | <15.0             | 15.0         | mg/kg         | 07.20.17 04.13       | U           | 1   |
| <b>Surrogate</b>                  | <b>Cas Number</b> | <b>% Recovery</b> | <b>Units</b> | <b>Limits</b> | <b>Analysis Date</b> | <b>Flag</b> |     |
| 1-Chlorooctane                    | 111-85-3          | 101               | %            | 70-135        | 07.20.17 04.13       |             |     |
| o-Terphenyl                       | 84-15-1           | 111               | %            | 70-135        | 07.20.17 04.13       |             |     |



# Certificate of Analytical Results 557823



## COG Operating LLC, Artesia, NM

Airacuda 31 Fed BTY

Sample Id: **T1-Surface**

Matrix: Soil

Date Received: 07.17.17 11.45

Lab Sample Id: 557823-001

Date Collected: 07.11.17 10.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 07.21.17 14.00

Basis: Wet Weight

Seq Number: 3022986

| Parameter            | Cas Number        | Result            | RL           | Units         | Analysis Date        | Flag        | Dil |
|----------------------|-------------------|-------------------|--------------|---------------|----------------------|-------------|-----|
| Benzene              | 71-43-2           | <0.00200          | 0.00200      | mg/kg         | 07.21.17 20.19       | U           | 1   |
| Toluene              | 108-88-3          | <0.00200          | 0.00200      | mg/kg         | 07.21.17 20.19       | U           | 1   |
| Ethylbenzene         | 100-41-4          | <0.00200          | 0.00200      | mg/kg         | 07.21.17 20.19       | U           | 1   |
| m,p-Xylenes          | 179601-23-1       | <0.00401          | 0.00401      | mg/kg         | 07.21.17 20.19       | U           | 1   |
| o-Xylene             | 95-47-6           | <0.00200          | 0.00200      | mg/kg         | 07.21.17 20.19       | U           | 1   |
| Total Xylenes        | 1330-20-7         | <0.00200          | 0.00200      | mg/kg         | 07.21.17 20.19       | U           | 1   |
| Total BTEX           |                   | <0.00200          | 0.00200      | mg/kg         | 07.21.17 20.19       | U           | 1   |
| <b>Surrogate</b>     | <b>Cas Number</b> | <b>% Recovery</b> | <b>Units</b> | <b>Limits</b> | <b>Analysis Date</b> | <b>Flag</b> |     |
| 4-Bromofluorobenzene | 460-00-4          | 109               | %            | 80-120        | 07.21.17 20.19       |             |     |
| 1,4-Difluorobenzene  | 540-36-3          | 98                | %            | 80-120        | 07.21.17 20.19       |             |     |



# Certificate of Analytical Results 557823



## COG Operating LLC, Artesia, NM

Airacuda 31 Fed BTY

Sample Id: T1-1' Matrix: Soil Date Received: 07.17.17 11.45  
 Lab Sample Id: 557823-002 Date Collected: 07.11.17 10.00 Sample Depth: 1 ft  
 Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P  
 Tech: MGO % Moisture:  
 Analyst: MGO Date Prep: 07.21.17 17.00 Basis: Wet Weight  
 Seq Number: 3023111

| Parameter | Cas Number | Result | RL   | Units | Analysis Date  | Flag | Dil |
|-----------|------------|--------|------|-------|----------------|------|-----|
| Chloride  | 16887-00-6 | 6.83   | 4.89 | mg/kg | 07.22.17 04.45 |      | 1   |

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P  
 Tech: ARM % Moisture:  
 Analyst: ARM Date Prep: 07.19.17 18.00 Basis: Wet Weight  
 Seq Number: 3022910

| Parameter                         | Cas Number        | Result            | RL           | Units         | Analysis Date        | Flag        | Dil |
|-----------------------------------|-------------------|-------------------|--------------|---------------|----------------------|-------------|-----|
| Gasoline Range Hydrocarbons (GRO) | PHC610            | <15.0             | 15.0         | mg/kg         | 07.20.17 05.16       | U           | 1   |
| Diesel Range Organics (DRO)       | C10C28DRO         | 27.9              | 15.0         | mg/kg         | 07.20.17 05.16       |             | 1   |
| Oil Range Hydrocarbons (ORO)      | PHCG2835          | <15.0             | 15.0         | mg/kg         | 07.20.17 05.16       | U           | 1   |
| Total TPH                         | PHC635            | 27.9              | 15.0         | mg/kg         | 07.20.17 05.16       |             | 1   |
| <b>Surrogate</b>                  | <b>Cas Number</b> | <b>% Recovery</b> | <b>Units</b> | <b>Limits</b> | <b>Analysis Date</b> | <b>Flag</b> |     |
| 1-Chlorooctane                    | 111-85-3          | 100               | %            | 70-135        | 07.20.17 05.16       |             |     |
| o-Terphenyl                       | 84-15-1           | 109               | %            | 70-135        | 07.20.17 05.16       |             |     |



# Certificate of Analytical Results 557823



## COG Operating LLC, Artesia, NM

Airacuda 31 Fed BTY

Sample Id: T1-1'  
Lab Sample Id: 557823-002

Matrix: Soil  
Date Collected: 07.11.17 10.00

Date Received: 07.17.17 11.45  
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 07.21.17 14.00

Basis: Wet Weight

Seq Number: 3022986

| Parameter            | Cas Number        | Result            | RL           | Units         | Analysis Date        | Flag        | Dil |
|----------------------|-------------------|-------------------|--------------|---------------|----------------------|-------------|-----|
| Benzene              | 71-43-2           | <0.00199          | 0.00199      | mg/kg         | 07.21.17 20.38       | U           | 1   |
| Toluene              | 108-88-3          | <0.00199          | 0.00199      | mg/kg         | 07.21.17 20.38       | U           | 1   |
| Ethylbenzene         | 100-41-4          | <0.00199          | 0.00199      | mg/kg         | 07.21.17 20.38       | U           | 1   |
| m,p-Xylenes          | 179601-23-1       | <0.00398          | 0.00398      | mg/kg         | 07.21.17 20.38       | U           | 1   |
| o-Xylene             | 95-47-6           | <0.00199          | 0.00199      | mg/kg         | 07.21.17 20.38       | U           | 1   |
| Total Xylenes        | 1330-20-7         | <0.00199          | 0.00199      | mg/kg         | 07.21.17 20.38       | U           | 1   |
| Total BTEX           |                   | <0.00199          | 0.00199      | mg/kg         | 07.21.17 20.38       | U           | 1   |
| <b>Surrogate</b>     | <b>Cas Number</b> | <b>% Recovery</b> | <b>Units</b> | <b>Limits</b> | <b>Analysis Date</b> | <b>Flag</b> |     |
| 1,4-Difluorobenzene  | 540-36-3          | 91                | %            | 80-120        | 07.21.17 20.38       |             |     |
| 4-Bromofluorobenzene | 460-00-4          | 81                | %            | 80-120        | 07.21.17 20.38       |             |     |



# Certificate of Analytical Results 557823



## COG Operating LLC, Artesia, NM

Airacuda 31 Fed BTY

Sample Id: T1-2'  
Lab Sample Id: 557823-003

Matrix: Soil  
Date Collected: 07.11.17 10.00

Date Received: 07.17.17 11.45  
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MGO

Analyst: MGO

Seq Number: 3023111

Date Prep: 07.21.17 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

| Parameter | Cas Number | Result | RL   | Units | Analysis Date  | Flag | Dil |
|-----------|------------|--------|------|-------|----------------|------|-----|
| Chloride  | 16887-00-6 | 5.26   | 4.89 | mg/kg | 07.22.17 04.53 |      | 1   |

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3022910

Date Prep: 07.19.17 18.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

| Parameter                         | Cas Number        | Result            | RL           | Units         | Analysis Date        | Flag        | Dil |
|-----------------------------------|-------------------|-------------------|--------------|---------------|----------------------|-------------|-----|
| Gasoline Range Hydrocarbons (GRO) | PHC610            | <15.0             | 15.0         | mg/kg         | 07.20.17 05.37       | U           | 1   |
| Diesel Range Organics (DRO)       | C10C28DRO         | <15.0             | 15.0         | mg/kg         | 07.20.17 05.37       | U           | 1   |
| Oil Range Hydrocarbons (ORO)      | PHCG2835          | <15.0             | 15.0         | mg/kg         | 07.20.17 05.37       | U           | 1   |
| Total TPH                         | PHC635            | <15.0             | 15.0         | mg/kg         | 07.20.17 05.37       | U           | 1   |
| <b>Surrogate</b>                  | <b>Cas Number</b> | <b>% Recovery</b> | <b>Units</b> | <b>Limits</b> | <b>Analysis Date</b> | <b>Flag</b> |     |
| 1-Chlorooctane                    | 111-85-3          | 114               | %            | 70-135        | 07.20.17 05.37       |             |     |
| o-Terphenyl                       | 84-15-1           | 120               | %            | 70-135        | 07.20.17 05.37       |             |     |



# Certificate of Analytical Results 557823

## COG Operating LLC, Artesia, NM

Airacuda 31 Fed BTY

Sample Id: T1-2'  
Lab Sample Id: 557823-003

Matrix: Soil  
Date Collected: 07.11.17 10.00

Date Received: 07.17.17 11.45  
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 07.21.17 14.00

Basis: Wet Weight

Seq Number: 3022986

| Parameter            | Cas Number        | Result            | RL           | Units         | Analysis Date        | Flag        | Dil |
|----------------------|-------------------|-------------------|--------------|---------------|----------------------|-------------|-----|
| Benzene              | 71-43-2           | <0.00198          | 0.00198      | mg/kg         | 07.21.17 20.57       | U           | 1   |
| Toluene              | 108-88-3          | <0.00198          | 0.00198      | mg/kg         | 07.21.17 20.57       | U           | 1   |
| Ethylbenzene         | 100-41-4          | <0.00198          | 0.00198      | mg/kg         | 07.21.17 20.57       | U           | 1   |
| m,p-Xylenes          | 179601-23-1       | <0.00396          | 0.00396      | mg/kg         | 07.21.17 20.57       | U           | 1   |
| o-Xylene             | 95-47-6           | <0.00198          | 0.00198      | mg/kg         | 07.21.17 20.57       | U           | 1   |
| Total Xylenes        | 1330-20-7         | <0.00198          | 0.00198      | mg/kg         | 07.21.17 20.57       | U           | 1   |
| Total BTEX           |                   | <0.00198          | 0.00198      | mg/kg         | 07.21.17 20.57       | U           | 1   |
| <b>Surrogate</b>     | <b>Cas Number</b> | <b>% Recovery</b> | <b>Units</b> | <b>Limits</b> | <b>Analysis Date</b> | <b>Flag</b> |     |
| 4-Bromofluorobenzene | 460-00-4          | 105               | %            | 80-120        | 07.21.17 20.57       |             |     |
| 1,4-Difluorobenzene  | 540-36-3          | 94                | %            | 80-120        | 07.21.17 20.57       |             |     |



# Certificate of Analytical Results 557823



## COG Operating LLC, Artesia, NM

Airacuda 31 Fed BTY

Sample Id: T1-3' Matrix: Soil Date Received: 07.17.17 11.45  
 Lab Sample Id: 557823-004 Date Collected: 07.11.17 10.00 Sample Depth: 3 ft  
 Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P  
 Tech: MGO % Moisture:  
 Analyst: MGO Date Prep: 07.21.17 17.00 Basis: Wet Weight  
 Seq Number: 3023111

| Parameter | Cas Number | Result | RL   | Units | Analysis Date  | Flag | Dil |
|-----------|------------|--------|------|-------|----------------|------|-----|
| Chloride  | 16887-00-6 | 6.49   | 4.93 | mg/kg | 07.22.17 05.00 |      | 1   |

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P  
 Tech: ARM % Moisture:  
 Analyst: ARM Date Prep: 07.19.17 18.00 Basis: Wet Weight  
 Seq Number: 3022910

| Parameter                         | Cas Number        | Result            | RL           | Units         | Analysis Date        | Flag        | Dil |
|-----------------------------------|-------------------|-------------------|--------------|---------------|----------------------|-------------|-----|
| Gasoline Range Hydrocarbons (GRO) | PHC610            | <15.0             | 15.0         | mg/kg         | 07.20.17 05.59       | U           | 1   |
| Diesel Range Organics (DRO)       | C10C28DRO         | <15.0             | 15.0         | mg/kg         | 07.20.17 05.59       | U           | 1   |
| Oil Range Hydrocarbons (ORO)      | PHCG2835          | <15.0             | 15.0         | mg/kg         | 07.20.17 05.59       | U           | 1   |
| Total TPH                         | PHC635            | <15.0             | 15.0         | mg/kg         | 07.20.17 05.59       | U           | 1   |
| <b>Surrogate</b>                  | <b>Cas Number</b> | <b>% Recovery</b> | <b>Units</b> | <b>Limits</b> | <b>Analysis Date</b> | <b>Flag</b> |     |
| 1-Chlorooctane                    | 111-85-3          | 100               | %            | 70-135        | 07.20.17 05.59       |             |     |
| o-Terphenyl                       | 84-15-1           | 108               | %            | 70-135        | 07.20.17 05.59       |             |     |



# Certificate of Analytical Results 557823



## COG Operating LLC, Artesia, NM

Airacuda 31 Fed BTY

Sample Id: T1-3'  
Lab Sample Id: 557823-004

Matrix: Soil  
Date Collected: 07.11.17 10.00

Date Received: 07.17.17 11.45  
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 07.21.17 14.00

Basis: Wet Weight

Seq Number: 3022986

| Parameter            | Cas Number        | Result            | RL           | Units         | Analysis Date        | Flag        | Dil |
|----------------------|-------------------|-------------------|--------------|---------------|----------------------|-------------|-----|
| Benzene              | 71-43-2           | <0.00201          | 0.00201      | mg/kg         | 07.21.17 21.15       | U           | 1   |
| Toluene              | 108-88-3          | <0.00201          | 0.00201      | mg/kg         | 07.21.17 21.15       | U           | 1   |
| Ethylbenzene         | 100-41-4          | <0.00201          | 0.00201      | mg/kg         | 07.21.17 21.15       | U           | 1   |
| m,p-Xylenes          | 179601-23-1       | <0.00402          | 0.00402      | mg/kg         | 07.21.17 21.15       | U           | 1   |
| o-Xylene             | 95-47-6           | <0.00201          | 0.00201      | mg/kg         | 07.21.17 21.15       | U           | 1   |
| Total Xylenes        | 1330-20-7         | <0.00201          | 0.00201      | mg/kg         | 07.21.17 21.15       | U           | 1   |
| Total BTEX           |                   | <0.00201          | 0.00201      | mg/kg         | 07.21.17 21.15       | U           | 1   |
| <b>Surrogate</b>     | <b>Cas Number</b> | <b>% Recovery</b> | <b>Units</b> | <b>Limits</b> | <b>Analysis Date</b> | <b>Flag</b> |     |
| 4-Bromofluorobenzene | 460-00-4          | 107               | %            | 80-120        | 07.21.17 21.15       |             |     |
| 1,4-Difluorobenzene  | 540-36-3          | 95                | %            | 80-120        | 07.21.17 21.15       |             |     |



# Certificate of Analytical Results 557823



## COG Operating LLC, Artesia, NM

Airacuda 31 Fed BTY

Sample Id: T1-4'  
Lab Sample Id: 557823-005

Matrix: Soil  
Date Collected: 07.11.17 10.00

Date Received: 07.17.17 11.45  
Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MGO

Analyst: MGO

Seq Number: 3023111

Date Prep: 07.21.17 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

| Parameter | Cas Number | Result | RL   | Units | Analysis Date  | Flag | Dil |
|-----------|------------|--------|------|-------|----------------|------|-----|
| Chloride  | 16887-00-6 | <5.00  | 5.00 | mg/kg | 07.22.17 05.08 | U    | 1   |

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3022910

Date Prep: 07.19.17 18.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

| Parameter                         | Cas Number | Result | RL   | Units | Analysis Date  | Flag | Dil |
|-----------------------------------|------------|--------|------|-------|----------------|------|-----|
| Gasoline Range Hydrocarbons (GRO) | PHC610     | <15.0  | 15.0 | mg/kg | 07.20.17 06.20 | U    | 1   |
| Diesel Range Organics (DRO)       | C10C28DRO  | <15.0  | 15.0 | mg/kg | 07.20.17 06.20 | U    | 1   |
| Oil Range Hydrocarbons (ORO)      | PHCG2835   | <15.0  | 15.0 | mg/kg | 07.20.17 06.20 | U    | 1   |
| Total TPH                         | PHC635     | <15.0  | 15.0 | mg/kg | 07.20.17 06.20 | U    | 1   |

| Surrogate      | Cas Number | % Recovery | Units | Limits | Analysis Date  | Flag |
|----------------|------------|------------|-------|--------|----------------|------|
| 1-Chlorooctane | 111-85-3   | 101        | %     | 70-135 | 07.20.17 06.20 |      |
| o-Terphenyl    | 84-15-1    | 110        | %     | 70-135 | 07.20.17 06.20 |      |



# Certificate of Analytical Results 557823



## COG Operating LLC, Artesia, NM

Airacuda 31 Fed BTY

Sample Id: T1-4'  
Lab Sample Id: 557823-005

Matrix: Soil  
Date Collected: 07.11.17 10.00

Date Received: 07.17.17 11.45  
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 07.21.17 14.00

Basis: Wet Weight

Seq Number: 3022986

| Parameter            | Cas Number        | Result            | RL           | Units         | Analysis Date        | Flag        | Dil |
|----------------------|-------------------|-------------------|--------------|---------------|----------------------|-------------|-----|
| Benzene              | 71-43-2           | <0.00200          | 0.00200      | mg/kg         | 07.21.17 21.34       | U           | 1   |
| Toluene              | 108-88-3          | <0.00200          | 0.00200      | mg/kg         | 07.21.17 21.34       | U           | 1   |
| Ethylbenzene         | 100-41-4          | <0.00200          | 0.00200      | mg/kg         | 07.21.17 21.34       | U           | 1   |
| m,p-Xylenes          | 179601-23-1       | <0.00399          | 0.00399      | mg/kg         | 07.21.17 21.34       | U           | 1   |
| o-Xylene             | 95-47-6           | <0.00200          | 0.00200      | mg/kg         | 07.21.17 21.34       | U           | 1   |
| Total Xylenes        | 1330-20-7         | <0.00200          | 0.00200      | mg/kg         | 07.21.17 21.34       | U           | 1   |
| Total BTEX           |                   | <0.00200          | 0.00200      | mg/kg         | 07.21.17 21.34       | U           | 1   |
| <b>Surrogate</b>     | <b>Cas Number</b> | <b>% Recovery</b> | <b>Units</b> | <b>Limits</b> | <b>Analysis Date</b> | <b>Flag</b> |     |
| 4-Bromofluorobenzene | 460-00-4          | 110               | %            | 80-120        | 07.21.17 21.34       |             |     |
| 1,4-Difluorobenzene  | 540-36-3          | 97                | %            | 80-120        | 07.21.17 21.34       |             |     |



## Certificate of Analytical Results 557823



## COG Operating LLC, Artesia, NM

Airacuda 31 Fed BTY

Sample Id: T1-5'  
Lab Sample Id: 557823-006

Matrix: Soil  
Date Collected: 07.11.17 10.00

Date Received: 07.17.17 11.45  
Sample Depth: 6 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MGO

Analyst: MGO

Seq Number: 3023111

Date Prep: 07.21.17 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

| Parameter | Cas Number | Result | RL   | Units | Analysis Date  | Flag | Dil |
|-----------|------------|--------|------|-------|----------------|------|-----|
| Chloride  | 16887-00-6 | 7.75   | 4.90 | mg/kg | 07.22.17 05.31 |      | 1   |

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3022910

Date Prep: 07.19.17 18.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

| Parameter                         | Cas Number        | Result            | RL           | Units         | Analysis Date        | Flag        | Dil |
|-----------------------------------|-------------------|-------------------|--------------|---------------|----------------------|-------------|-----|
| Gasoline Range Hydrocarbons (GRO) | PHC610            | <15.0             | 15.0         | mg/kg         | 07.20.17 06.41       | U           | 1   |
| Diesel Range Organics (DRO)       | C10C28DRO         | <15.0             | 15.0         | mg/kg         | 07.20.17 06.41       | U           | 1   |
| Oil Range Hydrocarbons (ORO)      | PHCG2835          | <15.0             | 15.0         | mg/kg         | 07.20.17 06.41       | U           | 1   |
| Total TPH                         | PHC635            | <15.0             | 15.0         | mg/kg         | 07.20.17 06.41       | U           | 1   |
| <b>Surrogate</b>                  | <b>Cas Number</b> | <b>% Recovery</b> | <b>Units</b> | <b>Limits</b> | <b>Analysis Date</b> | <b>Flag</b> |     |
| 1-Chlorooctane                    | 111-85-3          | 102               | %            | 70-135        | 07.20.17 06.41       |             |     |
| o-Terphenyl                       | 84-15-1           | 110               | %            | 70-135        | 07.20.17 06.41       |             |     |



# Certificate of Analytical Results 557823



## COG Operating LLC, Artesia, NM

Airacuda 31 Fed BTY

Sample Id: T1-5'  
Lab Sample Id: 557823-006

Matrix: Soil  
Date Collected: 07.11.17 10.00

Date Received: 07.17.17 11.45  
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 07.21.17 14.00

Basis: Wet Weight

Seq Number: 3022986

| Parameter            | Cas Number        | Result            | RL           | Units         | Analysis Date        | Flag        | Dil |
|----------------------|-------------------|-------------------|--------------|---------------|----------------------|-------------|-----|
| Benzene              | 71-43-2           | <0.00200          | 0.00200      | mg/kg         | 07.21.17 21.53       | U           | 1   |
| Toluene              | 108-88-3          | <0.00200          | 0.00200      | mg/kg         | 07.21.17 21.53       | U           | 1   |
| Ethylbenzene         | 100-41-4          | <0.00200          | 0.00200      | mg/kg         | 07.21.17 21.53       | U           | 1   |
| m,p-Xylenes          | 179601-23-1       | <0.00401          | 0.00401      | mg/kg         | 07.21.17 21.53       | U           | 1   |
| o-Xylene             | 95-47-6           | <0.00200          | 0.00200      | mg/kg         | 07.21.17 21.53       | U           | 1   |
| Total Xylenes        | 1330-20-7         | <0.00200          | 0.00200      | mg/kg         | 07.21.17 21.53       | U           | 1   |
| Total BTEX           |                   | <0.00200          | 0.00200      | mg/kg         | 07.21.17 21.53       | U           | 1   |
| <b>Surrogate</b>     | <b>Cas Number</b> | <b>% Recovery</b> | <b>Units</b> | <b>Limits</b> | <b>Analysis Date</b> | <b>Flag</b> |     |
| 4-Bromofluorobenzene | 460-00-4          | 106               | %            | 80-120        | 07.21.17 21.53       |             |     |
| 1,4-Difluorobenzene  | 540-36-3          | 96                | %            | 80-120        | 07.21.17 21.53       |             |     |



# Certificate of Analytical Results 557823



## COG Operating LLC, Artesia, NM

Airacuda 31 Fed BTY

Sample Id: **T2-Surface**

Matrix: Soil

Date Received: 07.17.17 11.45

Lab Sample Id: 557823-007

Date Collected: 07.11.17 10.00

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 07.21.17 17.00

Basis: Wet Weight

Seq Number: 3023111

| Parameter | Cas Number | Result | RL   | Units | Analysis Date  | Flag | Dil |
|-----------|------------|--------|------|-------|----------------|------|-----|
| Chloride  | 16887-00-6 | <4.88  | 4.88 | mg/kg | 07.22.17 05.39 | U    | 1   |

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 07.19.17 18.00

Basis: Wet Weight

Seq Number: 3022910

| Parameter                         | Cas Number | Result | RL   | Units | Analysis Date  | Flag | Dil |
|-----------------------------------|------------|--------|------|-------|----------------|------|-----|
| Gasoline Range Hydrocarbons (GRO) | PHC610     | <15.0  | 15.0 | mg/kg | 07.20.17 07.04 | U    | 1   |
| Diesel Range Organics (DRO)       | C10C28DRO  | <15.0  | 15.0 | mg/kg | 07.20.17 07.04 | U    | 1   |
| Oil Range Hydrocarbons (ORO)      | PHCG2835   | <15.0  | 15.0 | mg/kg | 07.20.17 07.04 | U    | 1   |
| Total TPH                         | PHC635     | <15.0  | 15.0 | mg/kg | 07.20.17 07.04 | U    | 1   |

| Surrogate      | Cas Number | % Recovery | Units | Limits | Analysis Date  | Flag |
|----------------|------------|------------|-------|--------|----------------|------|
| 1-Chlorooctane | 111-85-3   | 97         | %     | 70-135 | 07.20.17 07.04 |      |
| o-Terphenyl    | 84-15-1    | 105        | %     | 70-135 | 07.20.17 07.04 |      |



# Certificate of Analytical Results 557823



## COG Operating LLC, Artesia, NM

Airacuda 31 Fed BTY

Sample Id: **T2-Surface**

Matrix: Soil

Date Received: 07.17.17 11.45

Lab Sample Id: 557823-007

Date Collected: 07.11.17 10.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 07.21.17 14.00

Basis: Wet Weight

Seq Number: 3022986

| Parameter            | Cas Number        | Result            | RL           | Units         | Analysis Date        | Flag        | Dil |
|----------------------|-------------------|-------------------|--------------|---------------|----------------------|-------------|-----|
| Benzene              | 71-43-2           | <0.00201          | 0.00201      | mg/kg         | 07.21.17 22.12       | U           | 1   |
| Toluene              | 108-88-3          | <0.00201          | 0.00201      | mg/kg         | 07.21.17 22.12       | U           | 1   |
| Ethylbenzene         | 100-41-4          | <0.00201          | 0.00201      | mg/kg         | 07.21.17 22.12       | U           | 1   |
| m,p-Xylenes          | 179601-23-1       | <0.00402          | 0.00402      | mg/kg         | 07.21.17 22.12       | U           | 1   |
| o-Xylene             | 95-47-6           | <0.00201          | 0.00201      | mg/kg         | 07.21.17 22.12       | U           | 1   |
| Total Xylenes        | 1330-20-7         | <0.00201          | 0.00201      | mg/kg         | 07.21.17 22.12       | U           | 1   |
| Total BTEX           |                   | <0.00201          | 0.00201      | mg/kg         | 07.21.17 22.12       | U           | 1   |
| <b>Surrogate</b>     | <b>Cas Number</b> | <b>% Recovery</b> | <b>Units</b> | <b>Limits</b> | <b>Analysis Date</b> | <b>Flag</b> |     |
| 4-Bromofluorobenzene | 460-00-4          | 108               | %            | 80-120        | 07.21.17 22.12       |             |     |
| 1,4-Difluorobenzene  | 540-36-3          | 98                | %            | 80-120        | 07.21.17 22.12       |             |     |



# Certificate of Analytical Results 557823



## COG Operating LLC, Artesia, NM

Airacuda 31 Fed BTY

Sample Id: T2-1' Matrix: Soil Date Received: 07.17.17 11.45  
 Lab Sample Id: 557823-008 Date Collected: 07.11.17 10.00 Sample Depth: 1 ft  
 Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P  
 Tech: MGO % Moisture:  
 Analyst: MGO Date Prep: 07.21.17 17.00 Basis: Wet Weight  
 Seq Number: 3023111

| Parameter | Cas Number | Result | RL   | Units | Analysis Date  | Flag | Dil |
|-----------|------------|--------|------|-------|----------------|------|-----|
| Chloride  | 16887-00-6 | <4.95  | 4.95 | mg/kg | 07.22.17 05.46 | U    | 1   |

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P  
 Tech: ARM % Moisture:  
 Analyst: ARM Date Prep: 07.19.17 18.00 Basis: Wet Weight  
 Seq Number: 3022910

| Parameter                         | Cas Number | Result | RL   | Units | Analysis Date  | Flag | Dil |
|-----------------------------------|------------|--------|------|-------|----------------|------|-----|
| Gasoline Range Hydrocarbons (GRO) | PHC610     | <14.9  | 14.9 | mg/kg | 07.20.17 07.26 | U    | 1   |
| Diesel Range Organics (DRO)       | C10C28DRO  | <14.9  | 14.9 | mg/kg | 07.20.17 07.26 | U    | 1   |
| Oil Range Hydrocarbons (ORO)      | PHCG2835   | <14.9  | 14.9 | mg/kg | 07.20.17 07.26 | U    | 1   |
| Total TPH                         | PHC635     | <14.9  | 14.9 | mg/kg | 07.20.17 07.26 | U    | 1   |

| Surrogate      | Cas Number | % Recovery | Units | Limits | Analysis Date  | Flag |
|----------------|------------|------------|-------|--------|----------------|------|
| 1-Chlorooctane | 111-85-3   | 119        | %     | 70-135 | 07.20.17 07.26 |      |
| o-Terphenyl    | 84-15-1    | 123        | %     | 70-135 | 07.20.17 07.26 |      |



# Certificate of Analytical Results 557823

## COG Operating LLC, Artesia, NM

Airacuda 31 Fed BTY

Sample Id: T2-1'  
Lab Sample Id: 557823-008

Matrix: Soil  
Date Collected: 07.11.17 10.00

Date Received: 07.17.17 11.45  
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 07.21.17 14.00

Basis: Wet Weight

Seq Number: 3022986

| Parameter            | Cas Number        | Result            | RL           | Units         | Analysis Date        | Flag        | Dil |
|----------------------|-------------------|-------------------|--------------|---------------|----------------------|-------------|-----|
| Benzene              | 71-43-2           | <0.00199          | 0.00199      | mg/kg         | 07.21.17 22.30       | U           | 1   |
| Toluene              | 108-88-3          | <0.00199          | 0.00199      | mg/kg         | 07.21.17 22.30       | U           | 1   |
| Ethylbenzene         | 100-41-4          | <0.00199          | 0.00199      | mg/kg         | 07.21.17 22.30       | U           | 1   |
| m,p-Xylenes          | 179601-23-1       | <0.00398          | 0.00398      | mg/kg         | 07.21.17 22.30       | U           | 1   |
| o-Xylene             | 95-47-6           | <0.00199          | 0.00199      | mg/kg         | 07.21.17 22.30       | U           | 1   |
| Total Xylenes        | 1330-20-7         | <0.00199          | 0.00199      | mg/kg         | 07.21.17 22.30       | U           | 1   |
| Total BTEX           |                   | <0.00199          | 0.00199      | mg/kg         | 07.21.17 22.30       | U           | 1   |
| <b>Surrogate</b>     | <b>Cas Number</b> | <b>% Recovery</b> | <b>Units</b> | <b>Limits</b> | <b>Analysis Date</b> | <b>Flag</b> |     |
| 4-Bromofluorobenzene | 460-00-4          | 102               | %            | 80-120        | 07.21.17 22.30       |             |     |
| 1,4-Difluorobenzene  | 540-36-3          | 93                | %            | 80-120        | 07.21.17 22.30       |             |     |



## Certificate of Analytical Results 557823



## COG Operating LLC, Artesia, NM

Airacuda 31 Fed BTY

Sample Id: T2-2'  
Lab Sample Id: 557823-009

Matrix: Soil  
Date Collected: 07.11.17 10.00

Date Received: 07.17.17 11.45  
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 07.21.17 17.00

Basis: Wet Weight

Seq Number: 3023111

| Parameter | Cas Number | Result | RL   | Units | Analysis Date  | Flag | Dil |
|-----------|------------|--------|------|-------|----------------|------|-----|
| Chloride  | 16887-00-6 | 7.69   | 5.00 | mg/kg | 07.22.17 05.54 |      | 1   |

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 07.19.17 18.00

Basis: Wet Weight

Seq Number: 3022910

| Parameter                         | Cas Number | Result | RL   | Units | Analysis Date  | Flag | Dil |
|-----------------------------------|------------|--------|------|-------|----------------|------|-----|
| Gasoline Range Hydrocarbons (GRO) | PHC610     | <15.0  | 15.0 | mg/kg | 07.20.17 07.48 | U    | 1   |
| Diesel Range Organics (DRO)       | C10C28DRO  | <15.0  | 15.0 | mg/kg | 07.20.17 07.48 | U    | 1   |
| Oil Range Hydrocarbons (ORO)      | PHCG2835   | <15.0  | 15.0 | mg/kg | 07.20.17 07.48 | U    | 1   |
| Total TPH                         | PHC635     | <15.0  | 15.0 | mg/kg | 07.20.17 07.48 | U    | 1   |

| Surrogate      | Cas Number | % Recovery | Units | Limits | Analysis Date  | Flag |
|----------------|------------|------------|-------|--------|----------------|------|
| 1-Chlorooctane | 111-85-3   | 120        | %     | 70-135 | 07.20.17 07.48 |      |
| o-Terphenyl    | 84-15-1    | 127        | %     | 70-135 | 07.20.17 07.48 |      |



# Certificate of Analytical Results 557823



## COG Operating LLC, Artesia, NM

Airacuda 31 Fed BTY

Sample Id: T2-2'  
Lab Sample Id: 557823-009

Matrix: Soil  
Date Collected: 07.11.17 10.00

Date Received: 07.17.17 11.45  
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 07.20.17 13.30

Basis: Wet Weight

Seq Number: 3022826

| Parameter            | Cas Number        | Result            | RL           | Units         | Analysis Date        | Flag        | Dil |
|----------------------|-------------------|-------------------|--------------|---------------|----------------------|-------------|-----|
| Benzene              | 71-43-2           | <0.00199          | 0.00199      | mg/kg         | 07.20.17 22.03       | U           | 1   |
| Toluene              | 108-88-3          | <0.00199          | 0.00199      | mg/kg         | 07.20.17 22.03       | U           | 1   |
| Ethylbenzene         | 100-41-4          | <0.00199          | 0.00199      | mg/kg         | 07.20.17 22.03       | U           | 1   |
| m,p-Xylenes          | 179601-23-1       | <0.00398          | 0.00398      | mg/kg         | 07.20.17 22.03       | U           | 1   |
| o-Xylene             | 95-47-6           | <0.00199          | 0.00199      | mg/kg         | 07.20.17 22.03       | U           | 1   |
| Total Xylenes        | 1330-20-7         | <0.00199          | 0.00199      | mg/kg         | 07.20.17 22.03       | U           | 1   |
| Total BTEX           |                   | <0.00199          | 0.00199      | mg/kg         | 07.20.17 22.03       | U           | 1   |
| <b>Surrogate</b>     | <b>Cas Number</b> | <b>% Recovery</b> | <b>Units</b> | <b>Limits</b> | <b>Analysis Date</b> | <b>Flag</b> |     |
| 4-Bromofluorobenzene | 460-00-4          | 106               | %            | 80-120        | 07.20.17 22.03       |             |     |
| 1,4-Difluorobenzene  | 540-36-3          | 96                | %            | 80-120        | 07.20.17 22.03       |             |     |



# Certificate of Analytical Results 557823



## COG Operating LLC, Artesia, NM

Airacuda 31 Fed BTY

Sample Id: T2-3' Matrix: Soil Date Received: 07.17.17 11.45  
 Lab Sample Id: 557823-010 Date Collected: 07.11.17 10.00 Sample Depth: 3 ft  
 Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P  
 Tech: MGO % Moisture:  
 Analyst: MGO Date Prep: 07.21.17 17.00 Basis: Wet Weight  
 Seq Number: 3023111

| Parameter | Cas Number | Result | RL   | Units | Analysis Date  | Flag | Dil |
|-----------|------------|--------|------|-------|----------------|------|-----|
| Chloride  | 16887-00-6 | 5.60   | 5.03 | mg/kg | 07.22.17 06.02 |      | 1   |

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P  
 Tech: ARM % Moisture:  
 Analyst: ARM Date Prep: 07.19.17 18.00 Basis: Wet Weight  
 Seq Number: 3022910

| Parameter                         | Cas Number | Result | RL   | Units | Analysis Date  | Flag | Dil |
|-----------------------------------|------------|--------|------|-------|----------------|------|-----|
| Gasoline Range Hydrocarbons (GRO) | PHC610     | <15.0  | 15.0 | mg/kg | 07.20.17 08.10 | U    | 1   |
| Diesel Range Organics (DRO)       | C10C28DRO  | <15.0  | 15.0 | mg/kg | 07.20.17 08.10 | U    | 1   |
| Oil Range Hydrocarbons (ORO)      | PHCG2835   | <15.0  | 15.0 | mg/kg | 07.20.17 08.10 | U    | 1   |
| Total TPH                         | PHC635     | <15.0  | 15.0 | mg/kg | 07.20.17 08.10 | U    | 1   |

| Surrogate      | Cas Number | % Recovery | Units | Limits | Analysis Date  | Flag |
|----------------|------------|------------|-------|--------|----------------|------|
| 1-Chlorooctane | 111-85-3   | 98         | %     | 70-135 | 07.20.17 08.10 |      |
| o-Terphenyl    | 84-15-1    | 106        | %     | 70-135 | 07.20.17 08.10 |      |



# Certificate of Analytical Results 557823



## COG Operating LLC, Artesia, NM

Airacuda 31 Fed BTY

Sample Id: T2-3'  
Lab Sample Id: 557823-010

Matrix: Soil  
Date Collected: 07.11.17 10.00

Date Received: 07.17.17 11.45  
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 07.20.17 13.30

Basis: Wet Weight

Seq Number: 3022826

| Parameter            | Cas Number        | Result            | RL           | Units         | Analysis Date        | Flag        | Dil |
|----------------------|-------------------|-------------------|--------------|---------------|----------------------|-------------|-----|
| Benzene              | 71-43-2           | <0.00200          | 0.00200      | mg/kg         | 07.20.17 22.22       | U           | 1   |
| Toluene              | 108-88-3          | <0.00200          | 0.00200      | mg/kg         | 07.20.17 22.22       | U           | 1   |
| Ethylbenzene         | 100-41-4          | <0.00200          | 0.00200      | mg/kg         | 07.20.17 22.22       | U           | 1   |
| m,p-Xylenes          | 179601-23-1       | <0.00399          | 0.00399      | mg/kg         | 07.20.17 22.22       | U           | 1   |
| o-Xylene             | 95-47-6           | <0.00200          | 0.00200      | mg/kg         | 07.20.17 22.22       | U           | 1   |
| Total Xylenes        | 1330-20-7         | <0.00200          | 0.00200      | mg/kg         | 07.20.17 22.22       | U           | 1   |
| Total BTEX           |                   | <0.00200          | 0.00200      | mg/kg         | 07.20.17 22.22       | U           | 1   |
| <b>Surrogate</b>     | <b>Cas Number</b> | <b>% Recovery</b> | <b>Units</b> | <b>Limits</b> | <b>Analysis Date</b> | <b>Flag</b> |     |
| 1,4-Difluorobenzene  | 540-36-3          | 94                | %            | 80-120        | 07.20.17 22.22       |             |     |
| 4-Bromofluorobenzene | 460-00-4          | 104               | %            | 80-120        | 07.20.17 22.22       |             |     |



# Certificate of Analytical Results 557823



## COG Operating LLC, Artesia, NM

Airacuda 31 Fed BTY

Sample Id: T2-4'  
Lab Sample Id: 557823-011

Matrix: Soil  
Date Collected: 07.11.17 10.00

Date Received: 07.17.17 11.45  
Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MGO

Analyst: MGO

Seq Number: 3023111

Date Prep: 07.21.17 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

| Parameter | Cas Number | Result | RL   | Units | Analysis Date  | Flag | Dil |
|-----------|------------|--------|------|-------|----------------|------|-----|
| Chloride  | 16887-00-6 | <4.92  | 4.92 | mg/kg | 07.22.17 06.09 | U    | 1   |

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3022910

Date Prep: 07.19.17 18.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

| Parameter                         | Cas Number | Result | RL   | Units | Analysis Date  | Flag | Dil |
|-----------------------------------|------------|--------|------|-------|----------------|------|-----|
| Gasoline Range Hydrocarbons (GRO) | PHC610     | <15.0  | 15.0 | mg/kg | 07.20.17 09.15 | U    | 1   |
| Diesel Range Organics (DRO)       | C10C28DRO  | <15.0  | 15.0 | mg/kg | 07.20.17 09.15 | U    | 1   |
| Oil Range Hydrocarbons (ORO)      | PHCG2835   | <15.0  | 15.0 | mg/kg | 07.20.17 09.15 | U    | 1   |
| Total TPH                         | PHC635     | <15.0  | 15.0 | mg/kg | 07.20.17 09.15 | U    | 1   |

| Surrogate      | Cas Number | % Recovery | Units | Limits | Analysis Date  | Flag |
|----------------|------------|------------|-------|--------|----------------|------|
| 1-Chlorooctane | 111-85-3   | 93         | %     | 70-135 | 07.20.17 09.15 |      |
| o-Terphenyl    | 84-15-1    | 99         | %     | 70-135 | 07.20.17 09.15 |      |



# Certificate of Analytical Results 557823



## COG Operating LLC, Artesia, NM

Airacuda 31 Fed BTY

Sample Id: T2-4'  
Lab Sample Id: 557823-011

Matrix: Soil  
Date Collected: 07.11.17 10.00

Date Received: 07.17.17 11.45  
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 07.20.17 13.30

Basis: Wet Weight

Seq Number: 3022826

| Parameter            | Cas Number        | Result            | RL           | Units         | Analysis Date        | Flag        | Dil |
|----------------------|-------------------|-------------------|--------------|---------------|----------------------|-------------|-----|
| Benzene              | 71-43-2           | <0.00201          | 0.00201      | mg/kg         | 07.20.17 22.41       | U           | 1   |
| Toluene              | 108-88-3          | <0.00201          | 0.00201      | mg/kg         | 07.20.17 22.41       | U           | 1   |
| Ethylbenzene         | 100-41-4          | <0.00201          | 0.00201      | mg/kg         | 07.20.17 22.41       | U           | 1   |
| m,p-Xylenes          | 179601-23-1       | <0.00402          | 0.00402      | mg/kg         | 07.20.17 22.41       | U           | 1   |
| o-Xylene             | 95-47-6           | <0.00201          | 0.00201      | mg/kg         | 07.20.17 22.41       | U           | 1   |
| Total Xylenes        | 1330-20-7         | <0.00201          | 0.00201      | mg/kg         | 07.20.17 22.41       | U           | 1   |
| Total BTEX           |                   | <0.00201          | 0.00201      | mg/kg         | 07.20.17 22.41       | U           | 1   |
| <b>Surrogate</b>     | <b>Cas Number</b> | <b>% Recovery</b> | <b>Units</b> | <b>Limits</b> | <b>Analysis Date</b> | <b>Flag</b> |     |
| 1,4-Difluorobenzene  | 540-36-3          | 119               | %            | 80-120        | 07.20.17 22.41       |             |     |
| 4-Bromofluorobenzene | 460-00-4          | 80                | %            | 80-120        | 07.20.17 22.41       |             |     |



# Certificate of Analytical Results 557823



## COG Operating LLC, Artesia, NM

Airacuda 31 Fed BTY

Sample Id: T2-6'  
Lab Sample Id: 557823-012

Matrix: Soil  
Date Collected: 07.11.17 10.00

Date Received: 07.17.17 11.45  
Sample Depth: 6 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MGO

Analyst: MGO

Seq Number: 3023111

Date Prep: 07.21.17 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

| Parameter | Cas Number | Result | RL   | Units | Analysis Date  | Flag | Dil |
|-----------|------------|--------|------|-------|----------------|------|-----|
| Chloride  | 16887-00-6 | <4.97  | 4.97 | mg/kg | 07.22.17 06.33 | U    | 1   |

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3022910

Date Prep: 07.19.17 18.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

| Parameter                         | Cas Number | Result | RL   | Units | Analysis Date  | Flag | Dil |
|-----------------------------------|------------|--------|------|-------|----------------|------|-----|
| Gasoline Range Hydrocarbons (GRO) | PHC610     | <15.0  | 15.0 | mg/kg | 07.20.17 09.37 | U    | 1   |
| Diesel Range Organics (DRO)       | C10C28DRO  | <15.0  | 15.0 | mg/kg | 07.20.17 09.37 | U    | 1   |
| Oil Range Hydrocarbons (ORO)      | PHCG2835   | <15.0  | 15.0 | mg/kg | 07.20.17 09.37 | U    | 1   |
| Total TPH                         | PHC635     | <15.0  | 15.0 | mg/kg | 07.20.17 09.37 | U    | 1   |

| Surrogate      | Cas Number | % Recovery | Units | Limits | Analysis Date  | Flag |
|----------------|------------|------------|-------|--------|----------------|------|
| 1-Chlorooctane | 111-85-3   | 93         | %     | 70-135 | 07.20.17 09.37 |      |
| o-Terphenyl    | 84-15-1    | 99         | %     | 70-135 | 07.20.17 09.37 |      |



# Certificate of Analytical Results 557823



## COG Operating LLC, Artesia, NM

Airacuda 31 Fed BTY

Sample Id: T2-6'  
Lab Sample Id: 557823-012

Matrix: Soil  
Date Collected: 07.11.17 10.00

Date Received: 07.17.17 11.45  
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 07.21.17 07.30

Basis: Wet Weight

Seq Number: 3022985

| Parameter            | Cas Number        | Result            | RL           | Units         | Analysis Date        | Flag        | Dil |
|----------------------|-------------------|-------------------|--------------|---------------|----------------------|-------------|-----|
| Benzene              | 71-43-2           | <0.00201          | 0.00201      | mg/kg         | 07.21.17 16.31       | U           | 1   |
| Toluene              | 108-88-3          | <0.00201          | 0.00201      | mg/kg         | 07.21.17 16.31       | U           | 1   |
| Ethylbenzene         | 100-41-4          | <0.00201          | 0.00201      | mg/kg         | 07.21.17 16.31       | U           | 1   |
| m,p-Xylenes          | 179601-23-1       | <0.00402          | 0.00402      | mg/kg         | 07.21.17 16.31       | U           | 1   |
| <b>o-Xylene</b>      | 95-47-6           | <b>0.00246</b>    | 0.00201      | mg/kg         | 07.21.17 16.31       |             | 1   |
| <b>Total Xylenes</b> | 1330-20-7         | <b>0.00246</b>    | 0.00201      | mg/kg         | 07.21.17 16.31       |             | 1   |
| <b>Total BTEX</b>    |                   | <b>0.00246</b>    | 0.00201      | mg/kg         | 07.21.17 16.31       |             | 1   |
| <b>Surrogate</b>     | <b>Cas Number</b> | <b>% Recovery</b> | <b>Units</b> | <b>Limits</b> | <b>Analysis Date</b> | <b>Flag</b> |     |
| 1,4-Difluorobenzene  | 540-36-3          | 96                | %            | 80-120        | 07.21.17 16.31       |             |     |
| 4-Bromofluorobenzene | 460-00-4          | 119               | %            | 80-120        | 07.21.17 16.31       |             |     |



## Flagging Criteria



- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

\*\* Surrogate recovered outside laboratory control limit.

**BRL** Below Reporting Limit.

**RL** Reporting Limit

**MDL** Method Detection Limit      **SDL** Sample Detection Limit      **LOD** Limit of Detection

**PQL** Practical Quantitation Limit      **MQL** Method Quantitation Limit      **LOQ** Limit of Quantitation

**DL** Method Detection Limit

**NC** Non-Calculable

+ NELAC certification not offered for this compound.

\* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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## COG Operating LLC

Airacuda 31 Fed BTY

**Analytical Method: Inorganic Anions by EPA 300/300.1**

Seq Number: 3023111

Matrix: Solid

Prep Method: E300P

MB Sample Id: 728017-1-BLK

LCS Sample Id: 728017-1-BKS

Date Prep: 07.21.17

LCSD Sample Id: 728017-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date  | Flag |
|-----------|-----------|--------------|------------|----------|-------------|-----------|--------|------|-----------|-------|----------------|------|
| Chloride  | <5.00     | 250          | 262        | 105      | 272         | 109       | 90-110 | 4    | 20        | mg/kg | 07.22.17 04:07 |      |

**Analytical Method: Inorganic Anions by EPA 300/300.1**

Seq Number: 3023111

Matrix: Soil

Prep Method: E300P

Parent Sample Id: 557823-001

MS Sample Id: 557823-001 S

Date Prep: 07.21.17

MSD Sample Id: 557823-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date  | Flag |
|-----------|---------------|--------------|-----------|---------|------------|----------|--------|------|-----------|-------|----------------|------|
| Chloride  | 25.4          | 251          | 297       | 108     | 299        | 109      | 90-110 | 1    | 20        | mg/kg | 07.22.17 04:30 |      |

**Analytical Method: Inorganic Anions by EPA 300/300.1**

Seq Number: 3023111

Matrix: Soil

Prep Method: E300P

Parent Sample Id: 557823-011

MS Sample Id: 557823-011 S

Date Prep: 07.21.17

MSD Sample Id: 557823-011 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date  | Flag |
|-----------|---------------|--------------|-----------|---------|------------|----------|--------|------|-----------|-------|----------------|------|
| Chloride  | <4.92         | 246          | 265       | 108     | 285        | 116      | 90-110 | 7    | 20        | mg/kg | 07.22.17 06:17 | X    |

**Analytical Method: TPH By SW8015 Mod**

Seq Number: 3022910

Matrix: Solid

Prep Method: TX1005P

MB Sample Id: 727922-1-BLK

LCS Sample Id: 727922-1-BKS

Date Prep: 07.19.17

LCSD Sample Id: 727922-1-BSD

| Parameter                         | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date  | Flag |
|-----------------------------------|-----------|--------------|------------|----------|-------------|-----------|--------|------|-----------|-------|----------------|------|
| Gasoline Range Hydrocarbons (GRO) | <15.0     | 1000         | 977        | 98       | 995         | 100       | 70-135 | 2    | 35        | mg/kg | 07.20.17 03:30 |      |
| Diesel Range Organics (DRO)       | <15.0     | 1000         | 990        | 99       | 1010        | 101       | 70-135 | 2    | 35        | mg/kg | 07.20.17 03:30 |      |

| Surrogate      | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date  |
|----------------|---------|---------|----------|----------|-----------|-----------|--------|-------|----------------|
| 1-Chlorooctane | 112     |         | 107      |          | 106       |           | 70-135 | %     | 07.20.17 03:30 |
| o-Terphenyl    | 121     |         | 114      |          | 111       |           | 70-135 | %     | 07.20.17 03:30 |



## COG Operating LLC

Airacuda 31 Fed BTY

Analytical Method: TPH By SW8015 Mod

Seq Number: 3022910

Parent Sample Id: 557823-001

Matrix: Soil

MS Sample Id: 557823-001 S

Prep Method: TX1005P

Date Prep: 07.19.17

MSD Sample Id: 557823-001 SD

| Parameter                         | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date  | Flag |
|-----------------------------------|---------------|--------------|-----------|---------|------------|----------|--------|------|-----------|-------|----------------|------|
| Gasoline Range Hydrocarbons (GRO) | <15.0         | 998          | 1130      | 113     | 1130       | 113      | 70-135 | 0    | 35        | mg/kg | 07.20.17 04:34 |      |
| Diesel Range Organics (DRO)       | <15.0         | 998          | 1060      | 106     | 1180       | 118      | 70-135 | 11   | 35        | mg/kg | 07.20.17 04:34 |      |

## Surrogate

|                | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date  |
|----------------|---------|---------|----------|----------|--------|-------|----------------|
| 1-Chlorooctane | 100     |         | 109      |          | 70-135 | %     | 07.20.17 04:34 |
| o-Terphenyl    | 100     |         | 112      |          | 70-135 | %     | 07.20.17 04:34 |

Analytical Method: BTEX by EPA 8021B

Seq Number: 3022826

MB Sample Id: 727982-1-BLK

Matrix: Solid

LCS Sample Id: 727982-1-BKS

Prep Method: SW5030B

Date Prep: 07.20.17

LCSD Sample Id: 727982-1-BSD

| Parameter    | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date  | Flag |
|--------------|-----------|--------------|------------|----------|-------------|-----------|--------|------|-----------|-------|----------------|------|
| Benzene      | <0.00202  | 0.101        | 0.113      | 112      | 0.112       | 112       | 70-130 | 1    | 35        | mg/kg | 07.20.17 19:34 |      |
| Toluene      | <0.00202  | 0.101        | 0.115      | 114      | 0.114       | 114       | 70-130 | 1    | 35        | mg/kg | 07.20.17 19:34 |      |
| Ethylbenzene | <0.00202  | 0.101        | 0.120      | 119      | 0.119       | 119       | 71-129 | 1    | 35        | mg/kg | 07.20.17 19:34 |      |
| m,p-Xylenes  | <0.00404  | 0.202        | 0.237      | 117      | 0.234       | 116       | 70-135 | 1    | 35        | mg/kg | 07.20.17 19:34 |      |
| o-Xylene     | <0.00202  | 0.101        | 0.120      | 119      | 0.119       | 119       | 71-133 | 1    | 35        | mg/kg | 07.20.17 19:34 |      |

## Surrogate

|                      | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date  |
|----------------------|---------|---------|----------|----------|-----------|-----------|--------|-------|----------------|
| 1,4-Difluorobenzene  | 99      |         | 94       |          | 93        |           | 80-120 | %     | 07.20.17 19:34 |
| 4-Bromofluorobenzene | 105     |         | 109      |          | 109       |           | 80-120 | %     | 07.20.17 19:34 |

Analytical Method: BTEX by EPA 8021B

Seq Number: 3022985

MB Sample Id: 728055-1-BLK

Matrix: Solid

LCS Sample Id: 728055-1-BKS

Prep Method: SW5030B

Date Prep: 07.21.17

LCSD Sample Id: 728055-1-BSD

| Parameter    | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date  | Flag |
|--------------|-----------|--------------|------------|----------|-------------|-----------|--------|------|-----------|-------|----------------|------|
| Benzene      | <0.00200  | 0.100        | 0.113      | 113      | 0.113       | 112       | 70-130 | 0    | 35        | mg/kg | 07.21.17 07:54 |      |
| Toluene      | <0.00200  | 0.100        | 0.113      | 113      | 0.114       | 113       | 70-130 | 1    | 35        | mg/kg | 07.21.17 07:54 |      |
| Ethylbenzene | <0.00200  | 0.100        | 0.120      | 120      | 0.120       | 119       | 71-129 | 0    | 35        | mg/kg | 07.21.17 07:54 |      |
| m,p-Xylenes  | <0.00401  | 0.200        | 0.234      | 117      | 0.233       | 116       | 70-135 | 0    | 35        | mg/kg | 07.21.17 07:54 |      |
| o-Xylene     | <0.00200  | 0.100        | 0.117      | 117      | 0.117       | 116       | 71-133 | 0    | 35        | mg/kg | 07.21.17 07:54 |      |

## Surrogate

|                      | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date  |
|----------------------|---------|---------|----------|----------|-----------|-----------|--------|-------|----------------|
| 1,4-Difluorobenzene  | 97      |         | 91       |          | 101       |           | 80-120 | %     | 07.21.17 07:54 |
| 4-Bromofluorobenzene | 108     |         | 100      |          | 113       |           | 80-120 | %     | 07.21.17 07:54 |



## COG Operating LLC

Airacuda 31 Fed BTY

Analytical Method: BTEX by EPA 8021B

Seq Number: 3022986

MB Sample Id: 728057-1-BLK

Matrix: Solid

LCS Sample Id: 728057-1-BKS

Prep Method: SW5030B

Date Prep: 07.21.17

LCSD Sample Id: 728057-1-BSD

| Parameter    | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date  | Flag |
|--------------|-----------|--------------|------------|----------|-------------|-----------|--------|------|-----------|-------|----------------|------|
| Benzene      | <0.00200  | 0.100        | 0.108      | 108      | 0.111       | 111       | 70-130 | 3    | 35        | mg/kg | 07.21.17 17:48 |      |
| Toluene      | <0.00200  | 0.100        | 0.110      | 110      | 0.113       | 113       | 70-130 | 3    | 35        | mg/kg | 07.21.17 17:48 |      |
| Ethylbenzene | <0.00200  | 0.100        | 0.118      | 118      | 0.120       | 120       | 71-129 | 2    | 35        | mg/kg | 07.21.17 17:48 |      |
| m,p-Xylenes  | <0.00401  | 0.200        | 0.231      | 116      | 0.235       | 118       | 70-135 | 2    | 35        | mg/kg | 07.21.17 17:48 |      |
| o-Xylene     | <0.00200  | 0.100        | 0.118      | 118      | 0.120       | 120       | 71-133 | 2    | 35        | mg/kg | 07.21.17 17:48 |      |

| Surrogate            | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date  |
|----------------------|---------|---------|----------|----------|-----------|-----------|--------|-------|----------------|
| 1,4-Difluorobenzene  | 95      |         | 100      |          | 102       |           | 80-120 | %     | 07.21.17 17:48 |
| 4-Bromofluorobenzene | 112     |         | 119      |          | 118       |           | 80-120 | %     | 07.21.17 17:48 |

Analytical Method: BTEX by EPA 8021B

Seq Number: 3022826

Parent Sample Id: 557801-020

Matrix: Soil

MS Sample Id: 557801-020 S

Prep Method: SW5030B

Date Prep: 07.20.17

MSD Sample Id: 557801-020 SD

| Parameter    | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date  | Flag |
|--------------|---------------|--------------|-----------|---------|------------|----------|--------|------|-----------|-------|----------------|------|
| Benzene      | <0.00198      | 0.0992       | 0.0792    | 80      | 0.0879     | 88       | 70-130 | 10   | 35        | mg/kg | 07.20.17 20:12 |      |
| Toluene      | <0.00198      | 0.0992       | 0.0785    | 79      | 0.0888     | 89       | 70-130 | 12   | 35        | mg/kg | 07.20.17 20:12 |      |
| Ethylbenzene | <0.00198      | 0.0992       | 0.0912    | 92      | 0.0947     | 95       | 71-129 | 4    | 35        | mg/kg | 07.20.17 20:12 |      |
| m,p-Xylenes  | <0.00397      | 0.198        | 0.183     | 92      | 0.187      | 94       | 70-135 | 2    | 35        | mg/kg | 07.20.17 20:12 |      |
| o-Xylene     | <0.00198      | 0.0992       | 0.0969    | 98      | 0.0963     | 96       | 71-133 | 1    | 35        | mg/kg | 07.20.17 20:12 |      |

| Surrogate            | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date  |
|----------------------|---------|---------|----------|----------|--------|-------|----------------|
| 1,4-Difluorobenzene  | 113     |         | 104      |          | 80-120 | %     | 07.20.17 20:12 |
| 4-Bromofluorobenzene | 114     |         | 118      |          | 80-120 | %     | 07.20.17 20:12 |

Analytical Method: BTEX by EPA 8021B

Seq Number: 3022985

Parent Sample Id: 557797-024

Matrix: Soil

MS Sample Id: 557797-024 S

Prep Method: SW5030B

Date Prep: 07.21.17

MSD Sample Id: 557797-024 SD

| Parameter    | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date  | Flag |
|--------------|---------------|--------------|-----------|---------|------------|----------|--------|------|-----------|-------|----------------|------|
| Benzene      | <0.00201      | 0.100        | 0.0923    | 92      | 0.113      | 113      | 70-130 | 20   | 35        | mg/kg | 07.21.17 08:32 |      |
| Toluene      | <0.00201      | 0.100        | 0.0903    | 90      | 0.112      | 112      | 70-130 | 21   | 35        | mg/kg | 07.21.17 08:32 |      |
| Ethylbenzene | <0.00201      | 0.100        | 0.0939    | 94      | 0.117      | 117      | 71-129 | 22   | 35        | mg/kg | 07.21.17 08:32 |      |
| m,p-Xylenes  | <0.00402      | 0.201        | 0.183     | 91      | 0.227      | 114      | 70-135 | 21   | 35        | mg/kg | 07.21.17 08:32 |      |
| o-Xylene     | <0.00201      | 0.100        | 0.0938    | 94      | 0.114      | 114      | 71-133 | 19   | 35        | mg/kg | 07.21.17 08:32 |      |

| Surrogate            | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date  |
|----------------------|---------|---------|----------|----------|--------|-------|----------------|
| 1,4-Difluorobenzene  | 109     |         | 102      |          | 80-120 | %     | 07.21.17 08:32 |
| 4-Bromofluorobenzene | 118     |         | 113      |          | 80-120 | %     | 07.21.17 08:32 |



## COG Operating LLC

Airacuda 31 Fed BTY

Analytical Method: BTEX by EPA 8021B

Seq Number: 3022986

Parent Sample Id: 557797-046

Matrix: Soil

MS Sample Id: 557797-046 S

Prep Method: SW5030B

Date Prep: 07.21.17

MSD Sample Id: 557797-046 SD

| Parameter    | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date  | Flag |
|--------------|---------------|--------------|-----------|---------|------------|----------|--------|------|-----------|-------|----------------|------|
| Benzene      | <0.00201      | 0.100        | 0.0835    | 84      | 0.0894     | 89       | 70-130 | 7    | 35        | mg/kg | 07.21.17 18:25 |      |
| Toluene      | <0.00201      | 0.100        | 0.0841    | 84      | 0.0907     | 91       | 70-130 | 8    | 35        | mg/kg | 07.21.17 18:25 |      |
| Ethylbenzene | <0.00201      | 0.100        | 0.0887    | 89      | 0.0949     | 95       | 71-129 | 7    | 35        | mg/kg | 07.21.17 18:25 |      |
| m,p-Xylenes  | <0.00402      | 0.201        | 0.173     | 86      | 0.185      | 93       | 70-135 | 7    | 35        | mg/kg | 07.21.17 18:25 |      |
| o-Xylene     | <0.00201      | 0.100        | 0.0883    | 88      | 0.0944     | 94       | 71-133 | 7    | 35        | mg/kg | 07.21.17 18:25 |      |

| Surrogate            | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date  |
|----------------------|---------|---------|----------|----------|--------|-------|----------------|
| 1,4-Difluorobenzene  | 103     |         | 101      |          | 80-120 | %     | 07.21.17 18:25 |
| 4-Bromofluorobenzene | 120     |         | 118      |          | 80-120 | %     | 07.21.17 18:25 |



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| Client / Reporting Information                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                |              |                 | Project Information                                                                             |            |              |            | Analytical Information |            |              |            | Matrix Codes     |            |                  |               |              |            |                  |                          |            |              |            |                  |            |              |            |                  |            |              |            |                  |            |                  |            |              |            |                  |            |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------|-----------------|-------------------------------------------------------------------------------------------------|------------|--------------|------------|------------------------|------------|--------------|------------|------------------|------------|------------------|---------------|--------------|------------|------------------|--------------------------|------------|--------------|------------|------------------|------------|--------------|------------|------------------|------------|--------------|------------|------------------|------------|------------------|------------|--------------|------------|------------------|------------|---|---------|---|---------|---|---------|---|---------|---|---------|---|---------|---|---------|---|---------|---|---------|---|---------|
| Company Name / Branch:<br>COG Operating LLC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                |              |                 | Project Name/Number:<br>Altracuda 31 Fed BTY                                                    |            |              |            |                        |            |              |            |                  |            |                  |               |              |            |                  |                          |            |              |            |                  |            |              |            |                  |            |              |            |                  |            |                  |            |              |            |                  |            |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |
| Company Address:<br>2407 PECOS Avenue Artesia NM 88210                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                |              |                 | Project Location:<br>Altracuda 31 Fed B                                                         |            |              |            |                        |            |              |            |                  |            |                  |               |              |            |                  |                          |            |              |            |                  |            |              |            |                  |            |              |            |                  |            |                  |            |              |            |                  |            |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |
| Email:<br>alleb@concho.com dneel2@concho.com thaskell@concho.com                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                |              |                 | Invoice To:<br>COG Operating LLC<br>Attn: Robert McNeill<br>600 W. Illinois<br>Midland TX 79701 |            |              |            |                        |            |              |            |                  |            |                  |               |              |            |                  |                          |            |              |            |                  |            |              |            |                  |            |              |            |                  |            |                  |            |              |            |                  |            |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |
| Project Contact: Aaron Lieb                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                |              |                 | PO Number:                                                                                      |            |              |            |                        |            |              |            |                  |            |                  |               |              |            |                  |                          |            |              |            |                  |            |              |            |                  |            |              |            |                  |            |                  |            |              |            |                  |            |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |
| Sampler's Name: Aaron Lieb                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                |              |                 |                                                                                                 |            |              |            |                        |            |              |            |                  |            |                  |               |              |            |                  |                          |            |              |            |                  |            |              |            |                  |            |              |            |                  |            |                  |            |              |            |                  |            |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |
| No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Field ID / Point of Collection | Sample Depth | Collection Date | Time                                                                                            | Matrix     | # of bottles | HCl        | NaOH/Zn Acetate        | HNO3       | H2SO4        | NaOH       | NaHSO4           | MeOH       | NONE             | TPH/ EXTENDED | BTEX         | Chloride   | Field Comments   |                          |            |              |            |                  |            |              |            |                  |            |              |            |                  |            |                  |            |              |            |                  |            |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | T1- Surface                    | 1'           | 7/11/17         | 10:00am                                                                                         | S          | 1            |            |                        |            |              |            |                  |            |                  | X             | X            | X          |                  |                          |            |              |            |                  |            |              |            |                  |            |              |            |                  |            |                  |            |              |            |                  |            |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | T1- 1'                         | 2'           |                 |                                                                                                 |            |              |            |                        |            |              |            |                  |            |                  | X             | X            | X          |                  |                          |            |              |            |                  |            |              |            |                  |            |              |            |                  |            |                  |            |              |            |                  |            |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | T1- 2'                         | 3'           |                 |                                                                                                 |            |              |            |                        |            |              |            |                  |            |                  | X             | X            | X          |                  |                          |            |              |            |                  |            |              |            |                  |            |              |            |                  |            |                  |            |              |            |                  |            |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | T1- 3'                         | 4'           |                 |                                                                                                 |            |              |            |                        |            |              |            |                  |            |                  | X             | X            | X          |                  |                          |            |              |            |                  |            |              |            |                  |            |              |            |                  |            |                  |            |              |            |                  |            |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |
| 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | T1- 4'                         | 5'           |                 |                                                                                                 |            |              |            |                        |            |              |            |                  |            |                  | X             | X            | X          |                  |                          |            |              |            |                  |            |              |            |                  |            |              |            |                  |            |                  |            |              |            |                  |            |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |
| 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | T1- 5'                         | 6'           |                 |                                                                                                 |            |              |            |                        |            |              |            |                  |            |                  | X             | X            | X          |                  |                          |            |              |            |                  |            |              |            |                  |            |              |            |                  |            |                  |            |              |            |                  |            |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |
| 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                |              |                 |                                                                                                 |            |              |            |                        |            |              |            |                  |            |                  |               |              |            |                  |                          |            |              |            |                  |            |              |            |                  |            |              |            |                  |            |                  |            |              |            |                  |            |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |
| 8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | T2- Surface                    | 1'           |                 |                                                                                                 |            |              |            |                        |            |              |            |                  |            |                  | X             | X            | X          |                  |                          |            |              |            |                  |            |              |            |                  |            |              |            |                  |            |                  |            |              |            |                  |            |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |
| 9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | T2- 1'                         | 2'           |                 |                                                                                                 |            |              |            |                        |            |              |            |                  |            |                  | X             | X            | X          |                  |                          |            |              |            |                  |            |              |            |                  |            |              |            |                  |            |                  |            |              |            |                  |            |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |
| 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | T2- 2'                         | 3'           |                 |                                                                                                 |            |              |            |                        |            |              |            |                  |            |                  | X             | X            | X          |                  |                          |            |              |            |                  |            |              |            |                  |            |              |            |                  |            |                  |            |              |            |                  |            |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |
| Turnaround Time (Business days)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                |              |                 |                                                                                                 |            |              |            |                        |            |              |            |                  |            |                  |               |              |            |                  |                          |            |              |            |                  |            |              |            |                  |            |              |            |                  |            |                  |            |              |            |                  |            |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |
| Data Deliverable Information                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                |              |                 |                                                                                                 |            |              |            |                        |            |              |            |                  |            |                  |               |              |            |                  |                          |            |              |            |                  |            |              |            |                  |            |              |            |                  |            |                  |            |              |            |                  |            |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |
| <input type="checkbox"/> Same Day TAT <input type="checkbox"/> 5 Day TAT <input type="checkbox"/> Level II Std QC <input type="checkbox"/> Level IV (Full Data Pkg /raw data)<br><input type="checkbox"/> Next Day EMERGENCY <input type="checkbox"/> 7 Day TAT <input type="checkbox"/> Level III Std QC+ Forms <input type="checkbox"/> TRRP Level IV<br><input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> Contract TAT <input type="checkbox"/> Level 3 (CLP Forms) <input type="checkbox"/> UST / RG -411<br><input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> TRRP Checklist                                                                                                                                                                                                                               |                                |              |                 |                                                                                                 |            |              |            |                        |            |              |            |                  |            |                  |               |              |            |                  |                          |            |              |            |                  |            |              |            |                  |            |              |            |                  |            |                  |            |              |            |                  |            |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |
| TAT Starts Day received by Lab, if received by 5:00 pm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                |              |                 |                                                                                                 |            |              |            |                        |            |              |            |                  |            |                  |               |              |            |                  |                          |            |              |            |                  |            |              |            |                  |            |              |            |                  |            |                  |            |              |            |                  |            |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |
| SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                |              |                 |                                                                                                 |            |              |            |                        |            |              |            |                  |            |                  |               |              |            |                  |                          |            |              |            |                  |            |              |            |                  |            |              |            |                  |            |                  |            |              |            |                  |            |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |
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| Relinquished by Sampler:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Date Time:                     | Received By: | Date Time:      | Relinquished By:                                                                                | Date Time: | Received By: | Date Time: | Relinquished By:       | Date Time: | Received By: | Date Time: | Relinquished By: | Date Time: | Relinquished By: | Date Time:    | Received By: | Date Time: | Relinquished By: | Date Time:               |            |              |            |                  |            |              |            |                  |            |              |            |                  |            |                  |            |              |            |                  |            |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 7-17-17                        | 1            | 7-17-17         | 2                                                                                               | 7-17-17    | 3            | 7-17-17    | 4                      | 7-17-17    | 5            | 7-17-17    | 6                | 7-17-17    | 7                | 7-17-17       | 8            | 7-17-17    | 9                | 7-17-17                  |            |              |            |                  |            |              |            |                  |            |              |            |                  |            |                  |            |              |            |                  |            |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |
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| Relinquished by:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Date Time:                     | Received By: | Date Time:      | Relinquished By:                                                                                | Date Time: | Received By: | Date Time: | Relinquished By:       | Date Time: | Received By: | Date Time: | Relinquished By: | Date Time: | Relinquished By: | Date Time:    | Received By: | Date Time: | Relinquished By: | Date Time:               |            |              |            |                  |            |              |            |                  |            |              |            |                  |            |                  |            |              |            |                  |            |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 7-17-17                        | 1            | 7-17-17         | 2                                                                                               | 7-17-17    | 3            | 7-17-17    | 4                      | 7-17-17    | 5            | 7-17-17    | 6                | 7-17-17    | 7                | 7-17-17       | 8            | 7-17-17    | 9                | 7-17-17                  |            |              |            |                  |            |              |            |                  |            |              |            |                  |            |                  |            |              |            |                  |            |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |
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| Relinquished by:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Date Time:                     | Received By: | Date Time:      | Relinquished By:                                                                                | Date Time: | Received By: | Date Time: | Relinquished By:       | Date Time: | Received By: | Date Time: | Relinquished By: | Date Time: | Relinquished By: | Date Time:    | Received By: | Date Time: | Relinquished By: | Date Time:               |            |              |            |                  |            |              |            |                  |            |              |            |                  |            |                  |            |              |            |                  |            |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 7-17-17                        | 1            | 7-17-17         | 2                                                                                               | 7-17-17    | 3            | 7-17-17    | 4                      | 7-17-17    | 5            | 7-17-17    | 6                | 7-17-17    | 7                | 7-17-17       | 8            | 7-17-17    | 9                | 7-17-17                  |            |              |            |                  |            |              |            |                  |            |              |            |                  |            |                  |            |              |            |                  |            |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |
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| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 7-17-17                        | 1            | 7-17-17         | 2                                                                                               | 7-17-17    | 3            | 7-17-17    | 4                      | 7-17-17    | 5            | 7-17-17    | 6                | 7-17-17    | 7                | 7-17-17       | 8            | 7-17-17    | 9                | 7-17-17                  |            |              |            |                  |            |              |            |                  |            |              |            |                  |            |                  |            |              |            |                  |            |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |
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| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 7-17-17                        | 1            | 7-17-17         | 2                                                                                               | 7-17-17    | 3            | 7-17-17    | 4                      | 7-17-17    | 5            | 7-17-17    | 6                | 7-17-17    | 7                | 7-17-17       | 8            | 7-17-17    | 9                | 7-17-17                  |            |              |            |                  |            |              |            |                  |            |              |            |                  |            |                  |            |              |            |                  |            |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |
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| Relinquished by:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Date Time:                     | Received By: | Date Time:      | Relinquished By:                                                                                | Date Time: | Received By: | Date Time: | Relinquished By:       | Date Time: | Received By: | Date Time: | Relinquished By: | Date Time: | Relinquished By: | Date Time:    | Received By: | Date Time: | Relinquished By: | Date Time:               |            |              |            |                  |            |              |            |                  |            |              |            |                  |            |                  |            |              |            |                  |            |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 7-17-17                        | 1            | 7-17-17         | 2                                                                                               | 7-17-17    | 3            | 7-17-17    | 4                      | 7-17-17    | 5            | 7-17-17    | 6                | 7-17-17    | 7                | 7-17-17       | 8            | 7-17-17    | 9                | 7-17-17                  |            |              |            |                  |            |              |            |                  |            |              |            |                  |            |                  |            |              |            |                  |            |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |
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| Relinquished by:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Date Time:                     | Received By: | Date Time:      | Relinquished By:                                                                                | Date Time: | Received By: | Date Time: | Relinquished By:       | Date Time: | Received By: | Date Time: | Relinquished By: | Date Time: | Relinquished By: | Date Time:    | Received By: | Date Time: | Relinquished By: | Date Time:               |            |              |            |                  |            |              |            |                  |            |              |            |                  |            |                  |            |              |            |                  |            |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 7-17-17                        | 1            | 7-17-17         | 2                                                                                               | 7-17-17    | 3            | 7-17-17    | 4                      | 7-17-17    | 5            | 7-17-17    | 6                | 7-17-17    | 7                | 7-17-17       | 8            | 7-17-17    | 9                | 7-17-17                  |            |              |            |                  |            |              |            |                  |            |              |            |                  |            |                  |            |              |            |                  |            |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |
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| Relinquished by:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Date Time:                     | Received By: | Date Time:      | Relinquished By:                                                                                | Date Time: | Received By: | Date Time: | Relinquished By:       | Date Time: | Received By: | Date Time: | Relinquished By: | Date Time: | Relinquished By: | Date Time:    | Received By: | Date Time: | Relinquished By: | Date Time:               |            |              |            |                  |            |              |            |                  |            |              |            |                  |            |                  |            |              |            |                  |            |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 7-17-17                        | 1            | 7-17-17         | 2                                                                                               | 7-17-17    | 3            | 7-17-17    | 4                      | 7-17-17    | 5            | 7-17-17    | 6                | 7-17-17    | 7                | 7-17-17       | 8            | 7-17-17    | 9                | 7-17-17                  |            |              |            |                  |            |              |            |                  |            |              |            |                  |            |                  |            |              |            |                  |            |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |
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| Relinquished by:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Date Time:                     | Received By: | Date Time:      | Relinquished By:                                                                                | Date Time: | Received By: | Date Time: | Relinquished By:       | Date Time: | Received By: | Date Time: | Relinquished By: | Date Time: | Relinquished By: | Date Time:    | Received By: | Date Time: | Relinquished By: | Date Time:               |            |              |            |                  |            |              |            |                  |            |              |            |                  |            |                  |            |              |            |                  |            |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 7-17-17                        | 1            | 7-17-17         | 2                                                                                               | 7-17-17    | 3            | 7-17-17    | 4                      | 7-17-17    | 5            | 7-17-17    | 6                | 7-17-17    | 7                | 7-17-17       | 8            | 7-17-17    | 9                | 7-17-17                  |            |              |            |                  |            |              |            |                  |            |              |            |                  |            |                  |            |              |            |                  |            |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |
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| Relinquished by:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Date Time:                     | Received By: | Date Time:      | Relinquished By:                                                                                | Date Time: | Received By: | Date Time: | Relinquished By:       | Date Time: | Received By: | Date Time: | Relinquished By: | Date Time: | Relinquished By  |               |              |            |                  |                          |            |              |            |                  |            |              |            |                  |            |              |            |                  |            |                  |            |              |            |                  |            |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |   |         |



Setting the Standard since 1990  
 Stamford, Texas (281-240-4200)  
 Dallas Texas (214-902-0300)

# CHAIN OF CUSTODY

Page 2 of 2

San Antonio, Texas (210-509-3334)  
 Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

www.xenco.com

557823

| Client / Reporting Information                                  |                                |            |              | Project Information                                                                                     |         |        |              | Analytical Information |                 |      |       | Matrix Codes |        |      |      |               |      |          |                |
|-----------------------------------------------------------------|--------------------------------|------------|--------------|---------------------------------------------------------------------------------------------------------|---------|--------|--------------|------------------------|-----------------|------|-------|--------------|--------|------|------|---------------|------|----------|----------------|
| Company Name / Branch:<br>COG Operating LLC                     |                                |            |              | Project Name/Number:<br>Atracuda 31 Fed BTY                                                             |         |        |              |                        |                 |      |       |              |        |      |      |               |      |          |                |
| Company Address:<br>2407 PECOS Avenue Artesia NM 88210          |                                |            |              | Project Location:<br>Atracuda 31 Fed B                                                                  |         |        |              |                        |                 |      |       |              |        |      |      |               |      |          |                |
| Email:<br>alieb@concho.com dneel2@concho.com ruskell@concho.com |                                |            |              | Invoice To: COG Operating LLC<br>Attn: Robert McNeill<br>600 W. Illinois<br>Midland TX 79701            |         |        |              |                        |                 |      |       |              |        |      |      |               |      |          |                |
| Project Contact: Aaron Lieb                                     |                                |            |              | PO Number:                                                                                              |         |        |              |                        |                 |      |       |              |        |      |      |               |      |          |                |
| Sampler's Name: Aaron Lieb                                      |                                |            |              |                                                                                                         |         |        |              |                        |                 |      |       |              |        |      |      |               |      |          |                |
| No.                                                             | Field ID / Point of Collection | Collection | Sample Depth | Date                                                                                                    | Time    | Matrix | # of bottles | HCl                    | NaOH/Zn Acetate | HNO3 | H2SO4 | NaOH         | NaHSO4 | MEOH | NONE | TPH/ EXTENDED | BTEX | Chloride | Field Comments |
| 1                                                               | Ta-3'                          |            | 3            | 7/11/17                                                                                                 | 10:00am | S      | 1            |                        |                 |      |       |              |        |      |      |               |      |          |                |
| 2                                                               | Ta-4'                          |            | 4            |                                                                                                         |         |        |              |                        |                 |      |       |              |        |      |      |               |      |          |                |
| 3                                                               | Ta-6'                          |            | 6            |                                                                                                         |         |        |              |                        |                 |      |       |              |        |      |      |               |      |          |                |
| 4                                                               |                                |            |              |                                                                                                         |         |        |              |                        |                 |      |       |              |        |      |      |               |      |          |                |
| 5                                                               |                                |            |              |                                                                                                         |         |        |              |                        |                 |      |       |              |        |      |      |               |      |          |                |
| 6                                                               |                                |            |              |                                                                                                         |         |        |              |                        |                 |      |       |              |        |      |      |               |      |          |                |
| 7                                                               |                                |            |              |                                                                                                         |         |        |              |                        |                 |      |       |              |        |      |      |               |      |          |                |
| 8                                                               |                                |            |              |                                                                                                         |         |        |              |                        |                 |      |       |              |        |      |      |               |      |          |                |
| 9                                                               |                                |            |              |                                                                                                         |         |        |              |                        |                 |      |       |              |        |      |      |               |      |          |                |
| 10                                                              |                                |            |              |                                                                                                         |         |        |              |                        |                 |      |       |              |        |      |      |               |      |          |                |
| Turnaround Time (Business days)                                 |                                |            |              |                                                                                                         |         |        |              |                        |                 |      |       |              |        |      |      |               |      |          |                |
| Same Day TAT                                                    |                                |            |              | <input type="checkbox"/> 5 Day TAT                                                                      |         |        |              |                        |                 |      |       |              |        |      |      |               |      |          |                |
| Next Day EMERGENCY                                              |                                |            |              | <input type="checkbox"/> 7 Day TAT                                                                      |         |        |              |                        |                 |      |       |              |        |      |      |               |      |          |                |
| 2 Day EMERGENCY                                                 |                                |            |              | <input type="checkbox"/> Contract TAT                                                                   |         |        |              |                        |                 |      |       |              |        |      |      |               |      |          |                |
| 3 Day EMERGENCY                                                 |                                |            |              | <input type="checkbox"/> TRRP Checklist                                                                 |         |        |              |                        |                 |      |       |              |        |      |      |               |      |          |                |
| TAT Starts Day received by Lab, if received by 5:00 pm          |                                |            |              |                                                                                                         |         |        |              |                        |                 |      |       |              |        |      |      |               |      |          |                |
| Relinquished by Sampler:                                        |                                |            |              | SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY |         |        |              |                        |                 |      |       |              |        |      |      |               |      |          |                |
| Date Time:                                                      |                                |            |              | Received By:                                                                                            |         |        |              |                        |                 |      |       |              |        |      |      |               |      |          |                |
| 1                                                               |                                |            |              | 1                                                                                                       |         |        |              |                        |                 |      |       |              |        |      |      |               |      |          |                |
| Relinquished by:                                                |                                |            |              | Date Time:                                                                                              |         |        |              |                        |                 |      |       |              |        |      |      |               |      |          |                |
| 3                                                               |                                |            |              | 3                                                                                                       |         |        |              |                        |                 |      |       |              |        |      |      |               |      |          |                |
| Relinquished by:                                                |                                |            |              | Date Time:                                                                                              |         |        |              |                        |                 |      |       |              |        |      |      |               |      |          |                |
| 5                                                               |                                |            |              | 5                                                                                                       |         |        |              |                        |                 |      |       |              |        |      |      |               |      |          |                |
| FED-EX / UPS: Tracking #                                        |                                |            |              |                                                                                                         |         |        |              |                        |                 |      |       |              |        |      |      |               |      |          |                |



# XENCO Laboratories

## Prelogin/Nonconformance Report- Sample Log-In

Client: COG Operating LLC

Date/ Time Received: 07/17/2017 11:45:00 AM

Work Order #: 557823

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

**Sample Receipt Checklist****Comments**

|                                                            |     |
|------------------------------------------------------------|-----|
| #1 *Temperature of cooler(s)?                              | 1.2 |
| #2 *Shipping container in good condition?                  | Yes |
| #3 *Samples received on ice?                               | Yes |
| #4 *Custody Seal present on shipping container/ cooler?    | Yes |
| #5 *Custody Seals intact on shipping container/ cooler?    | Yes |
| #6 Custody Seals intact on sample bottles?                 | Yes |
| #7 *Custody Seals Signed and dated?                        | Yes |
| #8 *Chain of Custody present?                              | Yes |
| #9 Sample instructions complete on Chain of Custody?       | Yes |
| #10 Any missing/extra samples?                             | No  |
| #11 Chain of Custody signed when relinquished/ received?   | Yes |
| #12 Chain of Custody agrees with sample label(s)?          | Yes |
| #13 Container label(s) legible and intact?                 | Yes |
| #14 Sample matrix/ properties agree with Chain of Custody? | Yes |
| #15 Samples in proper container/ bottle?                   | Yes |
| #16 Samples properly preserved?                            | Yes |
| #17 Sample container(s) intact?                            | Yes |
| #18 Sufficient sample amount for indicated test(s)?        | Yes |
| #19 All samples received within hold time?                 | Yes |
| #20 Subcontract of sample(s)?                              | No  |
| #21 VOC samples have zero headspace?                       | N/A |

\* Must be completed for after-hours delivery of samples prior to placing in the refrigerator

Analyst:

PH Device/Lot#:

Checklist completed by:

Shawnee Smith

Date: 07/18/2017

Checklist reviewed by:

Kelsey Brooks

Date: 07/18/2017



# Certificate of Analysis Summary 557825

COG Operating LLC, Artesia, NM

Project Name: Airacuda 31 Fed BTY



Project Id:

Contact: Aaron Lieb

Project Location: Airacuda 31 Fed B

Date Received in Lab: Mon Jul-17-17 11:45 am

Report Date: 25-JUL-17

Project Manager: Kelsey Brooks

| <i>Analysis Requested</i>                | <i>Lab Id:</i>    | 557825-001       | 557825-002       | 557825-003       | 557825-004       | 557825-005       | 557825-006       |
|------------------------------------------|-------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|                                          | <i>Field Id:</i>  | North- Surf      | North- 1'        | South- Surf      | South- 1'        | East-Surf        | East- 1'         |
|                                          | <i>Depth:</i>     |                  | 1- ft            |                  | 1- ft            |                  | 1- ft            |
|                                          | <i>Matrix:</i>    | SOIL             | SOIL             | SOIL             | SOIL             | SOIL             | SOIL             |
|                                          | <i>Sampled:</i>   | Jul-11-17 11:00  | Jul-11-17 11:00  | Jul-11-17 11:00  | Jul-11-17 11:00  | Jul-11-17 11:00  | Jul-11-17 11:00  |
| <b>BTEX by EPA 8021B</b>                 | <i>Extracted:</i> | Jul-21-17 14:00  | Jul-21-17 14:00  | Jul-21-17 14:00  | Jul-21-17 14:00  | Jul-21-17 14:00  | Jul-21-17 14:00  |
|                                          | <i>Analyzed:</i>  | Jul-21-17 22:49  | Jul-21-17 23:45  | Jul-22-17 00:04  | Jul-22-17 00:23  | Jul-22-17 00:41  | Jul-22-17 01:00  |
|                                          | <i>Units/RL:</i>  | mg/kg RL         | mg/kg RL         | mg/kg RL         | mg/kg RL         | mg/kg RL         | mg/kg RL         |
| Benzene                                  |                   | <0.00198 0.00198 | <0.00201 0.00201 | <0.00202 0.00202 | <0.00200 0.00200 | <0.00199 0.00199 | <0.00198 0.00198 |
| Toluene                                  |                   | <0.00198 0.00198 | <0.00201 0.00201 | <0.00202 0.00202 | <0.00200 0.00200 | <0.00199 0.00199 | <0.00198 0.00198 |
| Ethylbenzene                             |                   | <0.00198 0.00198 | <0.00201 0.00201 | <0.00202 0.00202 | <0.00200 0.00200 | <0.00199 0.00199 | <0.00198 0.00198 |
| m,p-Xylenes                              |                   | <0.00396 0.00396 | <0.00402 0.00402 | <0.00404 0.00404 | <0.00401 0.00401 | <0.00398 0.00398 | <0.00396 0.00396 |
| o-Xylene                                 |                   | <0.00198 0.00198 | <0.00201 0.00201 | <0.00202 0.00202 | <0.00200 0.00200 | <0.00199 0.00199 | <0.00198 0.00198 |
| Total Xylenes                            |                   | <0.00198 0.00198 | <0.00201 0.00201 | <0.00202 0.00202 | <0.00200 0.00200 | <0.00199 0.00199 | <0.00198 0.00198 |
| Total BTEX                               |                   | <0.00198 0.00198 | <0.00201 0.00201 | <0.00202 0.00202 | <0.00200 0.00200 | <0.00199 0.00199 | <0.00198 0.00198 |
| <b>Inorganic Anions by EPA 300/300.1</b> | <i>Extracted:</i> | Jul-21-17 17:00  | Jul-24-17 08:30  | Jul-24-17 08:30  | Jul-24-17 08:30  | Jul-24-17 08:30  | Jul-24-17 08:30  |
|                                          | <i>Analyzed:</i>  | Jul-22-17 06:40  | Jul-24-17 23:15  | Jul-24-17 23:23  | Jul-24-17 23:30  | Jul-24-17 23:38  | Jul-24-17 23:46  |
|                                          | <i>Units/RL:</i>  | mg/kg RL         | mg/kg RL         | mg/kg RL         | mg/kg RL         | mg/kg RL         | mg/kg RL         |
| Chloride                                 |                   | 6.65 4.93        | <5.00 5.00       | 5.00 4.90        | <5.02 5.02       | 6.39 4.95        | 11.2 5.02        |
| <b>TPH By SW8015 Mod</b>                 | <i>Extracted:</i> | Jul-19-17 18:00  | Jul-19-17 18:00  | Jul-19-17 18:00  | Jul-19-17 18:00  | Jul-19-17 18:00  | Jul-19-17 18:00  |
|                                          | <i>Analyzed:</i>  | Jul-20-17 10:00  | Jul-20-17 10:23  | Jul-20-17 10:45  | Jul-20-17 11:07  | Jul-20-17 11:28  | Jul-20-17 11:50  |
|                                          | <i>Units/RL:</i>  | mg/kg RL         | mg/kg RL         | mg/kg RL         | mg/kg RL         | mg/kg RL         | mg/kg RL         |
| Gasoline Range Hydrocarbons (GRO)        |                   | <15.0 15.0       | <14.9 14.9       | <14.9 14.9       | <15.0 15.0       | <15.0 15.0       | <15.0 15.0       |
| Diesel Range Organics (DRO)              |                   | <15.0 15.0       | <14.9 14.9       | <14.9 14.9       | <15.0 15.0       | <15.0 15.0       | <15.0 15.0       |
| Oil Range Hydrocarbons (ORO)             |                   | <15.0 15.0       | <14.9 14.9       | <14.9 14.9       | <15.0 15.0       | <15.0 15.0       | <15.0 15.0       |
| Total TPH                                |                   | <15.0 15.0       | <14.9 14.9       | <14.9 14.9       | <15.0 15.0       | <15.0 15.0       | <15.0 15.0       |

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Kelsey Brooks  
Project Manager



# Certificate of Analysis Summary 557825

COG Operating LLC, Artesia, NM

Project Name: Airacuda 31 Fed BTY



Project Id:

Contact: Aaron Lieb

Project Location: Airacuda 31 Fed B

Date Received in Lab: Mon Jul-17-17 11:45 am

Report Date: 25-JUL-17

Project Manager: Kelsey Brooks

|                                          |                   |                  |                  |  |  |  |  |
|------------------------------------------|-------------------|------------------|------------------|--|--|--|--|
| <b>Analysis Requested</b>                | <b>Lab Id:</b>    | 557825-007       | 557825-008       |  |  |  |  |
|                                          | <b>Field Id:</b>  | West- Surf       | West- 1'         |  |  |  |  |
|                                          | <b>Depth:</b>     |                  | 1- ft            |  |  |  |  |
|                                          | <b>Matrix:</b>    | SOIL             | SOIL             |  |  |  |  |
|                                          | <b>Sampled:</b>   | Jul-11-17 11:00  | Jul-11-17 11:00  |  |  |  |  |
| <b>BTEX by EPA 8021B</b>                 | <b>Extracted:</b> | Jul-24-17 08:00  | Jul-21-17 14:00  |  |  |  |  |
|                                          | <b>Analyzed:</b>  | Jul-24-17 11:45  | Jul-22-17 01:36  |  |  |  |  |
|                                          | <b>Units/RL:</b>  | mg/kg RL         | mg/kg RL         |  |  |  |  |
| Benzene                                  |                   | <0.00341 0.00341 | <0.00200 0.00200 |  |  |  |  |
| Toluene                                  |                   | <0.00341 0.00341 | <0.00200 0.00200 |  |  |  |  |
| Ethylbenzene                             |                   | 0.00527 0.00341  | <0.00200 0.00200 |  |  |  |  |
| m,p-Xylenes                              |                   | 0.0296 0.00683   | <0.00399 0.00399 |  |  |  |  |
| o-Xylene                                 |                   | 0.0202 0.00341   | <0.00200 0.00200 |  |  |  |  |
| Total Xylenes                            |                   | 0.0498 0.00341   | <0.00200 0.00200 |  |  |  |  |
| Total BTEX                               |                   | 0.0551 0.00341   | <0.00200 0.00200 |  |  |  |  |
| <b>Inorganic Anions by EPA 300/300.1</b> | <b>Extracted:</b> | Jul-24-17 08:30  | Jul-24-17 08:30  |  |  |  |  |
|                                          | <b>Analyzed:</b>  | Jul-24-17 23:53  | Jul-25-17 00:01  |  |  |  |  |
|                                          | <b>Units/RL:</b>  | mg/kg RL         | mg/kg RL         |  |  |  |  |
| Chloride                                 |                   | <5.02 5.02       | <4.94 4.94       |  |  |  |  |
| <b>TPH By SW8015 Mod</b>                 | <b>Extracted:</b> | Jul-19-17 18:00  | Jul-19-17 18:00  |  |  |  |  |
|                                          | <b>Analyzed:</b>  | Jul-20-17 12:12  | Jul-20-17 12:35  |  |  |  |  |
|                                          | <b>Units/RL:</b>  | mg/kg RL         | mg/kg RL         |  |  |  |  |
| Gasoline Range Hydrocarbons (GRO)        |                   | 29.2 15.0        | <15.0 15.0       |  |  |  |  |
| Diesel Range Organics (DRO)              |                   | 16.0 15.0        | <15.0 15.0       |  |  |  |  |
| Oil Range Hydrocarbons (ORO)             |                   | <15.0 15.0       | <15.0 15.0       |  |  |  |  |
| Total TPH                                |                   | 45.2 15.0        | <15.0 15.0       |  |  |  |  |

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Kelsey Brooks  
Project Manager

# Analytical Report 557825

for  
**COG Operating LLC**

**Project Manager: Aaron Lieb**

**Airacuda 31 Fed BTY**

**25-JUL-17**

Collected By: Client



**1211 W. Florida Ave, Midland TX 79701**

Xenco-Houston (EPA Lab code: TX00122):  
Texas (T104704215), Arizona (AZ0765), Florida (E871002), Louisiana (03054)  
Oklahoma (9218)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295)  
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400)  
Xenco-San Antonio: Texas (T104704534)  
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)  
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)



25-JUL-17

Project Manager: **Aaron Lieb**

**COG Operating LLC**

2407 Pecos Avenue

Artesia, NM 88210

Reference: XENCO Report No(s): **557825**

**Airacuda 31 Fed BTY**

Project Address: Airacuda 31 Fed B

**Aaron Lieb:**

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 557825. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 557825 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

A handwritten signature in black ink, appearing to read 'Kelsey Brooks', written over a horizontal line.

**Kelsey Brooks**

Project Manager

***Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.***

*Certified and approved by numerous States and Agencies.*

*A Small Business and Minority Status Company that delivers SERVICE and QUALITY*

Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America

**Sample Cross Reference 557825****COG Operating LLC, Artesia, NM**

Airacuda 31 Fed BTY

| Sample Id   | Matrix | Date Collected | Sample Depth | Lab Sample Id |
|-------------|--------|----------------|--------------|---------------|
| North- Surf | S      | 07-11-17 11:00 |              | 557825-001    |
| North- 1'   | S      | 07-11-17 11:00 | 1 ft         | 557825-002    |
| South- Surf | S      | 07-11-17 11:00 |              | 557825-003    |
| South- 1'   | S      | 07-11-17 11:00 | 1 ft         | 557825-004    |
| East-Surf   | S      | 07-11-17 11:00 |              | 557825-005    |
| East- 1'    | S      | 07-11-17 11:00 | 1 ft         | 557825-006    |
| West- Surf  | S      | 07-11-17 11:00 |              | 557825-007    |
| West- 1'    | S      | 07-11-17 11:00 | 1 ft         | 557825-008    |



## CASE NARRATIVE

**Client Name: COG Operating LLC**

**Project Name: Airacuda 31 Fed BTY**

Project ID:

Work Order Number(s): 557825

Report Date: 25-JUL-17

Date Received: 07/17/2017

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### **Sample receipt non conformances and comments:**

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#### **Sample receipt non conformances and comments per sample:**

None

#### **Analytical non conformances and comments:**

Batch: LBA-3022986 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3023055 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.



# Certificate of Analytical Results 557825



## COG Operating LLC, Artesia, NM

Airacuda 31 Fed BTY

Sample Id: **North- Surf**

Matrix: Soil

Date Received: 07.17.17 11.45

Lab Sample Id: 557825-001

Date Collected: 07.11.17 11.00

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 07.21.17 17.00

Basis: Wet Weight

Seq Number: 3023111

| Parameter | Cas Number | Result | RL   | Units | Analysis Date  | Flag | Dil |
|-----------|------------|--------|------|-------|----------------|------|-----|
| Chloride  | 16887-00-6 | 6.65   | 4.93 | mg/kg | 07.22.17 06.40 |      | 1   |

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 07.19.17 18.00

Basis: Wet Weight

Seq Number: 3022910

| Parameter                         | Cas Number        | Result            | RL           | Units         | Analysis Date        | Flag        | Dil |
|-----------------------------------|-------------------|-------------------|--------------|---------------|----------------------|-------------|-----|
| Gasoline Range Hydrocarbons (GRO) | PHC610            | <15.0             | 15.0         | mg/kg         | 07.20.17 10.00       | U           | 1   |
| Diesel Range Organics (DRO)       | C10C28DRO         | <15.0             | 15.0         | mg/kg         | 07.20.17 10.00       | U           | 1   |
| Oil Range Hydrocarbons (ORO)      | PHCG2835          | <15.0             | 15.0         | mg/kg         | 07.20.17 10.00       | U           | 1   |
| Total TPH                         | PHC635            | <15.0             | 15.0         | mg/kg         | 07.20.17 10.00       | U           | 1   |
| <b>Surrogate</b>                  | <b>Cas Number</b> | <b>% Recovery</b> | <b>Units</b> | <b>Limits</b> | <b>Analysis Date</b> | <b>Flag</b> |     |
| 1-Chlorooctane                    | 111-85-3          | 102               | %            | 70-135        | 07.20.17 10.00       |             |     |
| o-Terphenyl                       | 84-15-1           | 107               | %            | 70-135        | 07.20.17 10.00       |             |     |



# Certificate of Analytical Results 557825



## COG Operating LLC, Artesia, NM

Airacuda 31 Fed BTY

Sample Id: **North- Surf**

Matrix: Soil

Date Received: 07.17.17 11.45

Lab Sample Id: 557825-001

Date Collected: 07.11.17 11.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 07.21.17 14.00

Basis: Wet Weight

Seq Number: 3022986

| Parameter            | Cas Number        | Result            | RL           | Units         | Analysis Date        | Flag        | Dil |
|----------------------|-------------------|-------------------|--------------|---------------|----------------------|-------------|-----|
| Benzene              | 71-43-2           | <0.00198          | 0.00198      | mg/kg         | 07.21.17 22.49       | U           | 1   |
| Toluene              | 108-88-3          | <0.00198          | 0.00198      | mg/kg         | 07.21.17 22.49       | U           | 1   |
| Ethylbenzene         | 100-41-4          | <0.00198          | 0.00198      | mg/kg         | 07.21.17 22.49       | U           | 1   |
| m,p-Xylenes          | 179601-23-1       | <0.00396          | 0.00396      | mg/kg         | 07.21.17 22.49       | U           | 1   |
| o-Xylene             | 95-47-6           | <0.00198          | 0.00198      | mg/kg         | 07.21.17 22.49       | U           | 1   |
| Total Xylenes        | 1330-20-7         | <0.00198          | 0.00198      | mg/kg         | 07.21.17 22.49       | U           | 1   |
| Total BTEX           |                   | <0.00198          | 0.00198      | mg/kg         | 07.21.17 22.49       | U           | 1   |
| <b>Surrogate</b>     | <b>Cas Number</b> | <b>% Recovery</b> | <b>Units</b> | <b>Limits</b> | <b>Analysis Date</b> | <b>Flag</b> |     |
| 4-Bromofluorobenzene | 460-00-4          | 110               | %            | 80-120        | 07.21.17 22.49       |             |     |
| 1,4-Difluorobenzene  | 540-36-3          | 99                | %            | 80-120        | 07.21.17 22.49       |             |     |



# Certificate of Analytical Results 557825



## COG Operating LLC, Artesia, NM

Airacuda 31 Fed BTY

Sample Id: **North- 1'**  
Lab Sample Id: 557825-002

Matrix: Soil  
Date Collected: 07.11.17 11.00

Date Received: 07.17.17 11.45  
Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MGO

Analyst: MGO

Seq Number: 3023111

Date Prep: 07.24.17 08.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

| Parameter | Cas Number | Result | RL   | Units | Analysis Date  | Flag | Dil |
|-----------|------------|--------|------|-------|----------------|------|-----|
| Chloride  | 16887-00-6 | <5.00  | 5.00 | mg/kg | 07.24.17 23.15 | U    | 1   |

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3022910

Date Prep: 07.19.17 18.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

| Parameter                         | Cas Number        | Result            | RL           | Units         | Analysis Date        | Flag        | Dil |
|-----------------------------------|-------------------|-------------------|--------------|---------------|----------------------|-------------|-----|
| Gasoline Range Hydrocarbons (GRO) | PHC610            | <14.9             | 14.9         | mg/kg         | 07.20.17 10.23       | U           | 1   |
| Diesel Range Organics (DRO)       | C10C28DRO         | <14.9             | 14.9         | mg/kg         | 07.20.17 10.23       | U           | 1   |
| Oil Range Hydrocarbons (ORO)      | PHCG2835          | <14.9             | 14.9         | mg/kg         | 07.20.17 10.23       | U           | 1   |
| Total TPH                         | PHC635            | <14.9             | 14.9         | mg/kg         | 07.20.17 10.23       | U           | 1   |
| <b>Surrogate</b>                  | <b>Cas Number</b> | <b>% Recovery</b> | <b>Units</b> | <b>Limits</b> | <b>Analysis Date</b> | <b>Flag</b> |     |
| 1-Chlorooctane                    | 111-85-3          | 97                | %            | 70-135        | 07.20.17 10.23       |             |     |
| o-Terphenyl                       | 84-15-1           | 105               | %            | 70-135        | 07.20.17 10.23       |             |     |



# Certificate of Analytical Results 557825



## COG Operating LLC, Artesia, NM

Airacuda 31 Fed BTY

Sample Id: **North- 1'**  
Lab Sample Id: 557825-002

Matrix: Soil  
Date Collected: 07.11.17 11.00

Date Received: 07.17.17 11.45  
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3022986

Date Prep: 07.21.17 14.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

| Parameter            | Cas Number        | Result            | RL           | Units         | Analysis Date        | Flag        | Dil |
|----------------------|-------------------|-------------------|--------------|---------------|----------------------|-------------|-----|
| Benzene              | 71-43-2           | <0.00201          | 0.00201      | mg/kg         | 07.21.17 23.45       | U           | 1   |
| Toluene              | 108-88-3          | <0.00201          | 0.00201      | mg/kg         | 07.21.17 23.45       | U           | 1   |
| Ethylbenzene         | 100-41-4          | <0.00201          | 0.00201      | mg/kg         | 07.21.17 23.45       | U           | 1   |
| m,p-Xylenes          | 179601-23-1       | <0.00402          | 0.00402      | mg/kg         | 07.21.17 23.45       | U           | 1   |
| o-Xylene             | 95-47-6           | <0.00201          | 0.00201      | mg/kg         | 07.21.17 23.45       | U           | 1   |
| Total Xylenes        | 1330-20-7         | <0.00201          | 0.00201      | mg/kg         | 07.21.17 23.45       | U           | 1   |
| Total BTEX           |                   | <0.00201          | 0.00201      | mg/kg         | 07.21.17 23.45       | U           | 1   |
| <b>Surrogate</b>     | <b>Cas Number</b> | <b>% Recovery</b> | <b>Units</b> | <b>Limits</b> | <b>Analysis Date</b> | <b>Flag</b> |     |
| 1,4-Difluorobenzene  | 540-36-3          | 96                | %            | 80-120        | 07.21.17 23.45       |             |     |
| 4-Bromofluorobenzene | 460-00-4          | 105               | %            | 80-120        | 07.21.17 23.45       |             |     |



# Certificate of Analytical Results 557825



## COG Operating LLC, Artesia, NM

Airacuda 31 Fed BTY

Sample Id: **South- Surf**

Matrix: Soil

Date Received: 07.17.17 11.45

Lab Sample Id: 557825-003

Date Collected: 07.11.17 11.00

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 07.24.17 08.30

Basis: Wet Weight

Seq Number: 3023111

| Parameter | Cas Number | Result | RL   | Units | Analysis Date  | Flag | Dil |
|-----------|------------|--------|------|-------|----------------|------|-----|
| Chloride  | 16887-00-6 | 5.00   | 4.90 | mg/kg | 07.24.17 23.23 |      | 1   |

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 07.19.17 18.00

Basis: Wet Weight

Seq Number: 3022910

| Parameter                         | Cas Number        | Result            | RL           | Units         | Analysis Date        | Flag        | Dil |
|-----------------------------------|-------------------|-------------------|--------------|---------------|----------------------|-------------|-----|
| Gasoline Range Hydrocarbons (GRO) | PHC610            | <14.9             | 14.9         | mg/kg         | 07.20.17 10.45       | U           | 1   |
| Diesel Range Organics (DRO)       | C10C28DRO         | <14.9             | 14.9         | mg/kg         | 07.20.17 10.45       | U           | 1   |
| Oil Range Hydrocarbons (ORO)      | PHCG2835          | <14.9             | 14.9         | mg/kg         | 07.20.17 10.45       | U           | 1   |
| Total TPH                         | PHC635            | <14.9             | 14.9         | mg/kg         | 07.20.17 10.45       | U           | 1   |
| <b>Surrogate</b>                  | <b>Cas Number</b> | <b>% Recovery</b> | <b>Units</b> | <b>Limits</b> | <b>Analysis Date</b> | <b>Flag</b> |     |
| 1-Chlorooctane                    | 111-85-3          | 113               | %            | 70-135        | 07.20.17 10.45       |             |     |
| o-Terphenyl                       | 84-15-1           | 120               | %            | 70-135        | 07.20.17 10.45       |             |     |



# Certificate of Analytical Results 557825



## COG Operating LLC, Artesia, NM

Airacuda 31 Fed BTY

Sample Id: **South- Surf**

Matrix: Soil

Date Received: 07.17.17 11.45

Lab Sample Id: 557825-003

Date Collected: 07.11.17 11.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 07.21.17 14.00

Basis: Wet Weight

Seq Number: 3022986

| Parameter            | Cas Number        | Result            | RL           | Units         | Analysis Date        | Flag        | Dil |
|----------------------|-------------------|-------------------|--------------|---------------|----------------------|-------------|-----|
| Benzene              | 71-43-2           | <0.00202          | 0.00202      | mg/kg         | 07.22.17 00.04       | U           | 1   |
| Toluene              | 108-88-3          | <0.00202          | 0.00202      | mg/kg         | 07.22.17 00.04       | U           | 1   |
| Ethylbenzene         | 100-41-4          | <0.00202          | 0.00202      | mg/kg         | 07.22.17 00.04       | U           | 1   |
| m,p-Xylenes          | 179601-23-1       | <0.00404          | 0.00404      | mg/kg         | 07.22.17 00.04       | U           | 1   |
| o-Xylene             | 95-47-6           | <0.00202          | 0.00202      | mg/kg         | 07.22.17 00.04       | U           | 1   |
| Total Xylenes        | 1330-20-7         | <0.00202          | 0.00202      | mg/kg         | 07.22.17 00.04       | U           | 1   |
| Total BTEX           |                   | <0.00202          | 0.00202      | mg/kg         | 07.22.17 00.04       | U           | 1   |
| <b>Surrogate</b>     | <b>Cas Number</b> | <b>% Recovery</b> | <b>Units</b> | <b>Limits</b> | <b>Analysis Date</b> | <b>Flag</b> |     |
| 4-Bromofluorobenzene | 460-00-4          | 108               | %            | 80-120        | 07.22.17 00.04       |             |     |
| 1,4-Difluorobenzene  | 540-36-3          | 97                | %            | 80-120        | 07.22.17 00.04       |             |     |



# Certificate of Analytical Results 557825



## COG Operating LLC, Artesia, NM

Airacuda 31 Fed BTY

Sample Id: **South- 1'**  
Lab Sample Id: 557825-004

Matrix: Soil  
Date Collected: 07.11.17 11.00

Date Received: 07.17.17 11.45  
Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MGO

Analyst: MGO

Seq Number: 3023111

Date Prep: 07.24.17 08.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

| Parameter | Cas Number | Result | RL   | Units | Analysis Date  | Flag | Dil |
|-----------|------------|--------|------|-------|----------------|------|-----|
| Chloride  | 16887-00-6 | <5.02  | 5.02 | mg/kg | 07.24.17 23.30 | U    | 1   |

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3022910

Date Prep: 07.19.17 18.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

| Parameter                         | Cas Number        | Result            | RL           | Units         | Analysis Date        | Flag        | Dil |
|-----------------------------------|-------------------|-------------------|--------------|---------------|----------------------|-------------|-----|
| Gasoline Range Hydrocarbons (GRO) | PHC610            | <15.0             | 15.0         | mg/kg         | 07.20.17 11.07       | U           | 1   |
| Diesel Range Organics (DRO)       | C10C28DRO         | <15.0             | 15.0         | mg/kg         | 07.20.17 11.07       | U           | 1   |
| Oil Range Hydrocarbons (ORO)      | PHCG2835          | <15.0             | 15.0         | mg/kg         | 07.20.17 11.07       | U           | 1   |
| Total TPH                         | PHC635            | <15.0             | 15.0         | mg/kg         | 07.20.17 11.07       | U           | 1   |
| <b>Surrogate</b>                  | <b>Cas Number</b> | <b>% Recovery</b> | <b>Units</b> | <b>Limits</b> | <b>Analysis Date</b> | <b>Flag</b> |     |
| 1-Chlorooctane                    | 111-85-3          | 99                | %            | 70-135        | 07.20.17 11.07       |             |     |
| o-Terphenyl                       | 84-15-1           | 108               | %            | 70-135        | 07.20.17 11.07       |             |     |



# Certificate of Analytical Results 557825



## COG Operating LLC, Artesia, NM

Airacuda 31 Fed BTY

Sample Id: **South- 1'**  
Lab Sample Id: 557825-004

Matrix: Soil  
Date Collected: 07.11.17 11.00

Date Received: 07.17.17 11.45  
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3022986

Date Prep: 07.21.17 14.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

| Parameter            | Cas Number        | Result            | RL           | Units         | Analysis Date        | Flag        | Dil |
|----------------------|-------------------|-------------------|--------------|---------------|----------------------|-------------|-----|
| Benzene              | 71-43-2           | <0.00200          | 0.00200      | mg/kg         | 07.22.17 00.23       | U           | 1   |
| Toluene              | 108-88-3          | <0.00200          | 0.00200      | mg/kg         | 07.22.17 00.23       | U           | 1   |
| Ethylbenzene         | 100-41-4          | <0.00200          | 0.00200      | mg/kg         | 07.22.17 00.23       | U           | 1   |
| m,p-Xylenes          | 179601-23-1       | <0.00401          | 0.00401      | mg/kg         | 07.22.17 00.23       | U           | 1   |
| o-Xylene             | 95-47-6           | <0.00200          | 0.00200      | mg/kg         | 07.22.17 00.23       | U           | 1   |
| Total Xylenes        | 1330-20-7         | <0.00200          | 0.00200      | mg/kg         | 07.22.17 00.23       | U           | 1   |
| Total BTEX           |                   | <0.00200          | 0.00200      | mg/kg         | 07.22.17 00.23       | U           | 1   |
| <b>Surrogate</b>     | <b>Cas Number</b> | <b>% Recovery</b> | <b>Units</b> | <b>Limits</b> | <b>Analysis Date</b> | <b>Flag</b> |     |
| 1,4-Difluorobenzene  | 540-36-3          | 97                | %            | 80-120        | 07.22.17 00.23       |             |     |
| 4-Bromofluorobenzene | 460-00-4          | 104               | %            | 80-120        | 07.22.17 00.23       |             |     |



## Certificate of Analytical Results 557825



## COG Operating LLC, Artesia, NM

Airacuda 31 Fed BTY

Sample Id: **East-Surf**  
 Lab Sample Id: 557825-005

Matrix: Soil  
 Date Collected: 07.11.17 11.00

Date Received: 07.17.17 11.45

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 07.24.17 08.30

Basis: Wet Weight

Seq Number: 3023111

| Parameter | Cas Number | Result | RL   | Units | Analysis Date  | Flag | Dil |
|-----------|------------|--------|------|-------|----------------|------|-----|
| Chloride  | 16887-00-6 | 6.39   | 4.95 | mg/kg | 07.24.17 23.38 |      | 1   |

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 07.19.17 18.00

Basis: Wet Weight

Seq Number: 3022910

| Parameter                         | Cas Number | Result | RL   | Units | Analysis Date  | Flag | Dil |
|-----------------------------------|------------|--------|------|-------|----------------|------|-----|
| Gasoline Range Hydrocarbons (GRO) | PHC610     | <15.0  | 15.0 | mg/kg | 07.20.17 11.28 | U    | 1   |
| Diesel Range Organics (DRO)       | C10C28DRO  | <15.0  | 15.0 | mg/kg | 07.20.17 11.28 | U    | 1   |
| Oil Range Hydrocarbons (ORO)      | PHCG2835   | <15.0  | 15.0 | mg/kg | 07.20.17 11.28 | U    | 1   |
| Total TPH                         | PHC635     | <15.0  | 15.0 | mg/kg | 07.20.17 11.28 | U    | 1   |

| Surrogate      | Cas Number | % Recovery | Units | Limits | Analysis Date  | Flag |
|----------------|------------|------------|-------|--------|----------------|------|
| 1-Chlorooctane | 111-85-3   | 103        | %     | 70-135 | 07.20.17 11.28 |      |
| o-Terphenyl    | 84-15-1    | 112        | %     | 70-135 | 07.20.17 11.28 |      |



# Certificate of Analytical Results 557825



## COG Operating LLC, Artesia, NM

Airacuda 31 Fed BTY

Sample Id: **East-Surf**  
Lab Sample Id: 557825-005

Matrix: Soil  
Date Collected: 07.11.17 11.00

Date Received: 07.17.17 11.45

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 07.21.17 14.00

Basis: Wet Weight

Seq Number: 3022986

| Parameter            | Cas Number        | Result            | RL           | Units         | Analysis Date        | Flag        | Dil |
|----------------------|-------------------|-------------------|--------------|---------------|----------------------|-------------|-----|
| Benzene              | 71-43-2           | <0.00199          | 0.00199      | mg/kg         | 07.22.17 00.41       | U           | 1   |
| Toluene              | 108-88-3          | <0.00199          | 0.00199      | mg/kg         | 07.22.17 00.41       | U           | 1   |
| Ethylbenzene         | 100-41-4          | <0.00199          | 0.00199      | mg/kg         | 07.22.17 00.41       | U           | 1   |
| m,p-Xylenes          | 179601-23-1       | <0.00398          | 0.00398      | mg/kg         | 07.22.17 00.41       | U           | 1   |
| o-Xylene             | 95-47-6           | <0.00199          | 0.00199      | mg/kg         | 07.22.17 00.41       | U           | 1   |
| Total Xylenes        | 1330-20-7         | <0.00199          | 0.00199      | mg/kg         | 07.22.17 00.41       | U           | 1   |
| Total BTEX           |                   | <0.00199          | 0.00199      | mg/kg         | 07.22.17 00.41       | U           | 1   |
| <b>Surrogate</b>     | <b>Cas Number</b> | <b>% Recovery</b> | <b>Units</b> | <b>Limits</b> | <b>Analysis Date</b> | <b>Flag</b> |     |
| 4-Bromofluorobenzene | 460-00-4          | 108               | %            | 80-120        | 07.22.17 00.41       |             |     |
| 1,4-Difluorobenzene  | 540-36-3          | 97                | %            | 80-120        | 07.22.17 00.41       |             |     |



# Certificate of Analytical Results 557825



## COG Operating LLC, Artesia, NM

Airacuda 31 Fed BTY

Sample Id: **East- 1'**  
Lab Sample Id: 557825-006

Matrix: Soil  
Date Collected: 07.11.17 11.00

Date Received: 07.17.17 11.45  
Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MGO

Analyst: MGO

Seq Number: 3023111

Date Prep: 07.24.17 08.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

| Parameter | Cas Number | Result | RL   | Units | Analysis Date  | Flag | Dil |
|-----------|------------|--------|------|-------|----------------|------|-----|
| Chloride  | 16887-00-6 | 11.2   | 5.02 | mg/kg | 07.24.17 23.46 |      | 1   |

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3022910

Date Prep: 07.19.17 18.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

| Parameter                         | Cas Number | Result | RL   | Units | Analysis Date  | Flag | Dil |
|-----------------------------------|------------|--------|------|-------|----------------|------|-----|
| Gasoline Range Hydrocarbons (GRO) | PHC610     | <15.0  | 15.0 | mg/kg | 07.20.17 11.50 | U    | 1   |
| Diesel Range Organics (DRO)       | C10C28DRO  | <15.0  | 15.0 | mg/kg | 07.20.17 11.50 | U    | 1   |
| Oil Range Hydrocarbons (ORO)      | PHCG2835   | <15.0  | 15.0 | mg/kg | 07.20.17 11.50 | U    | 1   |
| Total TPH                         | PHC635     | <15.0  | 15.0 | mg/kg | 07.20.17 11.50 | U    | 1   |

| Surrogate      | Cas Number | % Recovery | Units | Limits | Analysis Date  | Flag |
|----------------|------------|------------|-------|--------|----------------|------|
| 1-Chlorooctane | 111-85-3   | 94         | %     | 70-135 | 07.20.17 11.50 |      |
| o-Terphenyl    | 84-15-1    | 100        | %     | 70-135 | 07.20.17 11.50 |      |



# Certificate of Analytical Results 557825



## COG Operating LLC, Artesia, NM

Airacuda 31 Fed BTY

Sample Id: **East- 1'**  
Lab Sample Id: 557825-006

Matrix: Soil  
Date Collected: 07.11.17 11.00

Date Received: 07.17.17 11.45  
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3022986

Date Prep: 07.21.17 14.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

| Parameter            | Cas Number        | Result            | RL           | Units         | Analysis Date        | Flag        | Dil |
|----------------------|-------------------|-------------------|--------------|---------------|----------------------|-------------|-----|
| Benzene              | 71-43-2           | <0.00198          | 0.00198      | mg/kg         | 07.22.17 01.00       | U           | 1   |
| Toluene              | 108-88-3          | <0.00198          | 0.00198      | mg/kg         | 07.22.17 01.00       | U           | 1   |
| Ethylbenzene         | 100-41-4          | <0.00198          | 0.00198      | mg/kg         | 07.22.17 01.00       | U           | 1   |
| m,p-Xylenes          | 179601-23-1       | <0.00396          | 0.00396      | mg/kg         | 07.22.17 01.00       | U           | 1   |
| o-Xylene             | 95-47-6           | <0.00198          | 0.00198      | mg/kg         | 07.22.17 01.00       | U           | 1   |
| Total Xylenes        | 1330-20-7         | <0.00198          | 0.00198      | mg/kg         | 07.22.17 01.00       | U           | 1   |
| Total BTEX           |                   | <0.00198          | 0.00198      | mg/kg         | 07.22.17 01.00       | U           | 1   |
| <b>Surrogate</b>     | <b>Cas Number</b> | <b>% Recovery</b> | <b>Units</b> | <b>Limits</b> | <b>Analysis Date</b> | <b>Flag</b> |     |
| 1,4-Difluorobenzene  | 540-36-3          | 100               | %            | 80-120        | 07.22.17 01.00       |             |     |
| 4-Bromofluorobenzene | 460-00-4          | 111               | %            | 80-120        | 07.22.17 01.00       |             |     |



# Certificate of Analytical Results 557825



## COG Operating LLC, Artesia, NM

Airacuda 31 Fed BTY

Sample Id: **West- Surf**

Matrix: Soil

Date Received: 07.17.17 11.45

Lab Sample Id: 557825-007

Date Collected: 07.11.17 11.00

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 07.24.17 08.30

Basis: Wet Weight

Seq Number: 3023111

| Parameter | Cas Number | Result | RL   | Units | Analysis Date  | Flag | Dil |
|-----------|------------|--------|------|-------|----------------|------|-----|
| Chloride  | 16887-00-6 | <5.02  | 5.02 | mg/kg | 07.24.17 23.53 | U    | 1   |

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 07.19.17 18.00

Basis: Wet Weight

Seq Number: 3022910

| Parameter                                | Cas Number        | Result            | RL           | Units         | Analysis Date        | Flag        | Dil |
|------------------------------------------|-------------------|-------------------|--------------|---------------|----------------------|-------------|-----|
| <b>Gasoline Range Hydrocarbons (GRO)</b> | PHC610            | <b>29.2</b>       | 15.0         | mg/kg         | 07.20.17 12.12       |             | 1   |
| <b>Diesel Range Organics (DRO)</b>       | C10C28DRO         | <b>16.0</b>       | 15.0         | mg/kg         | 07.20.17 12.12       |             | 1   |
| Oil Range Hydrocarbons (ORO)             | PHCG2835          | <15.0             | 15.0         | mg/kg         | 07.20.17 12.12       | U           | 1   |
| <b>Total TPH</b>                         | PHC635            | <b>45.2</b>       | 15.0         | mg/kg         | 07.20.17 12.12       |             | 1   |
| <b>Surrogate</b>                         | <b>Cas Number</b> | <b>% Recovery</b> | <b>Units</b> | <b>Limits</b> | <b>Analysis Date</b> | <b>Flag</b> |     |
| 1-Chlorooctane                           | 111-85-3          | 110               | %            | 70-135        | 07.20.17 12.12       |             |     |
| o-Terphenyl                              | 84-15-1           | 115               | %            | 70-135        | 07.20.17 12.12       |             |     |



## Certificate of Analytical Results 557825



## COG Operating LLC, Artesia, NM

Airacuda 31 Fed BTY

Sample Id: **West- Surf**

Matrix: Soil

Date Received: 07.17.17 11.45

Lab Sample Id: 557825-007

Date Collected: 07.11.17 11.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 07.24.17 08.00

Basis: Wet Weight

Seq Number: 3023055

| Parameter            | Cas Number  | Result         | RL      | Units | Analysis Date  | Flag           | Dil  |
|----------------------|-------------|----------------|---------|-------|----------------|----------------|------|
| Benzene              | 71-43-2     | <0.00341       | 0.00341 | mg/kg | 07.24.17 11.45 | U              | 1    |
| Toluene              | 108-88-3    | <0.00341       | 0.00341 | mg/kg | 07.24.17 11.45 | U              | 1    |
| Ethylbenzene         | 100-41-4    | <b>0.00527</b> | 0.00341 | mg/kg | 07.24.17 11.45 |                | 1    |
| m,p-Xylenes          | 179601-23-1 | <b>0.0296</b>  | 0.00683 | mg/kg | 07.24.17 11.45 |                | 1    |
| o-Xylene             | 95-47-6     | <b>0.0202</b>  | 0.00341 | mg/kg | 07.24.17 11.45 |                | 1    |
| Total Xylenes        | 1330-20-7   | <b>0.0498</b>  | 0.00341 | mg/kg | 07.24.17 11.45 |                | 1    |
| Total BTEX           |             | <b>0.0551</b>  | 0.00341 | mg/kg | 07.24.17 11.45 |                | 1    |
|                      |             |                |         |       |                |                |      |
| Surrogate            | Cas Number  | % Recovery     |         | Units | Limits         | Analysis Date  | Flag |
| 4-Bromofluorobenzene | 460-00-4    | 117            |         | %     | 80-120         | 07.24.17 11.45 |      |
| 1,4-Difluorobenzene  | 540-36-3    | 96             |         | %     | 80-120         | 07.24.17 11.45 |      |



## Certificate of Analytical Results 557825



## COG Operating LLC, Artesia, NM

Airacuda 31 Fed BTY

Sample Id: **West- 1'**  
 Lab Sample Id: 557825-008

Matrix: Soil  
 Date Collected: 07.11.17 11.00

Date Received: 07.17.17 11.45  
 Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MGO

Analyst: MGO

Seq Number: 3023111

Date Prep: 07.24.17 08.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

| Parameter | Cas Number | Result | RL   | Units | Analysis Date  | Flag | Dil |
|-----------|------------|--------|------|-------|----------------|------|-----|
| Chloride  | 16887-00-6 | <4.94  | 4.94 | mg/kg | 07.25.17 00.01 | U    | 1   |

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3022910

Date Prep: 07.19.17 18.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

| Parameter                         | Cas Number        | Result            | RL           | Units         | Analysis Date        | Flag        | Dil |
|-----------------------------------|-------------------|-------------------|--------------|---------------|----------------------|-------------|-----|
| Gasoline Range Hydrocarbons (GRO) | PHC610            | <15.0             | 15.0         | mg/kg         | 07.20.17 12.35       | U           | 1   |
| Diesel Range Organics (DRO)       | C10C28DRO         | <15.0             | 15.0         | mg/kg         | 07.20.17 12.35       | U           | 1   |
| Oil Range Hydrocarbons (ORO)      | PHCG2835          | <15.0             | 15.0         | mg/kg         | 07.20.17 12.35       | U           | 1   |
| Total TPH                         | PHC635            | <15.0             | 15.0         | mg/kg         | 07.20.17 12.35       | U           | 1   |
| <b>Surrogate</b>                  | <b>Cas Number</b> | <b>% Recovery</b> | <b>Units</b> | <b>Limits</b> | <b>Analysis Date</b> | <b>Flag</b> |     |
| 1-Chlorooctane                    | 111-85-3          | 110               | %            | 70-135        | 07.20.17 12.35       |             |     |
| o-Terphenyl                       | 84-15-1           | 116               | %            | 70-135        | 07.20.17 12.35       |             |     |



# Certificate of Analytical Results 557825



## COG Operating LLC, Artesia, NM

Airacuda 31 Fed BTY

Sample Id: **West- 1'**  
Lab Sample Id: 557825-008

Matrix: Soil  
Date Collected: 07.11.17 11.00

Date Received: 07.17.17 11.45  
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3022986

Date Prep: 07.21.17 14.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

| Parameter            | Cas Number        | Result            | RL           | Units         | Analysis Date        | Flag        | Dil |
|----------------------|-------------------|-------------------|--------------|---------------|----------------------|-------------|-----|
| Benzene              | 71-43-2           | <0.00200          | 0.00200      | mg/kg         | 07.22.17 01.36       | U           | 1   |
| Toluene              | 108-88-3          | <0.00200          | 0.00200      | mg/kg         | 07.22.17 01.36       | U           | 1   |
| Ethylbenzene         | 100-41-4          | <0.00200          | 0.00200      | mg/kg         | 07.22.17 01.36       | U           | 1   |
| m,p-Xylenes          | 179601-23-1       | <0.00399          | 0.00399      | mg/kg         | 07.22.17 01.36       | U           | 1   |
| o-Xylene             | 95-47-6           | <0.00200          | 0.00200      | mg/kg         | 07.22.17 01.36       | U           | 1   |
| Total Xylenes        | 1330-20-7         | <0.00200          | 0.00200      | mg/kg         | 07.22.17 01.36       | U           | 1   |
| Total BTEX           |                   | <0.00200          | 0.00200      | mg/kg         | 07.22.17 01.36       | U           | 1   |
| <b>Surrogate</b>     | <b>Cas Number</b> | <b>% Recovery</b> | <b>Units</b> | <b>Limits</b> | <b>Analysis Date</b> | <b>Flag</b> |     |
| 4-Bromofluorobenzene | 460-00-4          | 85                | %            | 80-120        | 07.22.17 01.36       |             |     |
| 1,4-Difluorobenzene  | 540-36-3          | 93                | %            | 80-120        | 07.22.17 01.36       |             |     |



## Flagging Criteria



- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

\*\* Surrogate recovered outside laboratory control limit.

**BRL** Below Reporting Limit.

**RL** Reporting Limit

**MDL** Method Detection Limit      **SDL** Sample Detection Limit      **LOD** Limit of Detection

**PQL** Practical Quantitation Limit      **MQL** Method Quantitation Limit      **LOQ** Limit of Quantitation

**DL** Method Detection Limit

**NC** Non-Calculable

+ NELAC certification not offered for this compound.

\* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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## COG Operating LLC

Airacuda 31 Fed BTY

**Analytical Method: Inorganic Anions by EPA 300/300.1**

Seq Number: 3023111

Matrix: Solid

Prep Method: E300P

MB Sample Id: 728017-1-BLK

LCS Sample Id: 728017-1-BKS

Date Prep: 07.21.17

LCSD Sample Id: 728017-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date  | Flag |
|-----------|-----------|--------------|------------|----------|-------------|-----------|--------|------|-----------|-------|----------------|------|
| Chloride  | <5.00     | 250          | 262        | 105      | 272         | 109       | 90-110 | 4    | 20        | mg/kg | 07.22.17 04:07 |      |

**Analytical Method: Inorganic Anions by EPA 300/300.1**

Seq Number: 3023111

Matrix: Soil

Prep Method: E300P

Parent Sample Id: 557823-001

MS Sample Id: 557823-001 S

Date Prep: 07.21.17

MSD Sample Id: 557823-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date  | Flag |
|-----------|---------------|--------------|-----------|---------|------------|----------|--------|------|-----------|-------|----------------|------|
| Chloride  | 25.4          | 251          | 297       | 108     | 299        | 109      | 90-110 | 1    | 20        | mg/kg | 07.22.17 04:30 |      |

**Analytical Method: Inorganic Anions by EPA 300/300.1**

Seq Number: 3023111

Matrix: Soil

Prep Method: E300P

Parent Sample Id: 557823-011

MS Sample Id: 557823-011 S

Date Prep: 07.21.17

MSD Sample Id: 557823-011 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date  | Flag |
|-----------|---------------|--------------|-----------|---------|------------|----------|--------|------|-----------|-------|----------------|------|
| Chloride  | <4.92         | 246          | 265       | 108     | 285        | 116      | 90-110 | 7    | 20        | mg/kg | 07.22.17 06:17 | X    |

**Analytical Method: TPH By SW8015 Mod**

Seq Number: 3022910

Matrix: Solid

Prep Method: TX1005P

MB Sample Id: 727922-1-BLK

LCS Sample Id: 727922-1-BKS

Date Prep: 07.19.17

LCSD Sample Id: 727922-1-BSD

| Parameter                         | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date  | Flag |
|-----------------------------------|-----------|--------------|------------|----------|-------------|-----------|--------|------|-----------|-------|----------------|------|
| Gasoline Range Hydrocarbons (GRO) | <15.0     | 1000         | 977        | 98       | 995         | 100       | 70-135 | 2    | 35        | mg/kg | 07.20.17 03:30 |      |
| Diesel Range Organics (DRO)       | <15.0     | 1000         | 990        | 99       | 1010        | 101       | 70-135 | 2    | 35        | mg/kg | 07.20.17 03:30 |      |

**Surrogate**

| Surrogate      | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date  |
|----------------|---------|---------|----------|----------|-----------|-----------|--------|-------|----------------|
| 1-Chlorooctane | 112     |         | 107      |          | 106       |           | 70-135 | %     | 07.20.17 03:30 |
| o-Terphenyl    | 121     |         | 114      |          | 111       |           | 70-135 | %     | 07.20.17 03:30 |



## COG Operating LLC

Airacuda 31 Fed BTY

## Analytical Method: TPH By SW8015 Mod

Seq Number: 3022910

Parent Sample Id: 557823-001

Matrix: Soil

MS Sample Id: 557823-001 S

Prep Method: TX1005P

Date Prep: 07.19.17

MSD Sample Id: 557823-001 SD

| Parameter                         | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date  | Flag |
|-----------------------------------|---------------|--------------|-----------|---------|------------|----------|--------|------|-----------|-------|----------------|------|
| Gasoline Range Hydrocarbons (GRO) | <15.0         | 998          | 1130      | 113     | 1130       | 113      | 70-135 | 0    | 35        | mg/kg | 07.20.17 04:34 |      |
| Diesel Range Organics (DRO)       | <15.0         | 998          | 1060      | 106     | 1180       | 118      | 70-135 | 11   | 35        | mg/kg | 07.20.17 04:34 |      |

| Surrogate      | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date  |
|----------------|---------|---------|----------|----------|--------|-------|----------------|
| 1-Chlorooctane | 100     |         | 109      |          | 70-135 | %     | 07.20.17 04:34 |
| o-Terphenyl    | 100     |         | 112      |          | 70-135 | %     | 07.20.17 04:34 |

## Analytical Method: BTEX by EPA 8021B

Seq Number: 3022986

MB Sample Id: 728057-1-BLK

Matrix: Solid

LCS Sample Id: 728057-1-BKS

Prep Method: SW5030B

Date Prep: 07.21.17

LCSD Sample Id: 728057-1-BSD

| Parameter    | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date  | Flag |
|--------------|-----------|--------------|------------|----------|-------------|-----------|--------|------|-----------|-------|----------------|------|
| Benzene      | <0.00200  | 0.100        | 0.108      | 108      | 0.111       | 111       | 70-130 | 3    | 35        | mg/kg | 07.21.17 17:48 |      |
| Toluene      | <0.00200  | 0.100        | 0.110      | 110      | 0.113       | 113       | 70-130 | 3    | 35        | mg/kg | 07.21.17 17:48 |      |
| Ethylbenzene | <0.00200  | 0.100        | 0.118      | 118      | 0.120       | 120       | 71-129 | 2    | 35        | mg/kg | 07.21.17 17:48 |      |
| m,p-Xylenes  | <0.00401  | 0.200        | 0.231      | 116      | 0.235       | 118       | 70-135 | 2    | 35        | mg/kg | 07.21.17 17:48 |      |
| o-Xylene     | <0.00200  | 0.100        | 0.118      | 118      | 0.120       | 120       | 71-133 | 2    | 35        | mg/kg | 07.21.17 17:48 |      |

| Surrogate            | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date  |
|----------------------|---------|---------|----------|----------|-----------|-----------|--------|-------|----------------|
| 1,4-Difluorobenzene  | 95      |         | 100      |          | 102       |           | 80-120 | %     | 07.21.17 17:48 |
| 4-Bromofluorobenzene | 112     |         | 119      |          | 118       |           | 80-120 | %     | 07.21.17 17:48 |

## Analytical Method: BTEX by EPA 8021B

Seq Number: 3023055

MB Sample Id: 728128-1-BLK

Matrix: Solid

LCS Sample Id: 728128-1-BKS

Prep Method: SW5030B

Date Prep: 07.24.17

LCSD Sample Id: 728128-1-BSD

| Parameter    | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date  | Flag |
|--------------|-----------|--------------|------------|----------|-------------|-----------|--------|------|-----------|-------|----------------|------|
| Benzene      | <0.00201  | 0.101        | 0.113      | 112      | 0.112       | 112       | 70-130 | 1    | 35        | mg/kg | 07.24.17 08:39 |      |
| Toluene      | <0.00201  | 0.101        | 0.114      | 113      | 0.114       | 114       | 70-130 | 0    | 35        | mg/kg | 07.24.17 08:39 |      |
| Ethylbenzene | <0.00201  | 0.101        | 0.119      | 118      | 0.120       | 120       | 71-129 | 1    | 35        | mg/kg | 07.24.17 08:39 |      |
| m,p-Xylenes  | <0.00402  | 0.201        | 0.232      | 115      | 0.232       | 115       | 70-135 | 0    | 35        | mg/kg | 07.24.17 08:39 |      |
| o-Xylene     | <0.00201  | 0.101        | 0.116      | 115      | 0.116       | 116       | 71-133 | 0    | 35        | mg/kg | 07.24.17 08:39 |      |

| Surrogate            | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date  |
|----------------------|---------|---------|----------|----------|-----------|-----------|--------|-------|----------------|
| 1,4-Difluorobenzene  | 98      |         | 102      |          | 101       |           | 80-120 | %     | 07.24.17 08:39 |
| 4-Bromofluorobenzene | 112     |         | 112      |          | 112       |           | 80-120 | %     | 07.24.17 08:39 |



## COG Operating LLC

Airacuda 31 Fed BTY

Analytical Method: BTEX by EPA 8021B

Seq Number: 3022986

Parent Sample Id: 557797-046

Matrix: Soil

MS Sample Id: 557797-046 S

Prep Method: SW5030B

Date Prep: 07.21.17

MSD Sample Id: 557797-046 SD

| Parameter    | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date  | Flag |
|--------------|---------------|--------------|-----------|---------|------------|----------|--------|------|-----------|-------|----------------|------|
| Benzene      | <0.00201      | 0.100        | 0.0835    | 84      | 0.0894     | 89       | 70-130 | 7    | 35        | mg/kg | 07.21.17 18:25 |      |
| Toluene      | <0.00201      | 0.100        | 0.0841    | 84      | 0.0907     | 91       | 70-130 | 8    | 35        | mg/kg | 07.21.17 18:25 |      |
| Ethylbenzene | <0.00201      | 0.100        | 0.0887    | 89      | 0.0949     | 95       | 71-129 | 7    | 35        | mg/kg | 07.21.17 18:25 |      |
| m,p-Xylenes  | <0.00402      | 0.201        | 0.173     | 86      | 0.185      | 93       | 70-135 | 7    | 35        | mg/kg | 07.21.17 18:25 |      |
| o-Xylene     | <0.00201      | 0.100        | 0.0883    | 88      | 0.0944     | 94       | 71-133 | 7    | 35        | mg/kg | 07.21.17 18:25 |      |

| Surrogate            | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date  |
|----------------------|---------|---------|----------|----------|--------|-------|----------------|
| 1,4-Difluorobenzene  | 103     |         | 101      |          | 80-120 | %     | 07.21.17 18:25 |
| 4-Bromofluorobenzene | 120     |         | 118      |          | 80-120 | %     | 07.21.17 18:25 |

Analytical Method: BTEX by EPA 8021B

Seq Number: 3023055

Parent Sample Id: 557801-024

Matrix: Soil

MS Sample Id: 557801-024 S

Prep Method: SW5030B

Date Prep: 07.24.17

MSD Sample Id: 557801-024 SD

| Parameter    | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date  | Flag |
|--------------|---------------|--------------|-----------|---------|------------|----------|--------|------|-----------|-------|----------------|------|
| Benzene      | <0.00202      | 0.101        | 0.0867    | 86      | 0.0749     | 75       | 70-130 | 15   | 35        | mg/kg | 07.24.17 09:16 |      |
| Toluene      | <0.00202      | 0.101        | 0.0878    | 87      | 0.0762     | 76       | 70-130 | 14   | 35        | mg/kg | 07.24.17 09:16 |      |
| Ethylbenzene | <0.00202      | 0.101        | 0.0914    | 90      | 0.0782     | 78       | 71-129 | 16   | 35        | mg/kg | 07.24.17 09:16 |      |
| m,p-Xylenes  | <0.00404      | 0.202        | 0.178     | 88      | 0.152      | 76       | 70-135 | 16   | 35        | mg/kg | 07.24.17 09:16 |      |
| o-Xylene     | <0.00202      | 0.101        | 0.0904    | 90      | 0.0772     | 77       | 71-133 | 16   | 35        | mg/kg | 07.24.17 09:16 |      |

| Surrogate            | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date  |
|----------------------|---------|---------|----------|----------|--------|-------|----------------|
| 1,4-Difluorobenzene  | 103     |         | 103      |          | 80-120 | %     | 07.24.17 09:16 |
| 4-Bromofluorobenzene | 118     |         | 120      |          | 80-120 | %     | 07.24.17 09:16 |



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# CHAIN OF CUSTODY

Page / of /

| Client / Reporting Information                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                |            |                                                                                                         |         |      | Project Information                                                                             |              |     |                                                             |      |       | Analytical Information |        |      | Matrix Codes |               |      |          |                |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|------------|---------------------------------------------------------------------------------------------------------|---------|------|-------------------------------------------------------------------------------------------------|--------------|-----|-------------------------------------------------------------|------|-------|------------------------|--------|------|--------------|---------------|------|----------|----------------|
| Company Name / Branch:<br>COG Operating LLC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                |            | Project Name/Number:<br>Atracuda 31 Fed BTY                                                             |         |      |                                                                                                 |              |     |                                                             |      |       |                        |        |      |              |               |      |          |                |
| Company Address:<br>2407 PECOS Avenue<br>Artesia NM 88210                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                |            | Project Location:                                                                                       |         |      |                                                                                                 |              |     |                                                             |      |       |                        |        |      |              |               |      |          |                |
| Email:<br><a href="mailto:alibeb@concho.com">alibeb@concho.com</a><br><a href="mailto:dnee12@concho.com">dnee12@concho.com</a><br><a href="mailto:haskell@concho.com">haskell@concho.com</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                |            | Phone No: 575-748-1553                                                                                  |         |      | Invoice To:<br>COG Operating LLC<br>Attn: Robert McNeill<br>600 W. Illinois<br>Midland TX 79701 |              |     |                                                             |      |       |                        |        |      |              |               |      |          |                |
| Project Contact: Aaron Lieb                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                |            | PO Number:                                                                                              |         |      |                                                                                                 |              |     |                                                             |      |       |                        |        |      |              |               |      |          |                |
| Sampler's Name: Aaron Lieb                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                |            |                                                                                                         |         |      |                                                                                                 |              |     |                                                             |      |       |                        |        |      |              |               |      |          |                |
| No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Field ID / Point of Collection | Collection | Sample Depth                                                                                            | Date    | Time | Matrix                                                                                          | # of bottles | HCl | NaOH/Zn Acetate                                             | HNO3 | H2SO4 | NaOH                   | NaHSO4 | MeOH | NONE         | TPH/ EXTENDED | BTEX | Chloride | Field Comments |
| 1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | North - Surf                   | -          | 7/11/17                                                                                                 | 1:00 PM | S    | I                                                                                               | 1            |     |                                                             |      |       |                        |        |      |              | X             | X    | X        |                |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | North - I'                     | -          |                                                                                                         |         |      |                                                                                                 |              |     |                                                             |      |       |                        |        |      |              | X             | X    | X        |                |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | South - Surf                   | -          |                                                                                                         |         |      |                                                                                                 |              |     |                                                             |      |       |                        |        |      |              | X             | X    | X        |                |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | South - I'                     | -          |                                                                                                         |         |      |                                                                                                 |              |     |                                                             |      |       |                        |        |      |              | X             | X    | X        |                |
| 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | East - Surf                    | -          |                                                                                                         |         |      |                                                                                                 |              |     |                                                             |      |       |                        |        |      |              | X             | X    | X        |                |
| 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | East - I'                      | -          |                                                                                                         |         |      |                                                                                                 |              |     |                                                             |      |       |                        |        |      |              | X             | X    | X        |                |
| 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | West - Surf                    | -          |                                                                                                         |         |      |                                                                                                 |              |     |                                                             |      |       |                        |        |      |              | X             | X    | X        |                |
| 8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | West - I'                      | -          |                                                                                                         |         |      |                                                                                                 |              |     |                                                             |      |       |                        |        |      |              | X             | X    | X        |                |
| 9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                |            |                                                                                                         |         |      |                                                                                                 |              |     |                                                             |      |       |                        |        |      |              |               |      |          |                |
| 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                |            |                                                                                                         |         |      |                                                                                                 |              |     |                                                             |      |       |                        |        |      |              |               |      |          |                |
| Turnaround Time (Business days)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                |            | Data Deliverable Information                                                                            |         |      | Not                                                                                             |              |     |                                                             |      |       |                        |        |      |              |               |      |          |                |
| <input type="checkbox"/> Same Day TAT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                |            | <input type="checkbox"/> 5 Day TAT                                                                      |         |      | <input type="checkbox"/> Level II Std QC                                                        |              |     | <input type="checkbox"/> Level IV (Full Data Pkg /raw data) |      |       |                        |        |      |              |               |      |          |                |
| <input type="checkbox"/> Next Day EMERGENCY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                |            | <input type="checkbox"/> 7 Day TAT                                                                      |         |      | <input type="checkbox"/> Level III Std QC+ Forms                                                |              |     | <input type="checkbox"/> TRRP Level IV                      |      |       |                        |        |      |              |               |      |          |                |
| <input type="checkbox"/> 2 Day EMERGENCY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                |            | <input type="checkbox"/> Contract TAT                                                                   |         |      | <input type="checkbox"/> Level 3 (CLP Forms)                                                    |              |     | <input type="checkbox"/> UST / RG -411                      |      |       |                        |        |      |              |               |      |          |                |
| <input type="checkbox"/> 3 Day EMERGENCY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                |            | <input type="checkbox"/> TRRP Checklist                                                                 |         |      |                                                                                                 |              |     |                                                             |      |       |                        |        |      |              |               |      |          |                |
| TAT Starts Day received by Lab, if received by 5:00 pm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                |            |                                                                                                         |         |      |                                                                                                 |              |     |                                                             |      |       |                        |        |      |              |               |      |          |                |
| Reinquisitioned by Sampler:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                |            | SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY |         |      |                                                                                                 |              |     |                                                             |      |       |                        |        |      |              |               |      |          |                |
| Date Time:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                |            | Received By:                                                                                            |         |      | Date Time:                                                                                      |              |     | Received By:                                                |      |       |                        |        |      |              |               |      |          |                |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                |            | 1                                                                                                       |         |      | 2                                                                                               |              |     | 2                                                           |      |       |                        |        |      |              |               |      |          |                |
| Reinquisitioned by:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                |            | Date Time:                                                                                              |         |      | Received By:                                                                                    |              |     | Date Time:                                                  |      |       | Received By:           |        |      |              |               |      |          |                |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                |            | 7-17-17 10:00                                                                                           |         |      | 3                                                                                               |              |     | 7-17-17                                                     |      |       | 3                      |        |      |              |               |      |          |                |
| Reinquisitioned by:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                |            | Date Time:                                                                                              |         |      | Received By:                                                                                    |              |     | Date Time:                                                  |      |       | Received By:           |        |      |              |               |      |          |                |
| 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                |            | 7-17-17 10:00                                                                                           |         |      | 5                                                                                               |              |     | 7-17-17                                                     |      |       | 5                      |        |      |              |               |      |          |                |
| Notice: Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the Client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at \$5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract. |                                |            |                                                                                                         |         |      |                                                                                                 |              |     |                                                             |      |       |                        |        |      |              |               |      |          |                |



# XENCO Laboratories

## Prelogin/Nonconformance Report- Sample Log-In



Client: COG Operating LLC

Date/ Time Received: 07/17/2017 11:45:00 AM

Work Order #: 557825

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

**Sample Receipt Checklist****Comments**

|                                                            |     |
|------------------------------------------------------------|-----|
| #1 *Temperature of cooler(s)?                              | 1.2 |
| #2 *Shipping container in good condition?                  | Yes |
| #3 *Samples received on ice?                               | Yes |
| #4 *Custody Seal present on shipping container/ cooler?    | Yes |
| #5 *Custody Seals intact on shipping container/ cooler?    | Yes |
| #6 Custody Seals intact on sample bottles?                 | Yes |
| #7 *Custody Seals Signed and dated?                        | Yes |
| #8 *Chain of Custody present?                              | Yes |
| #9 Sample instructions complete on Chain of Custody?       | Yes |
| #10 Any missing/extra samples?                             | No  |
| #11 Chain of Custody signed when relinquished/ received?   | Yes |
| #12 Chain of Custody agrees with sample label(s)?          | Yes |
| #13 Container label(s) legible and intact?                 | Yes |
| #14 Sample matrix/ properties agree with Chain of Custody? | Yes |
| #15 Samples in proper container/ bottle?                   | Yes |
| #16 Samples properly preserved?                            | Yes |
| #17 Sample container(s) intact?                            | Yes |
| #18 Sufficient sample amount for indicated test(s)?        | Yes |
| #19 All samples received within hold time?                 | Yes |
| #20 Subcontract of sample(s)?                              | No  |
| #21 VOC samples have zero headspace?                       | N/A |

\* Must be completed for after-hours delivery of samples prior to placing in the refrigerator

Analyst:

PH Device/Lot#:

Checklist completed by:

Shawnee Smith

Date: 07/18/2017

Checklist reviewed by:

Kelsey Brooks

Date: 07/18/2017

**District I**  
1625 N. French Dr., Hobbs, NM 88240  
Phone:(575) 393-6161 Fax:(575) 393-0720  
**District II**  
811 S. First St., Artesia, NM 88210  
Phone:(575) 748-1283 Fax:(575) 748-9720  
**District III**  
1000 Rio Brazos Rd., Aztec, NM 87410  
Phone:(505) 334-6178 Fax:(505) 334-6170  
**District IV**  
1220 S. St Francis Dr., Santa Fe, NM 87505  
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS  
  
Action 157664

CONDITIONS

|                                                                           |                                                                  |
|---------------------------------------------------------------------------|------------------------------------------------------------------|
| Operator:<br>COG OPERATING LLC<br>600 W Illinois Ave<br>Midland, TX 79701 | OGRID:<br>229137                                                 |
|                                                                           | Action Number:<br>157664                                         |
|                                                                           | Action Type:<br>[IM-SD] Incident File Support Doc (ENV) (IM-BNF) |

CONDITIONS

| Created By | Condition | Condition Date |
|------------|-----------|----------------|
| amaxwell   | None      | 11/10/2022     |