

SITE INFORMATION

Report Type: Closure Report 1RP-5088

General Site Information:

| | | | | | | |
|-----------------------------|---|--------|-------|------------|--|--|
| Site: | Cabo Blanco State #001H | | | | | |
| Company: | COG Operating LLC | | | | | |
| Section, Township and Range | Unit D | Sec. 6 | T 24S | R 33E | | |
| Lease Number: | API No. 30-025-40702 | | | | | |
| County: | Lea County | | | | | |
| GPS: | 32.25228 | | | -103.61908 | | |
| Surface Owner: | State | | | | | |
| Mineral Owner: | State | | | | | |
| Directions: | From the intersection of HWY 128 and Bell Lake rd Turn North on Bell Lake rd and go 1.20 miles and turn left Northwest and go 1.84 miles and turn right Northeast and go .42 miles and arrive | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

Release Data:

| | |
|--------------------------|------------------|
| Date Released: | 6/5/2018 |
| Type Release: | Produced Water |
| Source of Contamination: | Flowline rupture |
| Fluid Released: | 250 bbl water |
| Fluids Recovered: | 220 bbls water |

Official Communication:

| | | |
|---------------|--|--|
| Name: | Ike Tavaréz | Clair Gonzales |
| Company: | COG Operating, LLC | Tetra Tech |
| Address: | One Concho Center | 901 West Wall Street |
| | 600 W. Illinois Ave. | Suite 100 |
| City: | Midland Texas, 79701 | Midland, Texas |
| Phone number: | (432) 686-3023 | (432) 687-8110 |
| Fax: | (432) 684-7137 | |
| Email: | itavarez@concho.com | Clair.Gonzales@tetrattech.com |

Depth to Groundwater: 300'

Recommended Remedial Action Levels (RRALs)

| Benzene | Total BTEX | TPH (GRO+DRO+MRO) | Chlorides |
|----------|------------|-------------------|-----------|
| 10 mg/kg | 50 mg/kg | 100 mg/kg | 600 mg/kg |



April 10, 2019

Oil Conservation Division, District 1
1625 North French Drive
Hobbs, New Mexico 88240

Re: Closure Request for the COG Operating, LLC, Cabo Blanco State #001H, Unit D, Section 06, Township 24 South, Range 33 East, Lea County, New Mexico. 1RP-5088

To whom it may concern:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating, LLC (COG) to assess a release that occurred at the Cabo Blanco State #001H, Unit D, Section 06, Township 24 South, Range 33 East, Eddy County, New Mexico (Site). The spill site coordinates are 32.25228°, -103.61908°. The site location is shown on Figures 1 and 2.

Background

According to the State of New Mexico C-141 Initial Report, the leak was discovered on June 5, 2018, and released approximately 250 barrels of produced water due to a flowline rupture. A vacuum truck was dispatched to remove all freestanding fluids. Approximately 220 barrels of produced water was recovered. The release occurred on lease road and migrated onto the pasture impacting areas measuring approximately 348' x 185' and 217' x 118'. The C-141 Form is included in Appendix A.

Groundwater

No water wells were listed within Section 06 on the New Mexico Office of the State Engineer's (NMOSE) database or the USGS National Water Information database. According to the Chevron Texaco Groundwater Trend map, the average depth to groundwater in the area is 275'-300' below surface. The groundwater data is shown in Appendix B.

Regulatory (Old Rules)

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

Tetra Tech

901 West Wall, Suite 100, Midland, TX 79701

Tel 432.682.4559 Fax 432.682.3946 www.tetrattech.com

**TETRA TECH**

(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 100 mg/kg and chloride is 600 mg/kg.

Remediation Activities

As per the approved remediation plan, dated 6/5/18, COG implemented the remediation activities. The areas of SP1 through SP6 were excavated to 1.5' below surface, the areas of SP7 and SP8 were excavated to 4.5' to 5.5' below surface, the area of SP9 was excavated to 2.5' below surface, and SP10 through SP12 was excavated to 1' below surface.

On October 3 and October 8-9, 2018, a total of twelve (12) bottom hole confirmation samples were collected (BTTM-1 through BTTM-12) in the spill area to a total excavation depth of 5.5' below surface and total of thirty-three (33) sidewall confirmation samples were collected every 50 feet to ensure proper removal of the impacted soils. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B, chloride by EPA method 300.0, and chloride by EPA method SM4500Cl-B. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix D. The sampling results are summarized in Table 1. The sample locations are shown on Figure 3.

Referring to Table 1, all the confirmation samples collected, with the exception of SW12, showed benzene, total BTEX, TPH, and chloride concentrations below the RRALs. However, sidewall (SW-12) showing a chloride concentration of 835 mg/kg above the RRALs and couldn't be excavated further due to the adjacent lease road and flowlines in the area.

All the soil was excavated and transported offsite for proper disposal. Once the excavation activities were completed, the areas were backfilled with clean material to surface grade.

Restoration/Reclamation

The backfilled areas will be seeded June 2019 in order to coincide with the rainy season in New Mexico to aid in revegetation. Based on the soils at the site, the Shallow (SH) NMSLO seed mixture seed will be selected and the appropriate pounds pure live seed per acre will be used. The seed mixture will be spread by a drill equipped with a depth regulator or a hand-held broadcaster and raked. If a hand-held broadcaster is used for dispersal, the pounds pure live seed per acre will be doubled.

Site inspections will be performed to assess the revegetation progress and evaluate the site for the presence of primary or secondary noxious weeds. If noxious weeds are identified, the NMSLO will be contacted to determine an effective method for eradication. If the site does not show revegetation after one growing season, the area will be reseeded as appropriate. The NMSLO seed mixture details and corresponding pounds pure live seed per acre are included in Appendix C.



TETRA TECH

Conclusion

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

Respectfully submitted,
TETRA TECH

Clair Gonzales,
Project Manager

Mike Carmona,
Geologist

cc: Ike Tavarez - COG
Dakota Neel - COG
Rebecca Haskell - COG
Sheldon Hitchcock - COG
DeAnn Grant - COG

Figures



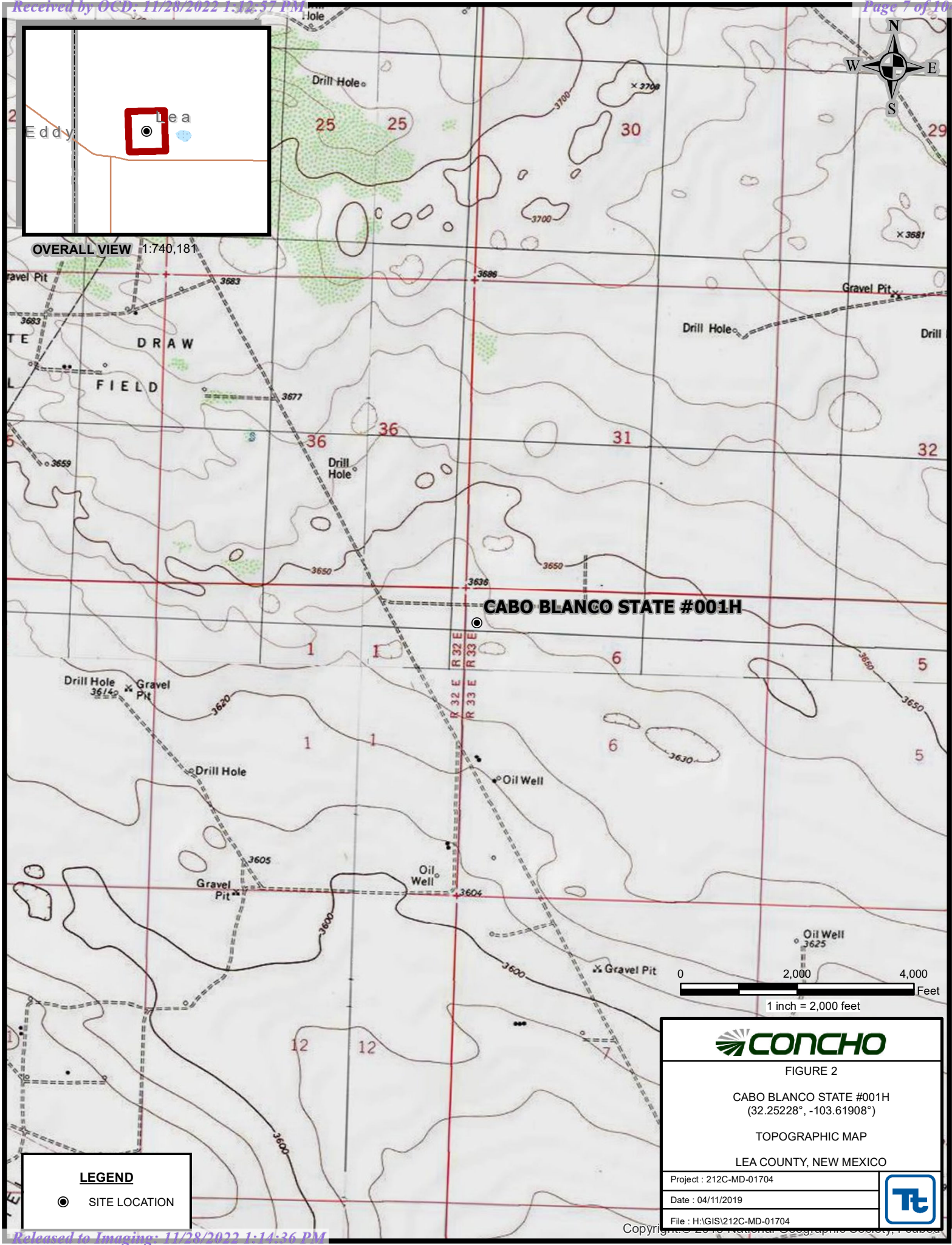


FIGURE 2

CABO BLANCO STATE #001H
(32.25228°, -103.61908°)

TOPOGRAPHIC MAP

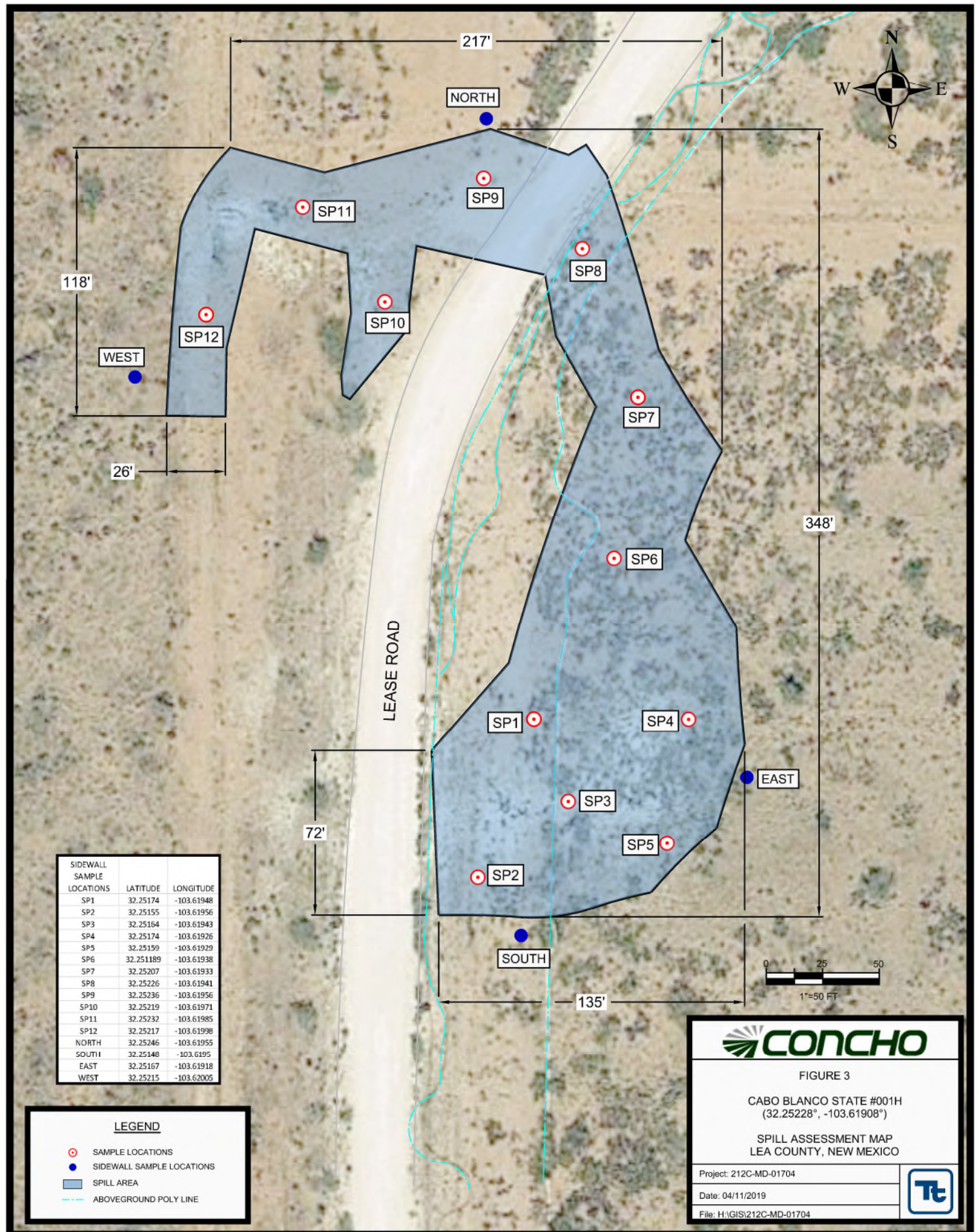
LEA COUNTY, NEW MEXICO

Project : 212C-MD-01704

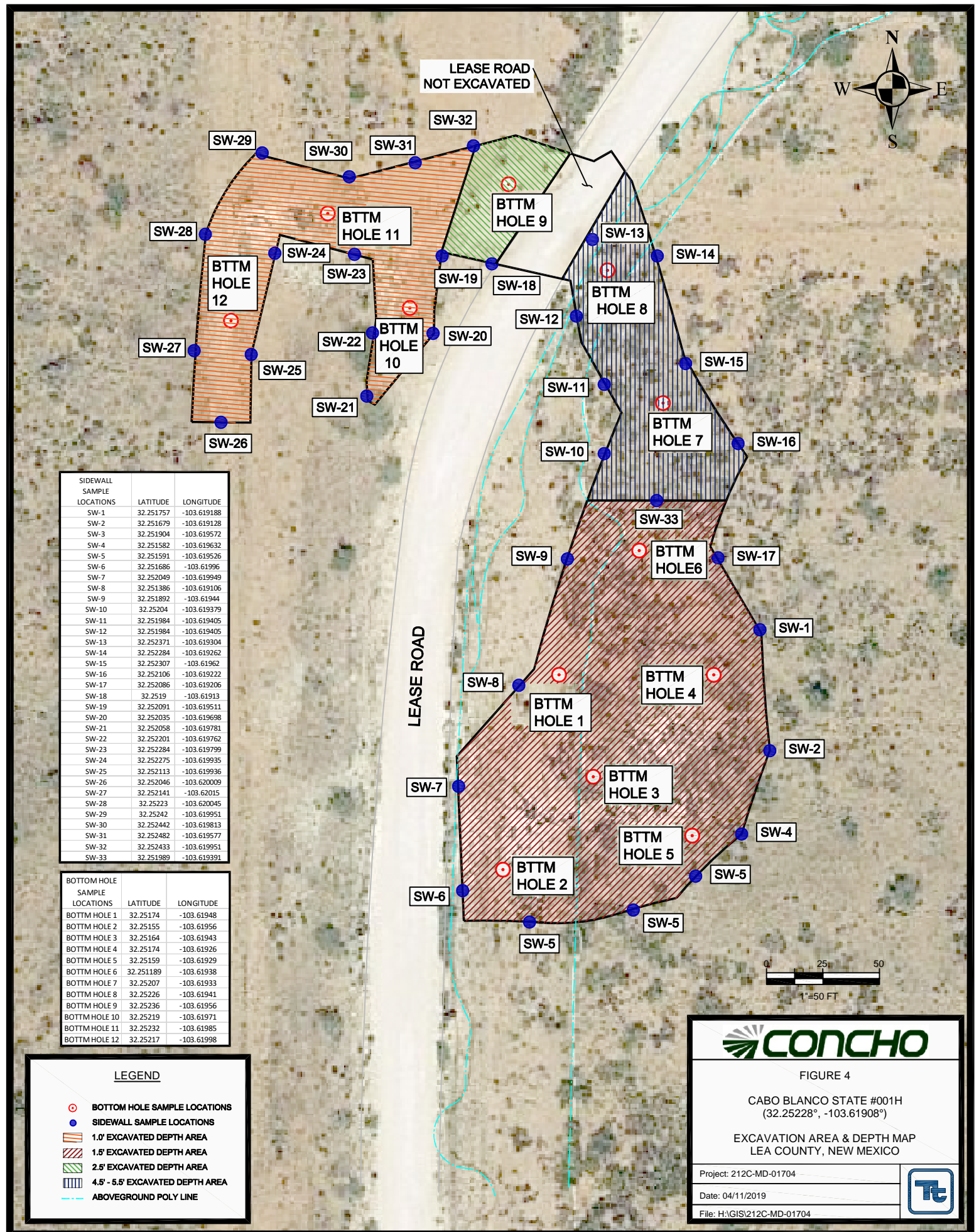
Date : 04/11/2019

File : H:\GIS\212C-MD-01704





Drawn By: MISTI MORGAN



Tables

Table 1
COG
Cabo Blanco State #001H
Lea County, New Mexico

| Sample ID | Sample Date | Sample Depth (ft) | BEB (Below Excavation Bottom) ft | Soil Status | | TPH (mg/kg) | | | | Benzene (mg/kg) | Toluene (mg/kg) | Ethlybenzene (mg/kg) | Xylene (mg/kg) | Total BTEX (mg/kg) | Chloride (mg/kg) |
|------------|-------------|-------------------|----------------------------------|-------------|---------|-------------|----------|----------|----------|-----------------|-----------------|----------------------|----------------|--------------------|------------------|
| | | | | In-Situ | Removed | GRO | DRO | ORO | Total | | | | | | |
| BTTM SP-1 | 10/3/2018 | - | 1.5 | X | | <10.0 | <10.0 | <10.0 | <10.0 | <0.050 | <0.050 | <0.050 | <0.150 | <0.300 | 32.0 |
| BTTM SP-2 | 10/3/2018 | - | 1.5 | X | | <10.0 | <10.0 | <10.0 | <10.0 | <0.050 | <0.050 | <0.050 | <0.150 | <0.300 | 32.0 |
| BTTM SP-3 | 10/3/2018 | - | 1.5 | X | | <10.0 | <10.0 | <10.0 | <10.0 | <0.050 | <0.050 | <0.050 | <0.150 | <0.300 | <16.0 |
| BTTM SP-4 | 10/3/2018 | - | 1.5 | X | | <10.0 | <10.0 | <10.0 | <10.0 | <0.050 | <0.050 | <0.050 | <0.150 | <0.300 | <16.0 |
| BTTM SP-5 | 10/3/2018 | - | 1.5 | X | | <10.0 | <10.0 | <10.0 | <10.0 | <0.050 | <0.050 | <0.050 | <0.150 | <0.300 | 16.0 |
| BTTM SP-6 | 10/3/2018 | - | 1.5 | X | | <10.0 | <10.0 | <10.0 | <10.0 | <0.050 | <0.050 | <0.050 | <0.150 | <0.300 | 64.0 |
| BTTM SP-7 | 10/3/2018 | - | 4.5 | | X | <10.0 | <10.0 | <10.0 | <10.0 | <0.050 | <0.050 | <0.050 | <0.150 | <0.300 | 3,320 |
| | 10/9/2018 | - | 5.5 | X | | <0.00201 | <0.00201 | <0.00201 | <0.00201 | <15.0 | <15.0 | <15.0 | <15.0 | <15.0 | 254 |
| BTTM SP-8 | 10/3/2018 | - | 4.5 | X | | <10.0 | <10.0 | <10.0 | <10.0 | <0.050 | <0.050 | <0.050 | <0.150 | <0.300 | 224 |
| BTTM SP-9 | 10/3/2018 | - | 2.5 | X | | <10.0 | <10.0 | <10.0 | <10.0 | <0.050 | <0.050 | <0.050 | <0.150 | <0.300 | 192 |
| BTTM SP-10 | 10/3/2018 | - | 1 | X | | <10.0 | <10.0 | <10.0 | <10.0 | <0.050 | <0.050 | <0.050 | <0.150 | <0.300 | 32.0 |
| BTTM SP-11 | 10/3/2018 | - | 1 | X | | <10.0 | <10.0 | <10.0 | <10.0 | <0.050 | <0.050 | <0.050 | <0.150 | <0.300 | 48.0 |
| BTTM SP-12 | 10/3/2018 | - | 1 | X | | <10.0 | <10.0 | <10.0 | <10.0 | <0.050 | <0.050 | <0.050 | <0.150 | <0.300 | 32.0 |

Table 1
COG
Cabo Blanco State #001H
Lea County, New Mexico

| Sample ID | Sample Date | Sample Depth (ft) | BEB (Below Excavation Bottom) ft | Soil Status | | TPH (mg/kg) | | | | Benzene (mg/kg) | Toluene (mg/kg) | Ethlybenzene (mg/kg) | Xylene (mg/kg) | Total BTEX (mg/kg) | Chloride (mg/kg) |
|-------------|-------------|-------------------|----------------------------------|-------------|---------|-------------|-------|-------|-------|-----------------|-----------------|----------------------|----------------|--------------------|------------------|
| | | | | In-Situ | Removed | GRO | DRO | ORO | Total | | | | | | |
| Sidewall 1 | 10/8/2018 | - | - | X | | <15.0 | <15.0 | <15.0 | <15.0 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <4.98 |
| Sidewall 2 | 10/8/2018 | - | - | X | | - | - | - | - | - | - | - | - | - | <4.95 |
| Sidewall 3 | 10/8/2018 | - | - | X | | <14.9 | <14.9 | <14.9 | <14.9 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <4.98 |
| Sidewall 4 | 10/8/2018 | - | - | X | | - | - | - | - | - | - | - | - | - | <5.00 |
| Sidewall 5 | 10/8/2018 | - | - | X | | <15.0 | <15.0 | <15.0 | <15.0 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <4.95 |
| Sidewall 6 | 10/8/2018 | - | - | X | | - | - | - | - | - | - | - | - | - | <5.00 |
| Sidewall 7 | 10/8/2018 | - | - | X | | 15.3 | <15.0 | <15.0 | 15.3 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | 4.95 |
| Sidewall 8 | 10/8/2018 | - | - | X | | - | - | - | - | - | - | - | - | - | <5.00 |
| Sidewall 9 | 10/8/2018 | - | | X | | 15.6 | <15.0 | <15.0 | 15.6 | <0.00198 | <0.00198 | <0.00198 | <0.00198 | <0.00198 | <4.95 |
| Sidewall 10 | 10/8/2018 | - | - | X | | - | - | - | - | - | - | - | - | - | <4.98 |
| Sidewall 11 | 10/8/2018 | - | - | X | | 15.6 | <15.0 | <15.0 | 15.6 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <4.99 |
| Sidewall 12 | 10/8/2018 | - | - | X | | - | - | - | - | - | - | - | - | - | 835 |
| Sidewall 13 | 10/8/2018 | - | - | X | | <16.0 | <15.0 | <15.0 | <16.0 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <5.00 |
| Sidewall 14 | 10/8/2018 | - | - | X | | - | - | - | - | - | - | - | - | - | <5.00 |
| Sidewall 15 | 10/8/2018 | - | - | X | | <18.3 | <15.0 | <15.0 | <18.3 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <4.96 |
| Sidewall 16 | 10/8/2018 | - | - | X | | - | - | - | - | - | - | - | - | - | <4.96 |
| Sidewall 17 | 10/8/2018 | - | - | X | | 15.6 | <15.0 | <15.0 | 15.6 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <5.00 |

Table 1
COG
Cabo Blanco State #001H
Lea County, New Mexico

| Sample ID | Sample Date | Sample Depth (ft) | BEB (Below Excavation Bottom) ft | Soil Status | | TPH (mg/kg) | | | | Benzene (mg/kg) | Toluene (mg/kg) | Ethlybenzene (mg/kg) | Xylene (mg/kg) | Total BTEX (mg/kg) | Chloride (mg/kg) |
|-------------|-------------|-------------------|----------------------------------|-------------|---------|-------------|-------|-------|-------|-----------------|-----------------|----------------------|----------------|--------------------|------------------|
| | | | | In-Situ | Removed | GRO | DRO | ORO | Total | | | | | | |
| Sidewall 18 | 10/8/2018 | - | - | X | | - | - | - | - | - | - | - | - | - | 22.7 |
| Sidewall 19 | 10/8/2018 | - | - | X | | <15.4 | <15.0 | <15.0 | <15.4 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <5.00 |
| Sidewall 20 | 10/8/2018 | - | - | X | | - | - | - | - | - | - | - | - | - | 15.1 |
| Sidewall 21 | 10/8/2018 | - | - | X | | 16.1 | <15.0 | <15.0 | 16.1 | <0.00198 | <0.00198 | <0.00198 | <0.00198 | <0.00198 | <4.98 |
| Sidewall 22 | 10/8/2018 | - | - | X | | - | - | - | - | - | - | - | - | - | <5.00 |
| Sidewall 23 | 10/8/2018 | - | - | X | | <15.4 | <15.0 | <15.0 | <15.4 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | 184 |
| Sidewall 24 | 10/8/2018 | - | - | X | | - | - | - | - | - | - | - | - | - | 13.1 |
| Sidewall 25 | 10/8/2018 | - | - | X | | <14.9 | <14.9 | <14.9 | <14.9 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <5.00 |
| Sidewall 26 | 10/8/2018 | - | - | X | | - | - | - | - | - | - | - | - | - | <5.00 |
| Sidewall 27 | 10/8/2018 | - | - | X | | <15.0 | <15.0 | <15.0 | <15.0 | <0.00201 | <0.00201 | <0.00201 | <0.00201 | <0.00201 | <4.99 |
| Sidewall 28 | 10/8/2018 | - | - | X | | - | - | - | - | - | - | - | - | - | <4.99 |
| Sidewall 29 | 10/8/2018 | - | - | X | | <15.6 | <15.0 | <15.0 | <15.6 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <4.99 |
| Sidewall 30 | 10/8/2018 | - | - | X | | - | - | - | - | - | - | - | - | - | <5.00 |
| Sidewall 31 | 10/8/2018 | - | - | X | | <15.0 | <15.0 | <15.0 | <15.0 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <4.97 |
| Sidewall 32 | 10/8/2018 | - | - | X | | - | - | - | - | - | - | - | - | - | 26.3 |
| Sidewall 33 | 10/8/2018 | - | - | X | | <15.0 | <15.0 | <15.0 | <15.0 | <0.00198 | <0.00198 | <0.00198 | <0.00198 | <0.00198 | <4.99 |

(-)

Not Analyzed
Excavated
Above RRALs

Photos

COG
Cabo Blanco State 1H
Lea County, New Mexico



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View South – Excavated Area of Bottom hole 1-8



View South –Excavated Areas of Area of Bottom Hole 1-6

COG
Cabo Blanco State 1H
Lea County, New Mexico



View South – Excavated Area of Bottom hole 6 & Bottom Hole 7



View West – Area of SW-12

COG
Cabo Blanco State 1H
Lea County, New Mexico



View West – Excavated Area of Bottom Hole 10-11



View North – Excavated Area of Bottom Hole 9

COG
Cabo Blanco State 1H
Lea County, New Mexico



TETRA TECH



View South – Excavated Area of Bottom hole 12

Appendix A

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

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

Form C-141
Revised April 3, 2017
Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

| | |
|--|----------------------------|
| Name of Company: COG Production, LLC (OGRID #217955) | Contact: Robert McNeill |
| Address: 600 West Illinois Avenue, Midland, TX 79701 | Telephone No. 432-683-7443 |
| Facility Name: Cabo Blanco State #001H | Facility Type: Flowline |
| Surface Owner: State | Mineral Owner: State |
| API No. 30-025-40702 | |

LOCATION OF RELEASE

| Unit Letter | Section | Township | Range | Feet from the | North/South Line | Feet from the | East/West Line | County |
|-------------|---------|----------|-------|---------------|------------------|---------------|----------------|--------|
| D | 06 | 24S | 33E | | | | | Lea |

Latitude 32.25228 Longitude -103.61908 NAD83

NATURE OF RELEASE

| | | |
|--|--|---|
| Type of Release Produced Water | Volume of Release: 250 bbl. | Volume Recovered 220 bbl. |
| Source of Release Flowline Rupture | Date and Hour of Occurrence June 5, 2018 7:30am | Date and Hour of Discovery June 5, 2018 7:30am |
| Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required | If YES, To Whom? Olivia Yu – NMOCD Ryan Mann – SLO | |
| By Whom? DeAnn Grant | Date and Hour June 5, 2018 1:11pm | |
| Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | If YES, Volume Impacting the Watercourse. | |

If a Watercourse was Impacted, Describe Fully.*

RECEIVED

By CHernandez at 10:27 am, Jun 11, 2018

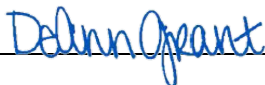

Describe Cause of Problem and Remedial Action Taken.*

The release was caused due to a damaged flex line rupturing. The flex line was repaired.

Describe Area Affected and Cleanup Action Taken.*

The release was in the pasture. A vacuum truck was dispatched to remove all freestanding fluids. Concho will have the spill area sampled to delineate any possible impact from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation activities.

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

| | | |
|--|---|--|
| Signature:  | OIL CONSERVATION DIVISION | |
| Printed Name: DeAnn Grant | Approved by Environmental Specialist:  | |
| Title: HSE Administrative Assistant | Approval Date: 6/11/2018 | Expiration Date: |
| E-mail Address: agrant@concho.com | Conditions of Approval: See attached directive | Attached <input checked="" type="checkbox"/> |
| Date: June 7, 2018 | Phone: (432) 253-4513 | |

* Attach Additional Sheets If Necessary

1RP-5088

nCH1816238890

pCH1816239636

Operator/Responsible Party,

The OCD has received the form C-141 you provided on _6/7/2018_ regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number _1RP-5088_ has been assigned. **Please refer to this case number in all future correspondence.**

It is the Division's obligation under both the Oil & Gas Act and Water Quality Act to provide for the protection of public health and the environment. Our regulations (19.15.29.11 NMAC) state the following,

The responsible person shall complete division-approved corrective action for releases that endanger public health or the environment. The responsible person shall address releases in accordance with a remediation plan submitted to and approved by the division or with an abatement plan submitted in accordance with 19.15.30 NMAC. [emphasis added]

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. **As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District _1_ office in __Hobbs__ on or before _7/11/2018_. If and when the release characterization workplan is approved, there will be an associated deadline for submittal of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.**

The goals of a characterization effort are: 1) determination of the lateral and vertical extents along with the magnitude of soil contamination. 2) determine if groundwater or surface waters have been impacted. 3) If groundwater or surface waters have been impacted, what are the extents and magnitude of that impact. 4) The characterization of any other adverse impacts that may have occurred (examples: impacts on vegetation, impacts on wildlife, air quality, loss of use of property, etc.). To meet these goals as quickly as possible, the following items must, at a minimum, be addressed in the release characterization workplan and subsequent reporting:

- Horizontal delineation of soil impacts in each of the four cardinal compass directions. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C₆ thru C₃₆), and for chloride by Method 300. This is not an exclusive list of potential contaminants. Analyzed parameters should be modified based on the nature of the released substance(s). Soil sampling must be both within the impacted area and beyond.
- Vertical delineation of soil impacts. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C₆ thru C₃₆), and for chloride by Method 300. As above, this is not an exclusive list of potential contaminants and can be modified. Vertical characterization samples should be taken at depth intervals no greater than five feet apart. Lithologic description of encountered soils must also be provided. At least ten vertical feet of soils with contaminant concentrations at or below these values must be demonstrated as existing above the water table.
- Nominal detection limits for field and laboratory analyses must be provided.
- Composite sampling is not generally allowed.
- Field screening and assessment techniques are acceptable (headspace, titration, EC [include algorithm for validation purposes], EM, etc.), but the sampling and assay procedures must be clearly defined. Copies of field notes are highly desirable. A statistically significant set of split samples must be submitted for confirmatory laboratory analysis, including the laterally farthest and vertically deepest sets of soil samples. Make sure there are at least two soil samples submitted

for laboratory analysis from each borehole or test pit (highest observed contamination and deepest depth investigated). Copies of the actual laboratory results must be provided including chain of custody documentation.

- Probable depth to shallowest protectable groundwater and lateral distance to nearest surface water. If there is an estimate of groundwater depth, the information used to arrive at that estimate must be provided. If there is a reasonable assumption that the depth to protectable water is 50 feet or less, the responsible party should anticipate the need for at least one groundwater monitoring well to be installed in the area of likely maximum contamination.

- If groundwater contamination is encountered, an additional investigation workplan may be required to determine the extents of that contamination. Groundwater and/or surface water samples, if any, must be analyzed by a competent laboratory for volatile organic hydrocarbons (typically Method 8260 full list), total dissolved solids, pH, major anions and cations including chloride and sulfate, dissolved iron, and dissolved manganese. The investigation workplan must provide the groundwater sampling method(s) and sample handling protocols. To the fullest extent possible, aqueous analyses must be undertaken using nominal method detection limits. As with the soil analyses, copies of the actual laboratory results must be provided including chain of custody documentation.

- Accurately scaled and well-drafted site maps must be provided providing the location of borings, test pits, monitoring wells, potentially impacted areas, and significant surface features including roads and site infrastructure that might limit either the release characterization or remedial efforts. Field sketches may be included in subsequent reporting, but should not be considered stand-alone documentation of the site's layout. Digital photographic documentation of the location and fieldwork is recommended, especially if unusual circumstances are encountered.

Nothing herein should be interpreted to preclude emergency response actions or to imply immediate remediation by removal cannot proceed as warranted. Nonetheless, characterization of impacts and confirmation of the effectiveness of remedial efforts must still be provided to the OCD before any release incident will be closed.

Jim Griswold

OCD Environmental Bureau Chief
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
505-476-3465
jim.griswold@state.nm.us

| | |
|----------------|----------|
| Incident ID | |
| District RP | 1RP-5088 |
| Facility ID | |
| Application ID | |

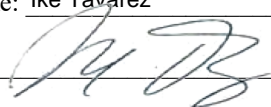
Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: *Each of the following items must be included in the closure report.*

- ☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- ☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- ☒ Description of 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 OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD 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. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Ike TavarazTitle: Senior HSE SupervisorSignature: Date: 4-15-19email: itavaraz@concho.comTelephone: 432-685-2573

OCD Only

Received by: _____

Date: _____

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: Date: 11/28/2022Printed Name: Brittany HallTitle: Environmental Specialist

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
Cabo Blanco State Com #001H
Lea County, New Mexico

| 23 South | | | 32 East | | |
|----------|----|-----------|---------|----|----|
| 6 | 5 | 4 | 3 | 2 | 1 |
| 7 | 8 | 9 | 10 | 11 | 12 |
| 18 | 17 | 16 | 15 | 14 | 13 |
| 19 | 20 | 21 400 | 22 | 23 | 24 |
| 30 | 29 | 28 | 27 | 26 | 25 |
| 31 | 32 | 33 | 34 | 35 | 36 |

| 23 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 | 28 400 | 27 | 26 225 | 25 225 |
| 31 | 32 | 33 | 34 | 35 | 36 |

| 23 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 |

| 24 South | | | 32 East | | |
|----------|----------|-----------|----------|----|----|
| 6 | 5 380 | 4 | 3 | 2 | 1 |
| 7 | 8 | 9 | 10 20 | 11 | 12 |
| 18 | 17 | 16 | 15 | 14 | 13 |
| 19 | 20 | 21 | 22 | 23 | 24 |
| 30 | 29 | 28 | 27 | 26 | 25 |
| 31 | 32 | 33 290 | 34 | 35 | 36 |

| 24 South | | | 33 East | | |
|-----------|-----------|-----------|----------|-----------|------------|
| 6 Site | 5 | 4 | 3 | 2 | 1 81 |
| 7 | 8 | 9 | 10 20 | 11 | 12 |
| 18 | 17 415 | 16 415 | 15 | 14 | 13 |
| 19 | 20 | 21 | 22 | 23 575 | 24 390 |
| 30 | 29 | 28 | 27 | 26 208 | 25 16.9 |
| 31 | 32 | 33 70 | 34 | 35 | 36 |

| 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 | 32 290 | 33 | 34 | 35 | 36 |

| 25 South | | | 33 East | | |
|----------|-----------|-----------|-----------|-----------|-----------|
| 6 | 5 | 4 | 3 172 | 2 | 1 |
| 7 | 8 | 9 | 10 | 11 140 | 12 200 |
| 18 | 17 | 16 | 15 | 14 | 13 |
| 19 | 20 | 21 | 22 | 23 | 24 |
| 30 | 29 200 | 28 120 | 27 | 26 | 25 |
| 31 | 32 | 33 | 34 125 | 35 | 36 |

| 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 |

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 | | | | | | | | | | | | | Water |
|------------------------------|------|-----------|--------|------|------|-----|-----|-----|-----|--------|----------|--------------------------|------------|--------------|-------|
| POD Number | Code | Sub-basin | County | Q 64 | Q 16 | Q 4 | Sec | Tws | Rng | X | Y | DepthWell | DepthWater | Water Column | |
| C 02308 | | CUB | LE | 1 | 3 | 1 | 10 | 24S | 33E | 634953 | 3567364* | <input type="checkbox"/> | 40 | 20 | 20 |
| C 02309 | | CUB | LE | 2 | 2 | 2 | 25 | 24S | 33E | 639638 | 3562994* | <input type="checkbox"/> | 60 | 30 | 30 |
| C 02310 | | CUB | LE | 2 | 3 | 2 | 33 | 24S | 33E | 634437 | 3560918* | <input type="checkbox"/> | 120 | 70 | 50 |
| C 02311 | | CUB | LE | 2 | 3 | 2 | 33 | 24S | 33E | 634437 | 3560918* | <input type="checkbox"/> | 120 | 70 | 50 |
| C 02430 | | CUB | LE | 3 | 3 | 3 | 16 | 24S | 33E | 633377 | 3564732* | <input type="checkbox"/> | 643 | 415 | 228 |
| C 02431 | | CUB | LE | 4 | 4 | 4 | 17 | 24S | 33E | 633175 | 3564728* | <input type="checkbox"/> | 525 | 415 | 110 |
| C 02432 | | CUB | LE | 4 | 4 | 4 | 17 | 24S | 33E | 633175 | 3564728* | <input type="checkbox"/> | 640 | 415 | 225 |
| C 02563 | | CUB | LE | 1 | 4 | 2 | 33 | 24S | 33E | 634639 | 3560923* | <input type="checkbox"/> | 120 | | |
| C 02564 | | CUB | LE | 2 | 4 | 2 | 33 | 24S | 33E | 634839 | 3560923* | <input type="checkbox"/> | 120 | | |
| C 02890 | | C | LE | | 2 | 4 | 29 | 24S | 33E | 633114 | 3562012* | <input type="checkbox"/> | 500 | | |
| C 03565 POD3 | | CUB | LE | | 3 | 4 | 08 | 24S | 33E | 632763 | 3566546 | <input type="checkbox"/> | | 1533 | |
| C 03591 POD1 | | CUB | LE | 2 | 1 | 4 | 05 | 24S | 33E | 632731 | 3568518 | <input type="checkbox"/> | | | |
| C 03600 POD1 | | CUB | LE | 2 | 2 | 1 | 26 | 24S | 33E | 637275 | 3563023 | <input type="checkbox"/> | | | |
| C 03600 POD2 | | CUB | LE | 4 | 4 | 1 | 25 | 24S | 33E | 638824 | 3562329 | <input type="checkbox"/> | | | |
| C 03600 POD3 | | CUB | LE | 3 | 4 | 2 | 26 | 24S | 33E | 637784 | 3562340 | <input type="checkbox"/> | | | |
| C 03600 POD4 | | CUB | LE | 3 | 3 | 1 | 26 | 24S | 33E | 636617 | 3562293 | <input type="checkbox"/> | | | |
| C 03600 POD5 | | CUB | LE | 3 | 2 | 4 | 26 | 24S | 33E | 637857 | 3562020 | <input type="checkbox"/> | | | |
| C 03600 POD6 | | CUB | LE | 3 | 1 | 4 | 26 | 24S | 33E | 637383 | 3562026 | <input type="checkbox"/> | | | |
| C 03600 POD7 | | CUB | LE | 3 | 1 | 3 | 26 | 24S | 33E | 636726 | 3561968 | <input type="checkbox"/> | | | |
| C 03601 POD1 | | CUB | LE | 4 | 4 | 2 | 23 | 24S | 33E | 638124 | 3563937 | <input type="checkbox"/> | | | |
| C 03601 POD2 | | CUB | LE | 3 | 2 | 4 | 23 | 24S | 33E | 637846 | 3563588 | <input type="checkbox"/> | | | |
| C 03601 POD3 | | CUB | LE | 1 | 3 | 3 | 24 | 24S | 33E | 638142 | 3563413 | <input type="checkbox"/> | | | |
| C 03601 POD4 | | CUB | LE | 3 | 3 | 3 | 24 | 24S | 33E | 638162 | 3561375 | <input type="checkbox"/> | | | |
| C 03601 POD5 | | CUB | LE | 2 | 4 | 4 | 23 | 24S | 33E | 637988 | 3563334 | <input type="checkbox"/> | | | |
| C 03601 POD6 | | CUB | LE | 1 | 4 | 4 | 23 | 24S | 33E | 637834 | 3563338 | <input type="checkbox"/> | | | |
| C 03601 POD7 | | CUB | LE | 4 | 4 | 4 | 23 | 24S | 33E | 637946 | 3563170 | <input type="checkbox"/> | | | |
| C 03602 POD2 | | CUB | LE | 4 | 4 | 1 | 25 | 24S | 33E | 638824 | 3562329 | <input type="checkbox"/> | | | |
| C 03603 POD1 | | CUB | LE | 3 | 2 | 2 | 35 | 24S | 33E | 637805 | 3561225 | <input type="checkbox"/> | | | |
| C 03603 POD2 | | CUB | LE | 3 | 1 | 2 | 35 | 24S | 33E | 637384 | 3561167 | <input type="checkbox"/> | | | |
| C 03603 POD3 | | CUB | LE | 4 | 1 | 1 | 35 | 24S | 33E | 636890 | 3561092 | <input type="checkbox"/> | | | |
| C 03603 POD4 | | CUB | LE | 3 | 2 | 4 | 35 | 24S | 33E | 637789 | 3560461 | <input type="checkbox"/> | | | |
| C 03603 POD5 | | CUB | LE | 3 | 3 | 2 | 35 | 24S | 33E | 636745 | 3560767 | <input type="checkbox"/> | | | |
| C 03603 POD6 | | CUB | LE | 3 | 1 | 3 | 35 | 24S | 33E | 636749 | 3560447 | <input type="checkbox"/> | | | |
| C 03662 POD1 | | C | LE | 3 | 1 | 2 | 23 | 24S | 33E | 637342 | 3564428 | <input type="checkbox"/> | 550 | 110 | 440 |
| C 03666 POD1 | | C | LE | 2 | 3 | 4 | 13 | 24S | 33E | 639132 | 3565078 | <input type="checkbox"/> | 650 | 390 | 260 |
| C 03679 POD1 | | C | ED | 1 | 4 | 2 | 14 | 24S | 33E | 603567 | 3581547 | <input type="checkbox"/> | 700 | 575 | 125 |
| C 03917 POD1 | | C | LE | 4 | 1 | 3 | 13 | 24S | 33E | 638374 | 3565212 | <input type="checkbox"/> | 600 | 420 | 180 |
| C 04014 POD2 | | CUB | LE | 4 | 4 | 2 | 01 | 24S | 33E | 639656 | 3568917 | <input type="checkbox"/> | 95 | 81 | 14 |
| C 04014 POD3 | | CUB | LE | 2 | 4 | 2 | 01 | 24S | 33E | 639497 | 3569007 | <input type="checkbox"/> | 95 | 87 | 8 |
| C 04014 POD4 | | CUB | LE | 3 | 4 | 2 | 01 | 24S | 33E | 639295 | 3568859 | <input type="checkbox"/> | 96 | 86 | 10 |
| C 04014 POD5 | | CUB | LE | 1 | 4 | 2 | 01 | 24S | 33E | 639284 | 3569086 | <input type="checkbox"/> | 95 | 85 | 10 |

Average Depth to Water: **300 feet**

Minimum Depth: **20 feet**

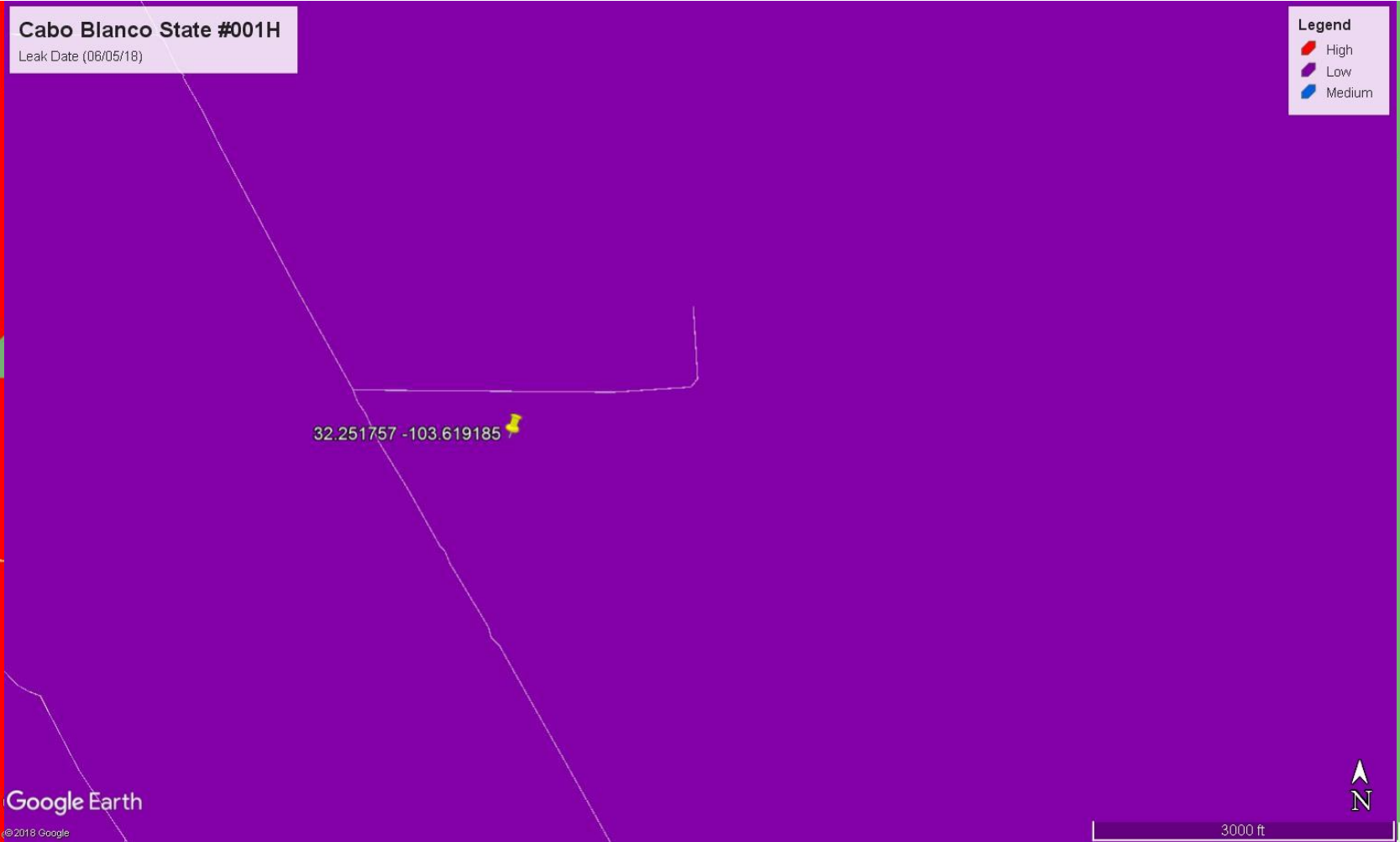
Maximum Depth: **1533 feet**

Record Count: 41

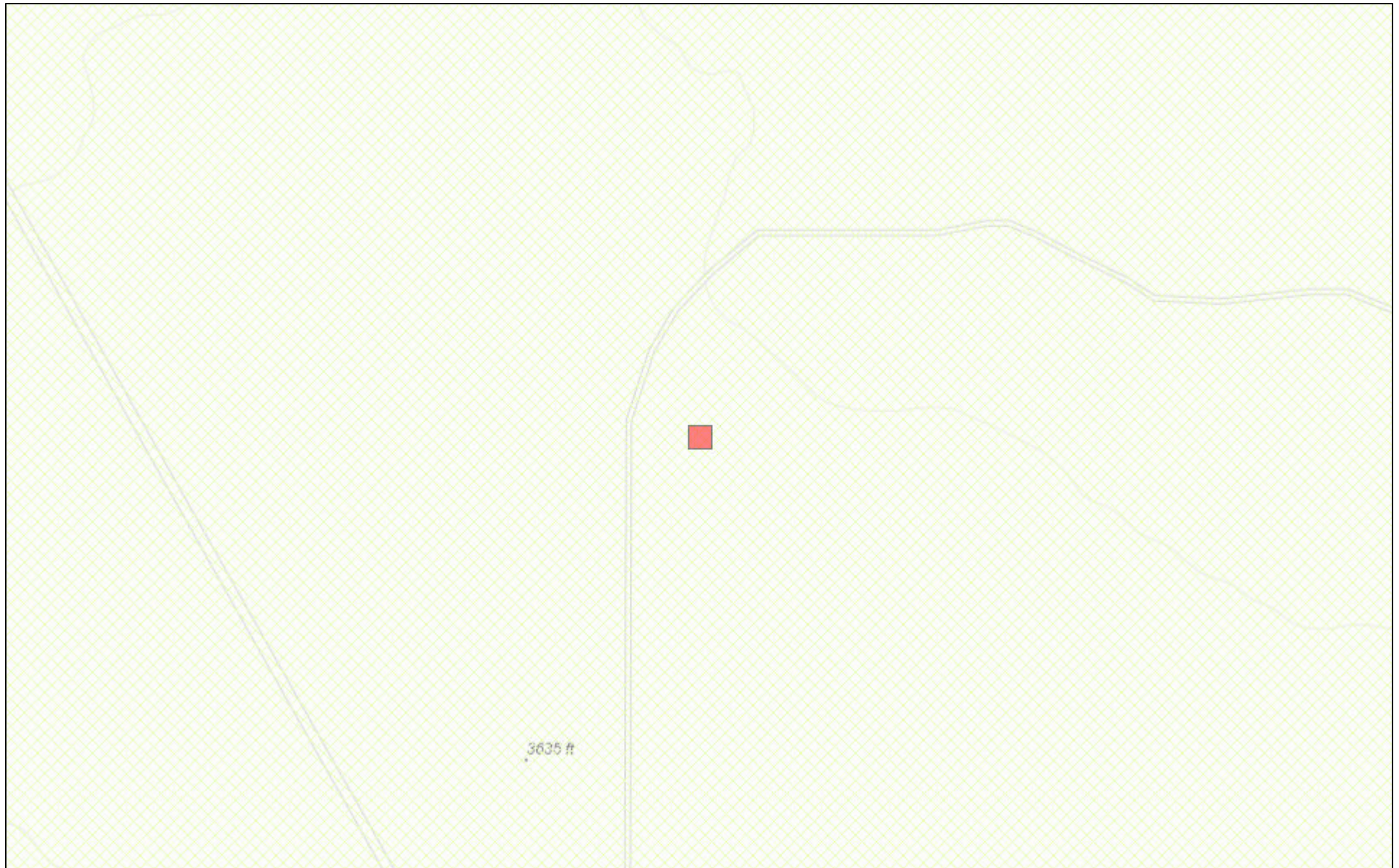
PLSS Search:

Township: 24S Range: 33E

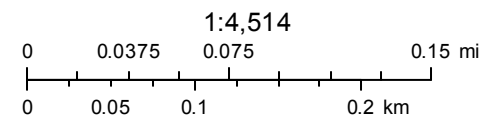
*UTM location was derived from PLSS - see Help



New Mexico NFHL Data



April 10, 2019



FEMA
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS,

Appendix C

NMSLO Seed Mix**Shallow (SH)****SHALLOW (SH) SITES SEED MIXTURE:**

| COMMON NAME | VARIETY | APPLICATION RATE (PLS/Acre) | DRILL BOX |
|---------------------------------|--------------------|--------------------------------|--------------|
| Grasses: | | | |
| Sideoats grama | Vaughn, El Reno | 4.0 | F |
| Blue grama | Lovington, Hachita | 3.0 | D |
| Little bluestem | Pastura, Cimmaron | 1.5 | F |
| Green sprangletop | VNS, Southern | 1.0 | D |
| Plains bristlegrass | VNS, Southern | 1.0 | D |
| Forbs: | | | |
| Firewheel (<i>Gaillardia</i>) | VNS, Southern | 1.0 | D |
| Shrubs: | | | |
| Fourwing saltbush | Marana, Santa Rita | 1.0 | D |
| Common winterfat | VNS, Southern | 0.5 | F |
| Total PLS/acre | | 13.0 | |

S = Small seed drill box, D = Standard seed drill box, F = Fluffy seed drill box
VNS = Variety Not Stated, PLS = Pure Live Seed

- Seed mixes should be provided in bags separating seed types into the three categories: small (S), standard (D) and fluffy (F).
- VNS, Southern – Seed should be from a southern latitude collection of this species.
- Double seed application rate for broadcast or hydroseeding.
- If one species is not available, contact the SLO for an approved substitute; alternatively the SLO may require other species proportionately increased.
- Additional information on these seed species can be found on the USDA Plants Database website at <http://plants.usda.gov>.



Map Unit Description

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this report, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named, soils that are similar to the named components, and some minor components that differ in use and management from the major soils.

Most of the soils similar to the major components have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Some minor components, however, have properties and behavior characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Map Unit Description: Pyote and maljamar fine sands---Lea County, New Mexico

Soils that have profiles that are almost alike make up a *soil series*. All the soils of a series have major horizons that are similar in composition, thickness, and arrangement. Soils of a given series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Additional information about the map units described in this report is available in other soil reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the soil reports define some of the properties included in the map unit descriptions.

Lea County, New Mexico

PU—Pyote and maljamar fine sands

Map Unit Setting

National map unit symbol: dmqq

Elevation: 3,000 to 3,900 feet

Mean annual precipitation: 10 to 12 inches

Mean annual air temperature: 60 to 62 degrees F

Frost-free period: 190 to 205 days

Map Unit Description: Pyote and maljamar fine sands---Lea County, New Mexico

Farmland classification: Not prime farmland

Map Unit Composition

Maljamar and similar soils: 45 percent

Pyote and similar soils: 45 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Maljamar

Setting

Landform: Plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Sandy eolian deposits derived from sedimentary rock

Typical profile

A - 0 to 24 inches: fine sand

Bt - 24 to 50 inches: sandy clay loam

Bkm - 50 to 60 inches: cemented material

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: 40 to 60 inches to petrocalcic

Natural drainage class: Well drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum in profile: 5 percent

Gypsum, maximum in profile: 1 percent

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 2.0

Available water storage in profile: Low (about 5.6 inches)

Interpretive groups

Land capability classification (irrigated): 6e

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: B

Ecological site: Loamy Sand (R042XC003NM)

Hydric soil rating: No

Description of Pyote

Setting

Landform: Plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Map Unit Description: Pyote and maljamar fine sands---Lea County, New Mexico

Across-slope shape: Linear

Parent material: Sandy eolian deposits derived from sedimentary rock

Typical profile

A - 0 to 30 inches: fine sand

Bt - 30 to 60 inches: fine sandy loam

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Well drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): High
(2.00 to 6.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum in profile: 5 percent

Gypsum, maximum in profile: 1 percent

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 2.0

Available water storage in profile: Low (about 5.1 inches)

Interpretive groups

Land capability classification (irrigated): 6e

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: A

Ecological site: Loamy Sand (R042XC003NM)

Hydric soil rating: No

Minor Components

Kermit

Percent of map unit: 10 percent

Ecological site: Sandhills (R042XC022NM)

Hydric soil rating: No

Data Source Information

Soil Survey Area: Lea County, New Mexico

Survey Area Data: Version 15, Sep 12, 2018

Appendix D



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

October 09, 2018

DAKOTA NEEL

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: CABO BLANCO STATE #001H

Enclosed are the results of analyses for samples received by the laboratory on 10/08/18 14:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene".

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

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

| | | | |
|-------------------|-------------------------|---------------------|----------------|
| Received: | 10/08/2018 | Sampling Date: | 10/03/2018 |
| Reported: | 10/09/2018 | Sampling Type: | Soil |
| Project Name: | CABO BLANCO STATE #001H | Sampling Condition: | Cool & Intact |
| Project Number: | NONE GIVEN | Sample Received By: | Tamara Oldaker |
| Project Location: | NOT GIVEN | | |

Sample ID: BTM - SP 1 (H802853-01)

| BTEX 8021B | | mg/kg | | Analyzed By: ms | | | | | | |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|-------|-----------|--|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier | |
| Benzene* | <0.050 | 0.050 | 10/08/2018 | ND | 2.12 | 106 | 2.00 | 0.321 | | |
| Toluene* | <0.050 | 0.050 | 10/08/2018 | ND | 1.97 | 98.7 | 2.00 | 0.155 | | |
| Ethylbenzene* | <0.050 | 0.050 | 10/08/2018 | ND | 1.96 | 98.2 | 2.00 | 0.276 | | |
| Total Xylenes* | <0.150 | 0.150 | 10/08/2018 | ND | 5.89 | 98.2 | 6.00 | 0.482 | | |
| Total BTEX | <0.300 | 0.300 | 10/08/2018 | ND | | | | | | |

Surrogate: 4-Bromofluorobenzene (PID) 96.6 % 69.8-142

| Chloride, SM4500Cl-B | | mg/kg | | Analyzed By: AC | | | | | | |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|--|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier | |
| Chloride | 32.0 | 16.0 | 10/09/2018 | ND | 432 | 108 | 400 | 0.00 | | |

| TPH 8015M | | mg/kg | | Analyzed By: MS | | | | | |
|------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|-------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| GRO C6-C10* | <10.0 | 10.0 | 10/08/2018 | ND | 169 | 84.7 | 200 | 0.970 | |
| DRO >C10-C28* | <10.0 | 10.0 | 10/08/2018 | ND | 172 | 85.8 | 200 | 2.75 | |
| EXT DRO >C28-C36 | <10.0 | 10.0 | 10/08/2018 | ND | | | | | |

Surrogate: 1-Chlorooctane 89.4 % 41-142

Surrogate: 1-Chlorooctadecane 91.6 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

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

Received: 10/08/2018
 Reported: 10/09/2018
 Project Name: CABO BLANCO STATE #001H
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 10/03/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BTM - SP 2 (H802853-02)

| BTEX 8021B | | mg/kg | | Analyzed By: ms | | | | | | |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|-------|-----------|--|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier | |
| Benzene* | <0.050 | 0.050 | 10/08/2018 | ND | 2.12 | 106 | 2.00 | 0.321 | | |
| Toluene* | <0.050 | 0.050 | 10/08/2018 | ND | 1.97 | 98.7 | 2.00 | 0.155 | | |
| Ethylbenzene* | <0.050 | 0.050 | 10/08/2018 | ND | 1.96 | 98.2 | 2.00 | 0.276 | | |
| Total Xylenes* | <0.150 | 0.150 | 10/08/2018 | ND | 5.89 | 98.2 | 6.00 | 0.482 | | |
| Total BTEX | <0.300 | 0.300 | 10/08/2018 | ND | | | | | | |

Surrogate: 4-Bromofluorobenzene (PID) 98.6 % 69.8-142

| Chloride, SM4500CI-B | | mg/kg | | Analyzed By: AC | | | | | | |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|--|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier | |
| Chloride | 32.0 | 16.0 | 10/09/2018 | ND | 432 | 108 | 400 | 0.00 | | |

| TPH 8015M | | mg/kg | | Analyzed By: MS | | | | | |
|------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|-------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| GRO C6-C10* | <10.0 | 10.0 | 10/08/2018 | ND | 169 | 84.7 | 200 | 0.970 | |
| DRO >C10-C28* | <10.0 | 10.0 | 10/08/2018 | ND | 172 | 85.8 | 200 | 2.75 | |
| EXT DRO >C28-C36 | <10.0 | 10.0 | 10/08/2018 | ND | | | | | |

Surrogate: 1-Chlorooctane 83.5 % 41-142

Surrogate: 1-Chlorooctadecane 80.5 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 10/08/2018
 Reported: 10/09/2018
 Project Name: CABO BLANCO STATE #001H
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 10/03/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BTM - SP 3 (H802853-03)

| BTEx 8021B | | mg/kg | | Analyzed By: ms | | | | | |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|-------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| Benzene* | <0.050 | 0.050 | 10/08/2018 | ND | 2.12 | 106 | 2.00 | 0.321 | |
| Toluene* | <0.050 | 0.050 | 10/08/2018 | ND | 1.97 | 98.7 | 2.00 | 0.155 | |
| Ethylbenzene* | <0.050 | 0.050 | 10/08/2018 | ND | 1.96 | 98.2 | 2.00 | 0.276 | |
| Total Xylenes* | <0.150 | 0.150 | 10/08/2018 | ND | 5.89 | 98.2 | 6.00 | 0.482 | |
| Total BTEX | <0.300 | 0.300 | 10/08/2018 | ND | | | | | |

Surrogate: 4-Bromofluorobenzene (PID) 99.0 % 69.8-142

| Chloride, SM4500CI-B | | mg/kg | | Analyzed By: AC | | | | | | |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|--|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier | |
| Chloride | <16.0 | 16.0 | 10/09/2018 | ND | 432 | 108 | 400 | 0.00 | | |

| TPH 8015M | | mg/kg | | Analyzed By: MS | | | | | |
|------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|-------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| GRO C6-C10* | <10.0 | 10.0 | 10/08/2018 | ND | 169 | 84.7 | 200 | 0.970 | |
| DRO >C10-C28* | <10.0 | 10.0 | 10/08/2018 | ND | 172 | 85.8 | 200 | 2.75 | |
| EXT DRO >C28-C36 | <10.0 | 10.0 | 10/08/2018 | ND | | | | | |

Surrogate: 1-Chlorooctane 90.9 % 41-142

Surrogate: 1-Chlorooctadecane 87.1 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 10/08/2018
 Reported: 10/09/2018
 Project Name: CABO BLANCO STATE #001H
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 10/03/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BTM - SP 4 (H802853-04)

| BTEx 8021B | | mg/kg | | Analyzed By: ms | | | | | |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|-------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| Benzene* | <0.050 | 0.050 | 10/08/2018 | ND | 2.12 | 106 | 2.00 | 0.321 | |
| Toluene* | <0.050 | 0.050 | 10/08/2018 | ND | 1.97 | 98.7 | 2.00 | 0.155 | |
| Ethylbenzene* | <0.050 | 0.050 | 10/08/2018 | ND | 1.96 | 98.2 | 2.00 | 0.276 | |
| Total Xylenes* | <0.150 | 0.150 | 10/08/2018 | ND | 5.89 | 98.2 | 6.00 | 0.482 | |
| Total BTEX | <0.300 | 0.300 | 10/08/2018 | ND | | | | | |

Surrogate: 4-Bromofluorobenzene (PID) 98.3 % 69.8-142

| Chloride, SM4500CI-B | | mg/kg | | Analyzed By: AC | | | | | | |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|--|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier | |
| Chloride | <16.0 | 16.0 | 10/09/2018 | ND | 432 | 108 | 400 | 0.00 | | |

| TPH 8015M | | mg/kg | | Analyzed By: MS | | | | | |
|------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|-------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| GRO C6-C10* | <10.0 | 10.0 | 10/08/2018 | ND | 169 | 84.7 | 200 | 0.970 | |
| DRO >C10-C28* | <10.0 | 10.0 | 10/08/2018 | ND | 172 | 85.8 | 200 | 2.75 | |
| EXT DRO >C28-C36 | <10.0 | 10.0 | 10/08/2018 | ND | | | | | |

Surrogate: 1-Chlorooctane 87.5 % 41-142

Surrogate: 1-Chlorooctadecane 84.6 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 10/08/2018
 Reported: 10/09/2018
 Project Name: CABO BLANCO STATE #001H
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 10/03/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BTM - SP 5 (H802853-05)

| BTEX 8021B | | mg/kg | | Analyzed By: ms | | | | | | |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|-------|-----------|--|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier | |
| Benzene* | <0.050 | 0.050 | 10/08/2018 | ND | 2.12 | 106 | 2.00 | 0.321 | | |
| Toluene* | <0.050 | 0.050 | 10/08/2018 | ND | 1.97 | 98.7 | 2.00 | 0.155 | | |
| Ethylbenzene* | <0.050 | 0.050 | 10/08/2018 | ND | 1.96 | 98.2 | 2.00 | 0.276 | | |
| Total Xylenes* | <0.150 | 0.150 | 10/08/2018 | ND | 5.89 | 98.2 | 6.00 | 0.482 | | |
| Total BTEX | <0.300 | 0.300 | 10/08/2018 | ND | | | | | | |

Surrogate: 4-Bromofluorobenzene (PID) 98.6 % 69.8-142

| Chloride, SM4500CI-B | | mg/kg | | Analyzed By: AC | | | | | | |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|--|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier | |
| Chloride | 16.0 | 16.0 | 10/09/2018 | ND | 432 | 108 | 400 | 0.00 | | |

| TPH 8015M | | mg/kg | | Analyzed By: MS | | | | | |
|------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|-------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| GRO C6-C10* | <10.0 | 10.0 | 10/08/2018 | ND | 169 | 84.7 | 200 | 0.970 | |
| DRO >C10-C28* | <10.0 | 10.0 | 10/08/2018 | ND | 172 | 85.8 | 200 | 2.75 | |
| EXT DRO >C28-C36 | <10.0 | 10.0 | 10/08/2018 | ND | | | | | |

Surrogate: 1-Chlorooctane 86.3 % 41-142

Surrogate: 1-Chlorooctadecane 82.7 % 37.6-147

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Analytical Results For:

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

Received: 10/08/2018
 Reported: 10/09/2018
 Project Name: CABO BLANCO STATE #001H
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 10/03/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BTM - SP 6 (H802853-06)

| BTEX 8021B | | mg/kg | | Analyzed By: ms | | | | | | |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|-------|-----------|--|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier | |
| Benzene* | <0.050 | 0.050 | 10/08/2018 | ND | 2.12 | 106 | 2.00 | 0.321 | | |
| Toluene* | <0.050 | 0.050 | 10/08/2018 | ND | 1.97 | 98.7 | 2.00 | 0.155 | | |
| Ethylbenzene* | <0.050 | 0.050 | 10/08/2018 | ND | 1.96 | 98.2 | 2.00 | 0.276 | | |
| Total Xylenes* | <0.150 | 0.150 | 10/08/2018 | ND | 5.89 | 98.2 | 6.00 | 0.482 | | |
| Total BTEX | <0.300 | 0.300 | 10/08/2018 | ND | | | | | | |

Surrogate: 4-Bromofluorobenzene (PID) 97.2 % 69.8-142

| Chloride, SM4500Cl-B | | mg/kg | | Analyzed By: AC | | | | | | |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|--|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier | |
| Chloride | 64.0 | 16.0 | 10/09/2018 | ND | 432 | 108 | 400 | 0.00 | | |

| TPH 8015M | | mg/kg | | Analyzed By: MS | | | | | |
|------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|-------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| GRO C6-C10* | <10.0 | 10.0 | 10/08/2018 | ND | 169 | 84.7 | 200 | 0.970 | |
| DRO >C10-C28* | <10.0 | 10.0 | 10/08/2018 | ND | 172 | 85.8 | 200 | 2.75 | |
| EXT DRO >C28-C36 | <10.0 | 10.0 | 10/08/2018 | ND | | | | | |

Surrogate: 1-Chlorooctane 92.0 % 41-142

Surrogate: 1-Chlorooctadecane 88.3 % 37.6-147

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Analytical Results For:

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

Received: 10/08/2018
 Reported: 10/09/2018
 Project Name: CABO BLANCO STATE #001H
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 10/03/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BTM - SP 7 (H802853-07)

| BTEx 8021B | | mg/kg | | Analyzed By: ms | | | | | |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|-------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| Benzene* | <0.050 | 0.050 | 10/08/2018 | ND | 2.12 | 106 | 2.00 | 0.321 | |
| Toluene* | <0.050 | 0.050 | 10/08/2018 | ND | 1.97 | 98.7 | 2.00 | 0.155 | |
| Ethylbenzene* | <0.050 | 0.050 | 10/08/2018 | ND | 1.96 | 98.2 | 2.00 | 0.276 | |
| Total Xylenes* | <0.150 | 0.150 | 10/08/2018 | ND | 5.89 | 98.2 | 6.00 | 0.482 | |
| Total BTEX | <0.300 | 0.300 | 10/08/2018 | ND | | | | | |

Surrogate: 4-Bromofluorobenzene (PID) 97.9 % 69.8-142

| Chloride, SM4500CI-B | | mg/kg | | Analyzed By: AC | | | | | |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| Chloride | 3320 | 16.0 | 10/09/2018 | ND | 432 | 108 | 400 | 0.00 | |

| TPH 8015M | | mg/kg | | Analyzed By: MS | | | | | |
|------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|-------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| GRO C6-C10* | <10.0 | 10.0 | 10/08/2018 | ND | 169 | 84.7 | 200 | 0.970 | |
| DRO >C10-C28* | <10.0 | 10.0 | 10/08/2018 | ND | 172 | 85.8 | 200 | 2.75 | |
| EXT DRO >C28-C36 | <10.0 | 10.0 | 10/08/2018 | ND | | | | | |

Surrogate: 1-Chlorooctane 87.5 % 41-142

Surrogate: 1-Chlorooctadecane 84.3 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 10/08/2018
 Reported: 10/09/2018
 Project Name: CABO BLANCO STATE #001H
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 10/03/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BTM - SP 8 (H802853-08)

| BTEX 8021B | | mg/kg | | Analyzed By: ms | | | | | | |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|-------|-----------|--|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier | |
| Benzene* | <0.050 | 0.050 | 10/08/2018 | ND | 2.12 | 106 | 2.00 | 0.321 | | |
| Toluene* | <0.050 | 0.050 | 10/08/2018 | ND | 1.97 | 98.7 | 2.00 | 0.155 | | |
| Ethylbenzene* | <0.050 | 0.050 | 10/08/2018 | ND | 1.96 | 98.2 | 2.00 | 0.276 | | |
| Total Xylenes* | <0.150 | 0.150 | 10/08/2018 | ND | 5.89 | 98.2 | 6.00 | 0.482 | | |
| Total BTEX | <0.300 | 0.300 | 10/08/2018 | ND | | | | | | |

Surrogate: 4-Bromofluorobenzene (PID) 96.9 % 69.8-142

| Chloride, SM4500CI-B | | mg/kg | | Analyzed By: AC | | | | | | |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|--|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier | |
| Chloride | 224 | 16.0 | 10/09/2018 | ND | 432 | 108 | 400 | 0.00 | | |

| TPH 8015M | | mg/kg | | Analyzed By: MS | | | | | |
|------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|-------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| GRO C6-C10* | <10.0 | 10.0 | 10/08/2018 | ND | 169 | 84.7 | 200 | 0.970 | |
| DRO >C10-C28* | <10.0 | 10.0 | 10/08/2018 | ND | 172 | 85.8 | 200 | 2.75 | |
| EXT DRO >C28-C36 | <10.0 | 10.0 | 10/08/2018 | ND | | | | | |

Surrogate: 1-Chlorooctane 94.5 % 41-142

Surrogate: 1-Chlorooctadecane 89.9 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

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

Received: 10/08/2018
 Reported: 10/09/2018
 Project Name: CABO BLANCO STATE #001H
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 10/03/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BTM - SP 9 (H802853-09)

| BTEx 8021B | | mg/kg | | Analyzed By: ms | | | | | |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|-------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| Benzene* | <0.050 | 0.050 | 10/09/2018 | ND | 2.12 | 106 | 2.00 | 0.321 | |
| Toluene* | <0.050 | 0.050 | 10/09/2018 | ND | 1.97 | 98.7 | 2.00 | 0.155 | |
| Ethylbenzene* | <0.050 | 0.050 | 10/09/2018 | ND | 1.96 | 98.2 | 2.00 | 0.276 | |
| Total Xylenes* | <0.150 | 0.150 | 10/09/2018 | ND | 5.89 | 98.2 | 6.00 | 0.482 | |
| Total BTEX | <0.300 | 0.300 | 10/09/2018 | ND | | | | | |

Surrogate: 4-Bromofluorobenzene (PID) 97.3 % 69.8-142

| Chloride, SM4500CI-B | | mg/kg | | Analyzed By: AC | | | | | | |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|--|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier | |
| Chloride | 192 | 16.0 | 10/09/2018 | ND | 432 | 108 | 400 | 0.00 | | |

| TPH 8015M | | mg/kg | | Analyzed By: MS | | | | | |
|------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|-------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| GRO C6-C10* | <10.0 | 10.0 | 10/08/2018 | ND | 169 | 84.7 | 200 | 0.970 | |
| DRO >C10-C28* | <10.0 | 10.0 | 10/08/2018 | ND | 172 | 85.8 | 200 | 2.75 | |
| EXT DRO >C28-C36 | <10.0 | 10.0 | 10/08/2018 | ND | | | | | |

Surrogate: 1-Chlorooctane 88.3 % 41-142

Surrogate: 1-Chlorooctadecane 84.0 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

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

Received: 10/08/2018
 Reported: 10/09/2018
 Project Name: CABO BLANCO STATE #001H
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 10/03/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BTM - SP 10 (H802853-10)

| BTEx 8021B | | mg/kg | | Analyzed By: ms | | | | | |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|-------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| Benzene* | <0.050 | 0.050 | 10/09/2018 | ND | 2.12 | 106 | 2.00 | 0.321 | |
| Toluene* | <0.050 | 0.050 | 10/09/2018 | ND | 1.97 | 98.7 | 2.00 | 0.155 | |
| Ethylbenzene* | <0.050 | 0.050 | 10/09/2018 | ND | 1.96 | 98.2 | 2.00 | 0.276 | |
| Total Xylenes* | <0.150 | 0.150 | 10/09/2018 | ND | 5.89 | 98.2 | 6.00 | 0.482 | |
| Total BTEX | <0.300 | 0.300 | 10/09/2018 | ND | | | | | |

Surrogate: 4-Bromofluorobenzene (PID) 97.4 % 69.8-142

| Chloride, SM4500CI-B | | mg/kg | | Analyzed By: AC | | | | | | |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|--|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier | |
| Chloride | 32.0 | 16.0 | 10/09/2018 | ND | 432 | 108 | 400 | 0.00 | | |

| TPH 8015M | | mg/kg | | Analyzed By: MS | | | | | |
|------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|-------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| GRO C6-C10* | <10.0 | 10.0 | 10/08/2018 | ND | 169 | 84.7 | 200 | 0.970 | |
| DRO >C10-C28* | <10.0 | 10.0 | 10/08/2018 | ND | 172 | 85.8 | 200 | 2.75 | |
| EXT DRO >C28-C36 | <10.0 | 10.0 | 10/08/2018 | ND | | | | | |

Surrogate: 1-Chlorooctane 94.6 % 41-142

Surrogate: 1-Chlorooctadecane 89.4 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 10/08/2018
 Reported: 10/09/2018
 Project Name: CABO BLANCO STATE #001H
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 10/03/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BTM - SP 11 (H802853-11)

| BTEx 8021B | | mg/kg | | Analyzed By: ms | | | | | | |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|-------|-----------|--|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier | |
| Benzene* | <0.050 | 0.050 | 10/09/2018 | ND | 2.12 | 106 | 2.00 | 0.321 | | |
| Toluene* | <0.050 | 0.050 | 10/09/2018 | ND | 1.97 | 98.7 | 2.00 | 0.155 | | |
| Ethylbenzene* | <0.050 | 0.050 | 10/09/2018 | ND | 1.96 | 98.2 | 2.00 | 0.276 | | |
| Total Xylenes* | <0.150 | 0.150 | 10/09/2018 | ND | 5.89 | 98.2 | 6.00 | 0.482 | | |
| Total BTEX | <0.300 | 0.300 | 10/09/2018 | ND | | | | | | |

Surrogate: 4-Bromofluorobenzene (PID) 96.7 % 69.8-142

| Chloride, SM4500CI-B | | mg/kg | | Analyzed By: AC | | | | | |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| Chloride | 48.0 | 16.0 | 10/09/2018 | ND | 432 | 108 | 400 | 0.00 | |

| TPH 8015M | | mg/kg | | Analyzed By: MS | | | | | |
|------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|-------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| GRO C6-C10* | <10.0 | 10.0 | 10/08/2018 | ND | 169 | 84.7 | 200 | 0.970 | |
| DRO >C10-C28* | <10.0 | 10.0 | 10/08/2018 | ND | 172 | 85.8 | 200 | 2.75 | |
| EXT DRO >C28-C36 | <10.0 | 10.0 | 10/08/2018 | ND | | | | | |

Surrogate: 1-Chlorooctane 91.8 % 41-142

Surrogate: 1-Chlorooctadecane 87.6 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 10/08/2018
 Reported: 10/09/2018
 Project Name: CABO BLANCO STATE #001H
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 10/03/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BTM - SP 12 (H802853-12)

| BTEx 8021B | | mg/kg | | Analyzed By: ms | | | | | |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|-------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| Benzene* | <0.050 | 0.050 | 10/09/2018 | ND | 2.12 | 106 | 2.00 | 0.321 | |
| Toluene* | <0.050 | 0.050 | 10/09/2018 | ND | 1.97 | 98.7 | 2.00 | 0.155 | |
| Ethylbenzene* | <0.050 | 0.050 | 10/09/2018 | ND | 1.96 | 98.2 | 2.00 | 0.276 | |
| Total Xylenes* | <0.150 | 0.150 | 10/09/2018 | ND | 5.89 | 98.2 | 6.00 | 0.482 | |
| Total BTEX | <0.300 | 0.300 | 10/09/2018 | ND | | | | | |

Surrogate: 4-Bromofluorobenzene (PID) 95.3 % 69.8-142

| Chloride, SM4500CI-B | | mg/kg | | Analyzed By: AC | | | | | | |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|--|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier | |
| Chloride | 32.0 | 16.0 | 10/09/2018 | ND | 432 | 108 | 400 | 0.00 | | |

| TPH 8015M | | mg/kg | | Analyzed By: MS | | | | | |
|------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|-------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| GRO C6-C10* | <10.0 | 10.0 | 10/09/2018 | ND | 169 | 84.7 | 200 | 0.970 | |
| DRO >C10-C28* | <10.0 | 10.0 | 10/09/2018 | ND | 172 | 85.8 | 200 | 2.75 | |
| EXT DRO >C28-C36 | <10.0 | 10.0 | 10/09/2018 | ND | | | | | |

Surrogate: 1-Chlorooctane 91.4 % 41-142

Surrogate: 1-Chlorooctadecane 88.5 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 10/08/2018
 Reported: 10/09/2018
 Project Name: CABO BLANCO STATE #001H
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 10/03/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: 1.5'/4.5' (H802853-13)

| BTEx 8021B | | mg/kg | | Analyzed By: ms | | | | | | |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|-------|-----------|--|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier | |
| Benzene* | <0.050 | 0.050 | 10/09/2018 | ND | 2.12 | 106 | 2.00 | 0.321 | | |
| Toluene* | <0.050 | 0.050 | 10/09/2018 | ND | 1.97 | 98.7 | 2.00 | 0.155 | | |
| Ethylbenzene* | <0.050 | 0.050 | 10/09/2018 | ND | 1.96 | 98.2 | 2.00 | 0.276 | | |
| Total Xylenes* | <0.150 | 0.150 | 10/09/2018 | ND | 5.89 | 98.2 | 6.00 | 0.482 | | |
| Total BTEX | <0.300 | 0.300 | 10/09/2018 | ND | | | | | | |

Surrogate: 4-Bromofluorobenzene (PID) 94.5 % 69.8-142

| Chloride, SM4500Cl-B | | mg/kg | | Analyzed By: AC | | | | | | |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|--|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier | |
| Chloride | 384 | 16.0 | 10/09/2018 | ND | 448 | 112 | 400 | 3.64 | | |

| TPH 8015M | | mg/kg | | Analyzed By: MS | | | | | |
|------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|-------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| GRO C6-C10* | <10.0 | 10.0 | 10/09/2018 | ND | 169 | 84.7 | 200 | 0.970 | |
| DRO >C10-C28* | <10.0 | 10.0 | 10/09/2018 | ND | 172 | 85.8 | 200 | 2.75 | |
| EXT DRO >C28-C36 | <10.0 | 10.0 | 10/09/2018 | ND | | | | | |

Surrogate: 1-Chlorooctane 89.5 % 41-142

Surrogate: 1-Chlorooctadecane 86.1 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 10/08/2018
 Reported: 10/09/2018
 Project Name: CABO BLANCO STATE #001H
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 10/03/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: 4.5'/2.5' (H802853-14)

| BTEX 8021B | | mg/kg | | Analyzed By: ms | | | | | | |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|-------|-----------|--|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier | |
| Benzene* | <0.050 | 0.050 | 10/09/2018 | ND | 2.12 | 106 | 2.00 | 0.321 | | |
| Toluene* | <0.050 | 0.050 | 10/09/2018 | ND | 1.97 | 98.7 | 2.00 | 0.155 | | |
| Ethylbenzene* | <0.050 | 0.050 | 10/09/2018 | ND | 1.96 | 98.2 | 2.00 | 0.276 | | |
| Total Xylenes* | <0.150 | 0.150 | 10/09/2018 | ND | 5.89 | 98.2 | 6.00 | 0.482 | | |
| Total BTEX | <0.300 | 0.300 | 10/09/2018 | ND | | | | | | |

Surrogate: 4-Bromofluorobenzene (PID) 95.4 % 69.8-142

| Chloride, SM4500CI-B | | mg/kg | | Analyzed By: AC | | | | | | |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|--|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier | |
| Chloride | 32.0 | 16.0 | 10/09/2018 | ND | 448 | 112 | 400 | 3.64 | | |

| TPH 8015M | | mg/kg | | Analyzed By: MS | | | | | |
|------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|-------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| GRO C6-C10* | <10.0 | 10.0 | 10/09/2018 | ND | 169 | 84.7 | 200 | 0.970 | |
| DRO >C10-C28* | <10.0 | 10.0 | 10/09/2018 | ND | 172 | 85.8 | 200 | 2.75 | |
| EXT DRO >C28-C36 | <10.0 | 10.0 | 10/09/2018 | ND | | | | | |

Surrogate: 1-Chlorooctane 96.5 % 41-142

Surrogate: 1-Chlorooctadecane 92.8 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 10/08/2018
 Reported: 10/09/2018
 Project Name: CABO BLANCO STATE #001H
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 10/03/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: 2.5'/1' (H802853-15)

| BTEx 8021B | | mg/kg | | Analyzed By: ms | | | | | |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|-------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| Benzene* | <0.050 | 0.050 | 10/09/2018 | ND | 2.12 | 106 | 2.00 | 0.321 | |
| Toluene* | <0.050 | 0.050 | 10/09/2018 | ND | 1.97 | 98.7 | 2.00 | 0.155 | |
| Ethylbenzene* | <0.050 | 0.050 | 10/09/2018 | ND | 1.96 | 98.2 | 2.00 | 0.276 | |
| Total Xylenes* | <0.150 | 0.150 | 10/09/2018 | ND | 5.89 | 98.2 | 6.00 | 0.482 | |
| Total BTEX | <0.300 | 0.300 | 10/09/2018 | ND | | | | | |

Surrogate: 4-Bromofluorobenzene (PID) 96.2 % 69.8-142

| Chloride, SM4500Cl-B | | mg/kg | | Analyzed By: AC | | | | | | |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|--|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier | |
| Chloride | 64.0 | 16.0 | 10/09/2018 | ND | 448 | 112 | 400 | 3.64 | | |

| TPH 8015M | | mg/kg | | Analyzed By: MS | | | | | |
|------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|-------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| GRO C6-C10* | <10.0 | 10.0 | 10/09/2018 | ND | 169 | 84.7 | 200 | 0.970 | |
| DRO >C10-C28* | <10.0 | 10.0 | 10/09/2018 | ND | 172 | 85.8 | 200 | 2.75 | |
| EXT DRO >C28-C36 | <10.0 | 10.0 | 10/09/2018 | ND | | | | | |

Surrogate: 1-Chlorooctane 93.4 % 41-142

Surrogate: 1-Chlorooctadecane 89.4 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

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Notes and Definitions

| | |
|-----|--|
| ND | Analyte NOT DETECTED at or above the reporting limit |
| RPD | Relative Percent Difference |
| ** | Samples not received at proper temperature of 6°C or below. |
| *** | Insufficient time to reach temperature. |
| - | Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report |

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A handwritten signature in cursive script, appearing to read "Celey D. Keene", written in black ink.

Celey D. Keene, Lab Director/Quality Manager

Page 18 of 19



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

| | | | | | | | | | | | | | | | | | | | |
|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Company Name: COG Operating LLC Project Manager: Dakota Neel Address: 2208 West Main City: Artesia State: NM Zip: 88210 Phone #: (575) 748-6930 Fax #: Project #: Project Owner: Project Name: Cabo Blanco State #001H Project Location: Sampler Name: Dakota Neel | | | | | | | | | | P.O. #: Company: COG Operating LLC Attn: Robert McNeill Address: 600 W Illinois City: Midland State: TX Zip: 79701 Phone #: (432) 221-0388 Fax #: | | | | | | | | | |
| Lab I.D. | | | | | | | | | | Sample I.D. | | | | | | | | | |
| FOR LAB USE ONLY | | | | | | | | | | (G)RAB OR (C)OMP. | | | | | | | | | |
| # CONTAINERS | | | | | | | | | | MATRIX | | | | | | | | | |
| GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER : | | | | | | | | | | PRESERV. ICE / COOL OTHER : | | | | | | | | | |
| DATE | | | | | | | | | | TIME | | | | | | | | | |
| BTM-SP1 | | | | | | | | | | BTM-SP1 | | | | | | | | | |
| BTM-SP2 | | | | | | | | | | BTM-SP2 | | | | | | | | | |
| BTM-SP3 | | | | | | | | | | BTM-SP3 | | | | | | | | | |
| BTM-SP4 | | | | | | | | | | BTM-SP4 | | | | | | | | | |
| BTM-SP5 | | | | | | | | | | BTM-SP5 | | | | | | | | | |
| BTM-SP6 | | | | | | | | | | BTM-SP6 | | | | | | | | | |
| BTM-SP7 | | | | | | | | | | BTM-SP7 | | | | | | | | | |
| BTM-SP8 | | | | | | | | | | BTM-SP8 | | | | | | | | | |
| BTM-SP9 | | | | | | | | | | BTM-SP9 | | | | | | | | | |
| BTM-SP10 | | | | | | | | | | BTM-SP10 | | | | | | | | | |
| DATE | | | | | | | | | | TIME | | | | | | | | | |
| 10/3/18 | | | | | | | | | | 1:00 PM | | | | | | | | | |
| 10/3/18 | | | | | | | | | | 1:05 PM | | | | | | | | | |
| 10/3/18 | | | | | | | | | | 1:10 PM | | | | | | | | | |
| 10/3/18 | | | | | | | | | | 1:15 PM | | | | | | | | | |
| 10/3/18 | | | | | | | | | | 1:20 PM | | | | | | | | | |
| 10/3/18 | | | | | | | | | | 1:25 PM | | | | | | | | | |
| 10/3/18 | | | | | | | | | | 1:30 PM | | | | | | | | | |
| 10/3/18 | | | | | | | | | | 1:35 PM | | | | | | | | | |
| 10/3/18 | | | | | | | | | | 1:40 PM | | | | | | | | | |
| 10/3/18 | | | | | | | | | | 1:45 PM | | | | | | | | | |
| BTEX | | | | | | | | | | TPH | | | | | | | | | |
| Chloride | | | | | | | | | | Chloride | | | | | | | | | |
| ADD'L Phone # | | | | | | | | | | ADD'L Fax # | | | | | | | | | |
| Phone Result: | | | | | | | | | | Fax Result: | | | | | | | | | |
| Yes No | | | | | | | | | | Yes No | | | | | | | | | |
| REMARKS: | | | | | | | | | | REMARKS: | | | | | | | | | |

Page 19 of 19



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

20F2

[illegible]

Analytical Report 601707

for
Tetra Tech- Midland

Project Manager: Clair Gonzales

COG-Cabo Blanco State 1H

212C-MD-01419

11-OCT-18

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-18-27), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-13)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-17)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)

Xenco-Atlanta (LELAP Lab ID #04176)

Xenco-Tampa: Florida (E87429)

Xenco-Lakeland: Florida (E84098)



11-OCT-18

Project Manager: **Clair Gonzales**

Tetra Tech- Midland

901 West Wall ST

Midland, TX 79701

Reference: XENCO Report No(s): **601707**

COG-Cabo Blanco State 1H

Project Address: Lea Co, NM

Clair Gonzales:

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) 601707. 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. 601707 will be filed for 45 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 'Jessica Kramer'.

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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



Sample Cross Reference 601707

Tetra Tech- Midland, Midland, TX

COG-Cabo Blanco State 1H

| Sample Id | Matrix | Date Collected | Sample Depth | Lab Sample Id |
|---------------|--------|----------------|--------------|---------------|
| Side Wall #1 | S | 10-08-18 00:00 | | 601707-001 |
| Side Wall #2 | S | 10-08-18 00:00 | | 601707-002 |
| Side Wall #3 | S | 10-08-18 00:00 | | 601707-003 |
| Side Wall #4 | S | 10-08-18 00:00 | | 601707-004 |
| Side Wall #5 | S | 10-08-18 00:00 | | 601707-005 |
| Side Wall #6 | S | 10-08-18 00:00 | | 601707-006 |
| Side Wall #7 | S | 10-08-18 00:00 | | 601707-007 |
| Side Wall #8 | S | 10-08-18 00:00 | | 601707-008 |
| Side Wall #9 | S | 10-08-18 00:00 | | 601707-009 |
| Side Wall #10 | S | 10-08-18 00:00 | | 601707-010 |
| Side Wall #11 | S | 10-08-18 00:00 | | 601707-011 |
| Side Wall #12 | S | 10-08-18 00:00 | | 601707-012 |
| Side Wall #13 | S | 10-08-18 00:00 | | 601707-013 |
| Side Wall #14 | S | 10-08-18 00:00 | | 601707-014 |
| Side Wall #15 | S | 10-08-18 00:00 | | 601707-015 |
| Side Wall #16 | S | 10-08-18 00:00 | | 601707-016 |
| Side Wall #17 | S | 10-08-18 00:00 | | 601707-017 |
| Side Wall #18 | S | 10-08-18 00:00 | | 601707-018 |
| Side Wall #19 | S | 10-08-18 00:00 | | 601707-019 |
| Side Wall #20 | S | 10-08-18 00:00 | | 601707-020 |
| Side Wall #21 | S | 10-08-18 00:00 | | 601707-021 |
| Side Wall #22 | S | 10-08-18 00:00 | | 601707-022 |
| Side Wall #23 | S | 10-08-18 00:00 | | 601707-023 |
| Side Wall #24 | S | 10-08-18 00:00 | | 601707-024 |
| Side Wall #25 | S | 10-08-18 00:00 | | 601707-025 |
| Side Wall #26 | S | 10-08-18 00:00 | | 601707-026 |
| Side Wall #27 | S | 10-08-18 00:00 | | 601707-027 |
| Side Wall #28 | S | 10-08-18 00:00 | | 601707-028 |
| Side Wall #29 | S | 10-08-18 00:00 | | 601707-029 |
| Side Wall #30 | S | 10-08-18 00:00 | | 601707-030 |
| Side Wall #31 | S | 10-08-18 00:00 | | 601707-031 |
| Side Wall #32 | S | 10-08-18 00:00 | | 601707-032 |
| Side Wall #33 | S | 10-08-18 00:00 | | 601707-033 |

**CASE NARRATIVE****Client Name: Tetra Tech- Midland****Project Name: COG-Cabo Blanco State 1H**

Project ID: 212C-MD-01419
Work Order Number(s): 601707

Report Date: 11-OCT-18
Date Received: 10/09/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3065905 Chloride by EPA 300

Lab Sample ID 601707-031 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: 601707-021, -022, -023, -024, -025, -026, -027, -028, -029, -030, -031, -032, -033.

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

Batch: LBA-3066101 BTEX by EPA 8021B

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

Batch: LBA-3066105 BTEX by EPA 8021B

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

Batch: LBA-3066135 BTEX by EPA 8021B

Lab Sample ID 601707-023 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Toluene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Benzene, Ethylbenzene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 601707-023, -025, -027, -029, -031, -033.

The Laboratory Control Sample for Toluene, Benzene, m,p-Xylenes, Ethylbenzene, o-Xylene is within laboratory Control Limits, therefore the data was accepted.

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



Certificate of Analysis Summary 601707

Tetra Tech- Midland, Midland, TX

Project Name: COG-Cabo Blanco State 1H



Project Id: 212C-MD-01419
Contact: Clair Gonzales
Project Location: Lea Co, NM

Date Received in Lab: Tue Oct-09-18 09:21 am
Report Date: 11-OCT-18
Project Manager: Jessica Kramer

| <i>Analysis Requested</i> | <i>Lab Id:</i> | 601707-001 | 601707-002 | 601707-003 | 601707-004 | 601707-005 | 601707-006 |
|------------------------------------|-------------------|------------------|-----------------|------------------|-----------------|------------------|-----------------|
| | <i>Field Id:</i> | Side Wall #1 | Side Wall #2 | Side Wall #3 | Side Wall #4 | Side Wall #5 | Side Wall #6 |
| | <i>Depth:</i> | | | | | | |
| | <i>Matrix:</i> | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| | <i>Sampled:</i> | Oct-08-18 00:00 | Oct-08-18 00:00 | Oct-08-18 00:00 | Oct-08-18 00:00 | Oct-08-18 00:00 | Oct-08-18 00:00 |
| BTEX by EPA 8021B | <i>Extracted:</i> | Oct-10-18 12:00 | | Oct-10-18 12:00 | | Oct-10-18 17:00 | |
| | <i>Analyzed:</i> | Oct-10-18 16:12 | | Oct-10-18 16:32 | | Oct-11-18 07:59 | |
| | <i>Units/RL:</i> | mg/kg RL | | mg/kg RL | | mg/kg RL | |
| Benzene | | <0.00199 0.00199 | | <0.00200 0.00200 | | <0.00200 0.00200 | |
| Toluene | | <0.00199 0.00199 | | <0.00200 0.00200 | | <0.00200 0.00200 | |
| Ethylbenzene | | <0.00199 0.00199 | | <0.00200 0.00200 | | <0.00200 0.00200 | |
| m,p-Xylenes | | <0.00398 0.00398 | | <0.00401 0.00401 | | <0.00399 0.00399 | |
| o-Xylene | | <0.00199 0.00199 | | <0.00200 0.00200 | | <0.00200 0.00200 | |
| Total Xylenes | | <0.00199 0.00199 | | <0.00200 0.00200 | | <0.00200 0.00200 | |
| Total BTEX | | <0.00199 0.00199 | | <0.00200 0.00200 | | <0.00200 0.00200 | |
| Chloride by EPA 300 | <i>Extracted:</i> | Oct-09-18 11:00 | Oct-09-18 11:00 | Oct-09-18 11:00 | Oct-09-18 11:00 | Oct-09-18 11:00 | Oct-09-18 11:00 |
| | <i>Analyzed:</i> | Oct-09-18 16:14 | Oct-09-18 16:31 | Oct-09-18 16:37 | Oct-09-18 16:43 | Oct-09-18 16:48 | Oct-09-18 17:05 |
| | <i>Units/RL:</i> | mg/kg RL | mg/kg RL | mg/kg RL | mg/kg RL | mg/kg RL | mg/kg RL |
| Chloride | | <4.98 4.98 | <4.95 4.95 | <4.98 4.98 | <5.00 5.00 | <4.95 4.95 | <5.00 5.00 |
| TPH by SW8015 Mod | <i>Extracted:</i> | Oct-10-18 13:00 | | Oct-10-18 13:00 | | Oct-10-18 13:00 | |
| | <i>Analyzed:</i> | Oct-10-18 20:40 | | Oct-10-18 21:36 | | Oct-10-18 21:55 | |
| | <i>Units/RL:</i> | 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 | |
| Diesel Range Organics (DRO) | | <15.0 15.0 | | <14.9 14.9 | | <15.0 15.0 | |
| Motor Oil Range Hydrocarbons (MRO) | | <15.0 15.0 | | <14.9 14.9 | | <15.0 15.0 | |
| Total TPH | | <15.0 15.0 | | <14.9 14.9 | | <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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Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 601707

Tetra Tech- Midland, Midland, TX

Project Name: COG-Cabo Blanco State 1H



Project Id: 212C-MD-01419
Contact: Clair Gonzales
Project Location: Lea Co, NM

Date Received in Lab: Tue Oct-09-18 09:21 am
Report Date: 11-OCT-18
Project Manager: Jessica Kramer

| <i>Analysis Requested</i> | <i>Lab Id:</i> | 601707-007 | 601707-008 | 601707-009 | 601707-010 | 601707-011 | 601707-012 |
|------------------------------------|-------------------|------------------|-----------------|------------------|-----------------|------------------|-----------------|
| | <i>Field Id:</i> | Side Wall #7 | Side Wall #8 | Side Wall #9 | Side Wall #10 | Side Wall #11 | Side Wall #12 |
| | <i>Depth:</i> | | | | | | |
| | <i>Matrix:</i> | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| | <i>Sampled:</i> | Oct-08-18 00:00 | Oct-08-18 00:00 | Oct-08-18 00:00 | Oct-08-18 00:00 | Oct-08-18 00:00 | Oct-08-18 00:00 |
| BTEX by EPA 8021B | <i>Extracted:</i> | Oct-10-18 17:00 | | Oct-10-18 17:00 | | Oct-10-18 17:00 | |
| | <i>Analyzed:</i> | Oct-11-18 08:19 | | Oct-11-18 09:22 | | Oct-11-18 09:44 | |
| | <i>Units/RL:</i> | mg/kg RL | | mg/kg RL | | mg/kg RL | |
| Benzene | | <0.00199 0.00199 | | <0.00198 0.00198 | | <0.00200 0.00200 | |
| Toluene | | <0.00199 0.00199 | | <0.00198 0.00198 | | <0.00200 0.00200 | |
| Ethylbenzene | | <0.00199 0.00199 | | <0.00198 0.00198 | | <0.00200 0.00200 | |
| m,p-Xylenes | | <0.00398 0.00398 | | <0.00396 0.00396 | | <0.00401 0.00401 | |
| o-Xylene | | <0.00199 0.00199 | | <0.00198 0.00198 | | <0.00200 0.00200 | |
| Total Xylenes | | <0.00199 0.00199 | | <0.00198 0.00198 | | <0.00200 0.00200 | |
| Total BTEX | | <0.00199 0.00199 | | <0.00198 0.00198 | | <0.00200 0.00200 | |
| Chloride by EPA 300 | <i>Extracted:</i> | Oct-09-18 11:00 | Oct-09-18 11:00 | Oct-09-18 11:00 | Oct-09-18 11:00 | Oct-09-18 11:00 | Oct-09-18 11:00 |
| | <i>Analyzed:</i> | Oct-09-18 17:11 | Oct-09-18 17:17 | Oct-09-18 17:22 | Oct-09-18 17:35 | Oct-09-18 17:40 | Oct-09-18 17:57 |
| | <i>Units/RL:</i> | mg/kg RL | mg/kg RL | mg/kg RL | mg/kg RL | mg/kg RL | mg/kg RL |
| Chloride | | <5.00 5.00 | <5.00 5.00 | <4.95 4.95 | <4.98 4.98 | <4.99 4.99 | 835 4.95 |
| TPH by SW8015 Mod | <i>Extracted:</i> | Oct-10-18 13:00 | | Oct-10-18 13:00 | | Oct-10-18 13:00 | |
| | <i>Analyzed:</i> | Oct-10-18 22:13 | | Oct-10-18 22:32 | | Oct-10-18 22:50 | |
| | <i>Units/RL:</i> | mg/kg RL | | mg/kg RL | | mg/kg RL | |
| Gasoline Range Hydrocarbons (GRO) | | 15.3 15.0 | | 15.6 15.0 | | 15.6 15.0 | |
| Diesel Range Organics (DRO) | | <15.0 15.0 | | <15.0 15.0 | | <15.0 15.0 | |
| Motor Oil Range Hydrocarbons (MRO) | | <15.0 15.0 | | <15.0 15.0 | | <15.0 15.0 | |
| Total TPH | | 15.3 15.0 | | 15.6 15.0 | | 15.6 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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Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 601707

Tetra Tech- Midland, Midland, TX

Project Name: COG-Cabo Blanco State 1H



Project Id: 212C-MD-01419
Contact: Clair Gonzales
Project Location: Lea Co, NM

Date Received in Lab: Tue Oct-09-18 09:21 am
Report Date: 11-OCT-18
Project Manager: Jessica Kramer

| <i>Analysis Requested</i> | <i>Lab Id:</i> | 601707-013 | 601707-014 | 601707-015 | 601707-016 | 601707-017 | 601707-018 |
|------------------------------------|-------------------|------------------|-----------------|------------------|-----------------|------------------|-----------------|
| | <i>Field Id:</i> | Side Wall #13 | Side Wall #14 | Side Wall #15 | Side Wall #16 | Side Wall #17 | Side Wall #18 |
| | <i>Depth:</i> | | | | | | |
| | <i>Matrix:</i> | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| | <i>Sampled:</i> | Oct-08-18 00:00 | Oct-08-18 00:00 | Oct-08-18 00:00 | Oct-08-18 00:00 | Oct-08-18 00:00 | Oct-08-18 00:00 |
| BTEX by EPA 8021B | <i>Extracted:</i> | Oct-10-18 17:00 | | Oct-10-18 17:00 | | Oct-10-18 17:00 | |
| | <i>Analyzed:</i> | Oct-11-18 10:06 | | Oct-11-18 10:27 | | Oct-11-18 10:48 | |
| | <i>Units/RL:</i> | mg/kg RL | | mg/kg RL | | mg/kg RL | |
| Benzene | | <0.00199 0.00199 | | <0.00202 0.00202 | | <0.00202 0.00202 | |
| Toluene | | <0.00199 0.00199 | | <0.00202 0.00202 | | <0.00202 0.00202 | |
| Ethylbenzene | | <0.00199 0.00199 | | <0.00202 0.00202 | | <0.00202 0.00202 | |
| m,p-Xylenes | | <0.00398 0.00398 | | <0.00403 0.00403 | | <0.00404 0.00404 | |
| o-Xylene | | <0.00199 0.00199 | | <0.00202 0.00202 | | <0.00202 0.00202 | |
| Total Xylenes | | <0.00199 0.00199 | | <0.00202 0.00202 | | <0.00202 0.00202 | |
| Total BTEX | | <0.00199 0.00199 | | <0.00202 0.00202 | | <0.00202 0.00202 | |
| Chloride by EPA 300 | <i>Extracted:</i> | Oct-09-18 11:00 | Oct-09-18 11:00 | Oct-09-18 11:00 | Oct-09-18 11:00 | Oct-09-18 11:00 | Oct-09-18 11:00 |
| | <i>Analyzed:</i> | Oct-09-18 18:03 | Oct-09-18 18:20 | Oct-09-18 18:26 | Oct-09-18 18:31 | Oct-09-18 18:37 | Oct-09-18 18:43 |
| | <i>Units/RL:</i> | mg/kg RL | mg/kg RL | mg/kg RL | mg/kg RL | mg/kg RL | mg/kg RL |
| Chloride | | <5.00 5.00 | <5.00 5.00 | <4.96 4.96 | <4.96 4.96 | <5.00 5.00 | 22.7 5.00 |
| TPH by SW8015 Mod | <i>Extracted:</i> | Oct-10-18 13:00 | | Oct-10-18 13:00 | | Oct-10-18 13:00 | |
| | <i>Analyzed:</i> | Oct-10-18 23:09 | | Oct-10-18 23:28 | | Oct-10-18 23:46 | |
| | <i>Units/RL:</i> | mg/kg RL | | mg/kg RL | | mg/kg RL | |
| Gasoline Range Hydrocarbons (GRO) | | 16.0 15.0 | | 18.3 15.0 | | 15.6 15.0 | |
| Diesel Range Organics (DRO) | | <15.0 15.0 | | <15.0 15.0 | | <15.0 15.0 | |
| Motor Oil Range Hydrocarbons (MRO) | | <15.0 15.0 | | <15.0 15.0 | | <15.0 15.0 | |
| Total TPH | | 16.0 15.0 | | 18.3 15.0 | | 15.6 15.0 | |

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

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 601707

Tetra Tech- Midland, Midland, TX

Project Name: COG-Cabo Blanco State 1H



Project Id: 212C-MD-01419
Contact: Clair Gonzales
Project Location: Lea Co, NM

Date Received in Lab: Tue Oct-09-18 09:21 am
Report Date: 11-OCT-18
Project Manager: Jessica Kramer

| <i>Analysis Requested</i> | <i>Lab Id:</i> | 601707-019 | 601707-020 | 601707-021 | 601707-022 | 601707-023 | 601707-024 |
|------------------------------------|-------------------|------------------|-----------------|------------------|-----------------|------------------|-----------------|
| | <i>Field Id:</i> | Side Wall #19 | Side Wall #20 | Side Wall #21 | Side Wall #22 | Side Wall #23 | Side Wall #24 |
| | <i>Depth:</i> | | | | | | |
| | <i>Matrix:</i> | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| | <i>Sampled:</i> | Oct-08-18 00:00 | Oct-08-18 00:00 | Oct-08-18 00:00 | Oct-08-18 00:00 | Oct-08-18 00:00 | Oct-08-18 00:00 |
| BTEX by EPA 8021B | <i>Extracted:</i> | Oct-10-18 17:00 | | Oct-10-18 17:00 | | Oct-11-18 11:00 | |
| | <i>Analyzed:</i> | Oct-11-18 11:09 | | Oct-11-18 11:31 | | Oct-11-18 15:27 | |
| | <i>Units/RL:</i> | mg/kg RL | | mg/kg RL | | mg/kg RL | |
| Benzene | | <0.00199 0.00199 | | <0.00198 0.00198 | | <0.00199 0.00199 | |
| Toluene | | <0.00199 0.00199 | | <0.00198 0.00198 | | <0.00199 0.00199 | |
| Ethylbenzene | | <0.00199 0.00199 | | <0.00198 0.00198 | | <0.00199 0.00199 | |
| m,p-Xylenes | | <0.00398 0.00398 | | <0.00396 0.00396 | | <0.00398 0.00398 | |
| o-Xylene | | <0.00199 0.00199 | | <0.00198 0.00198 | | <0.00199 0.00199 | |
| Total Xylenes | | <0.00199 0.00199 | | <0.00198 0.00198 | | <0.00199 0.00199 | |
| Total BTEX | | <0.00199 0.00199 | | <0.00198 0.00198 | | <0.00199 0.00199 | |
| Chloride by EPA 300 | <i>Extracted:</i> | Oct-09-18 11:00 | Oct-09-18 11:00 | Oct-09-18 15:30 | Oct-09-18 15:30 | Oct-09-18 15:30 | Oct-09-18 15:30 |
| | <i>Analyzed:</i> | Oct-09-18 18:48 | Oct-09-18 18:54 | Oct-09-18 22:36 | Oct-09-18 22:53 | Oct-09-18 22:58 | Oct-09-18 23:04 |
| | <i>Units/RL:</i> | mg/kg RL | mg/kg RL | mg/kg RL | mg/kg RL | mg/kg RL | mg/kg RL |
| Chloride | | <5.00 5.00 | 15.1 5.00 | <4.98 4.98 | <5.00 5.00 | 184 5.00 | 13.1 5.00 |
| TPH by SW8015 Mod | <i>Extracted:</i> | Oct-10-18 13:00 | | Oct-10-18 13:00 | | Oct-10-18 13:00 | |
| | <i>Analyzed:</i> | Oct-11-18 00:05 | | Oct-11-18 01:01 | | Oct-11-18 01:20 | |
| | <i>Units/RL:</i> | mg/kg RL | | mg/kg RL | | mg/kg RL | |
| Gasoline Range Hydrocarbons (GRO) | | 15.4 15.0 | | 16.1 15.0 | | 15.4 15.0 | |
| Diesel Range Organics (DRO) | | <15.0 15.0 | | <15.0 15.0 | | <15.0 15.0 | |
| Motor Oil Range Hydrocarbons (MRO) | | <15.0 15.0 | | <15.0 15.0 | | <15.0 15.0 | |
| Total TPH | | 15.4 15.0 | | 16.1 15.0 | | 15.4 15.0 | |

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

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 601707

Tetra Tech- Midland, Midland, TX

Project Name: COG-Cabo Blanco State 1H



Project Id: 212C-MD-01419
Contact: Clair Gonzales
Project Location: Lea Co, NM

Date Received in Lab: Tue Oct-09-18 09:21 am
Report Date: 11-OCT-18
Project Manager: Jessica Kramer

| <i>Analysis Requested</i> | <i>Lab Id:</i> | 601707-025 | 601707-026 | 601707-027 | 601707-028 | 601707-029 | 601707-030 |
|------------------------------------|-------------------|------------------|-----------------|------------------|-----------------|------------------|-----------------|
| | <i>Field Id:</i> | Side Wall #25 | Side Wall #26 | Side Wall #27 | Side Wall #28 | Side Wall #29 | Side Wall #30 |
| | <i>Depth:</i> | | | | | | |
| | <i>Matrix:</i> | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| | <i>Sampled:</i> | Oct-08-18 00:00 | Oct-08-18 00:00 | Oct-08-18 00:00 | Oct-08-18 00:00 | Oct-08-18 00:00 | Oct-08-18 00:00 |
| BTEX by EPA 8021B | <i>Extracted:</i> | Oct-11-18 11:00 | | Oct-11-18 11:00 | | Oct-11-18 11:00 | |
| | <i>Analyzed:</i> | Oct-11-18 15:49 | | Oct-11-18 16:11 | | Oct-11-18 16:33 | |
| | <i>Units/RL:</i> | mg/kg RL | | mg/kg RL | | mg/kg RL | |
| Benzene | | <0.00200 0.00200 | | <0.00201 0.00201 | | <0.00202 0.00202 | |
| Toluene | | <0.00200 0.00200 | | <0.00201 0.00201 | | <0.00202 0.00202 | |
| Ethylbenzene | | <0.00200 0.00200 | | <0.00201 0.00201 | | <0.00202 0.00202 | |
| m,p-Xylenes | | <0.00401 0.00401 | | <0.00402 0.00402 | | <0.00404 0.00404 | |
| o-Xylene | | <0.00200 0.00200 | | <0.00201 0.00201 | | <0.00202 0.00202 | |
| Total Xylenes | | <0.00200 0.00200 | | <0.00201 0.00201 | | <0.00202 0.00202 | |
| Total BTEX | | <0.00200 0.00200 | | <0.00201 0.00201 | | <0.00202 0.00202 | |
| Chloride by EPA 300 | <i>Extracted:</i> | Oct-09-18 15:30 | Oct-09-18 15:30 | Oct-09-18 15:30 | Oct-09-18 15:30 | Oct-09-18 15:30 | Oct-09-18 15:30 |
| | <i>Analyzed:</i> | Oct-09-18 23:10 | Oct-09-18 23:27 | Oct-09-18 23:32 | Oct-09-18 23:38 | Oct-09-18 23:44 | Oct-09-18 23:49 |
| | <i>Units/RL:</i> | mg/kg RL | mg/kg RL | mg/kg RL | mg/kg RL | mg/kg RL | mg/kg RL |
| Chloride | | <5.00 5.00 | <5.00 5.00 | <4.99 4.99 | <4.99 4.99 | <4.99 4.99 | <5.00 5.00 |
| TPH by SW8015 Mod | <i>Extracted:</i> | Oct-10-18 13:00 | | Oct-10-18 13:00 | | Oct-10-18 13:00 | |
| | <i>Analyzed:</i> | Oct-11-18 01:39 | | Oct-11-18 01:57 | | Oct-11-18 02:16 | |
| | <i>Units/RL:</i> | mg/kg RL | | mg/kg RL | | mg/kg RL | |
| Gasoline Range Hydrocarbons (GRO) | | <14.9 14.9 | | <15.0 15.0 | | 15.6 14.9 | |
| Diesel Range Organics (DRO) | | <14.9 14.9 | | <15.0 15.0 | | <14.9 14.9 | |
| Motor Oil Range Hydrocarbons (MRO) | | <14.9 14.9 | | <15.0 15.0 | | <14.9 14.9 | |
| Total TPH | | <14.9 14.9 | | <15.0 15.0 | | 15.6 14.9 | |

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Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 601707

Tetra Tech- Midland, Midland, TX

Project Name: COG-Cabo Blanco State 1H



Project Id: 212C-MD-01419
Contact: Clair Gonzales
Project Location: Lea Co, NM

Date Received in Lab: Tue Oct-09-18 09:21 am
Report Date: 11-OCT-18
Project Manager: Jessica Kramer

| <i>Analysis Requested</i> | <i>Lab Id:</i> | 601707-031 | 601707-032 | 601707-033 | | | |
|------------------------------------|-------------------|------------------|-----------------|------------------|--|--|--|
| | <i>Field Id:</i> | Side Wall #31 | Side Wall #32 | Side Wall #33 | | | |
| | <i>Depth:</i> | | | | | | |
| | <i>Matrix:</i> | SOIL | SOIL | SOIL | | | |
| | <i>Sampled:</i> | Oct-08-18 00:00 | Oct-08-18 00:00 | Oct-08-18 00:00 | | | |
| BTEX by EPA 8021B | <i>Extracted:</i> | Oct-11-18 11:00 | | Oct-11-18 11:00 | | | |
| | <i>Analyzed:</i> | Oct-11-18 16:55 | | Oct-11-18 17:16 | | | |
| | <i>Units/RL:</i> | mg/kg RL | | mg/kg RL | | | |
| Benzene | | <0.00200 0.00200 | | <0.00198 0.00198 | | | |
| Toluene | | <0.00200 0.00200 | | <0.00198 0.00198 | | | |
| Ethylbenzene | | <0.00200 0.00200 | | <0.00198 0.00198 | | | |
| m,p-Xylenes | | <0.00399 0.00399 | | <0.00397 0.00397 | | | |
| o-Xylene | | <0.00200 0.00200 | | <0.00198 0.00198 | | | |
| Total Xylenes | | <0.00200 0.00200 | | <0.00198 0.00198 | | | |
| Total BTEX | | <0.00200 0.00200 | | <0.00198 0.00198 | | | |
| Chloride by EPA 300 | <i>Extracted:</i> | Oct-09-18 15:30 | Oct-09-18 15:30 | Oct-09-18 15:30 | | | |
| | <i>Analyzed:</i> | Oct-09-18 23:55 | Oct-10-18 00:12 | Oct-10-18 00:18 | | | |
| | <i>Units/RL:</i> | mg/kg RL | mg/kg RL | mg/kg RL | | | |
| Chloride | | <4.97 4.97 | 26.3 4.96 | <4.99 4.99 | | | |
| TPH by SW8015 Mod | <i>Extracted:</i> | Oct-10-18 13:00 | | Oct-10-18 13:00 | | | |
| | <i>Analyzed:</i> | Oct-11-18 02:35 | | Oct-11-18 02:54 | | | |
| | <i>Units/RL:</i> | mg/kg RL | | mg/kg RL | | | |
| Gasoline Range Hydrocarbons (GRO) | | <15.0 15.0 | | <15.0 15.0 | | | |
| Diesel Range Organics (DRO) | | <15.0 15.0 | | <15.0 15.0 | | | |
| Motor Oil Range Hydrocarbons (MRO) | | <15.0 15.0 | | <15.0 15.0 | | | |
| Total TPH | | <15.0 15.0 | | <15.0 15.0 | | | |

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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

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

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



Form 2 - Surrogate Recoveries

Project Name: COG-Cabo Blanco State 1H

Work Orders : 601707,

Project ID: 212C-MD-01419

Lab Batch #: 3066101

Sample: 601707-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/10/18 16:12

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0307 | 0.0300 | 102 | 70-130 | |
| 4-Bromofluorobenzene | 0.0275 | 0.0300 | 92 | 70-130 | |

Lab Batch #: 3066101

Sample: 601707-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/10/18 16:32

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0311 | 0.0300 | 104 | 70-130 | |
| 4-Bromofluorobenzene | 0.0285 | 0.0300 | 95 | 70-130 | |

Lab Batch #: 3066079

Sample: 601707-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/10/18 20:40

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane | 95.4 | 99.8 | 96 | 70-135 | |
| o-Terphenyl | 49.1 | 49.9 | 98 | 70-135 | |

Lab Batch #: 3066079

Sample: 601707-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/10/18 21:36

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane | 92.9 | 99.6 | 93 | 70-135 | |
| o-Terphenyl | 48.3 | 49.8 | 97 | 70-135 | |

Lab Batch #: 3066079

Sample: 601707-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/10/18 21:55

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane | 96.2 | 99.7 | 96 | 70-135 | |
| o-Terphenyl | 49.5 | 49.9 | 99 | 70-135 | |

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: COG-Cabo Blanco State 1H

Work Orders : 601707,

Project ID: 212C-MD-01419

Lab Batch #: 3066079

Sample: 601707-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/10/18 22:13

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane | 96.9 | 99.9 | 97 | 70-135 | |
| o-Terphenyl | 51.0 | 50.0 | 102 | 70-135 | |

Lab Batch #: 3066079

Sample: 601707-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/10/18 22:32

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane | 87.7 | 99.7 | 88 | 70-135 | |
| o-Terphenyl | 44.8 | 49.9 | 90 | 70-135 | |

Lab Batch #: 3066079

Sample: 601707-011 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/10/18 22:50

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane | 93.0 | 99.8 | 93 | 70-135 | |
| o-Terphenyl | 47.6 | 49.9 | 95 | 70-135 | |

Lab Batch #: 3066079

Sample: 601707-013 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/10/18 23:09

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane | 90.5 | 99.7 | 91 | 70-135 | |
| o-Terphenyl | 45.7 | 49.9 | 92 | 70-135 | |

Lab Batch #: 3066079

Sample: 601707-015 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/10/18 23:28

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane | 91.3 | 99.9 | 91 | 70-135 | |
| o-Terphenyl | 42.9 | 50.0 | 86 | 70-135 | |

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: COG-Cabo Blanco State 1H

Work Orders : 601707,

Project ID: 212C-MD-01419

Lab Batch #: 3066079

Sample: 601707-017 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/10/18 23:46

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane | 95.1 | 100 | 95 | 70-135 | |
| o-Terphenyl | 48.8 | 50.0 | 98 | 70-135 | |

Lab Batch #: 3066079

Sample: 601707-019 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/11/18 00:05

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane | 92.2 | 99.7 | 92 | 70-135 | |
| o-Terphenyl | 47.1 | 49.9 | 94 | 70-135 | |

Lab Batch #: 3066079

Sample: 601707-021 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/11/18 01:01

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane | 95.6 | 99.8 | 96 | 70-135 | |
| o-Terphenyl | 48.5 | 49.9 | 97 | 70-135 | |

Lab Batch #: 3066079

Sample: 601707-023 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/11/18 01:20

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane | 93.1 | 99.8 | 93 | 70-135 | |
| o-Terphenyl | 47.7 | 49.9 | 96 | 70-135 | |

Lab Batch #: 3066079

Sample: 601707-025 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/11/18 01:39

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane | 92.1 | 99.6 | 92 | 70-135 | |
| o-Terphenyl | 47.5 | 49.8 | 95 | 70-135 | |

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: COG-Cabo Blanco State 1H

Work Orders : 601707,

Project ID: 212C-MD-01419

Lab Batch #: 3066079

Sample: 601707-027 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/11/18 01:57

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane | 92.6 | 99.9 | 93 | 70-135 | |
| o-Terphenyl | 47.9 | 50.0 | 96 | 70-135 | |

Lab Batch #: 3066079

Sample: 601707-029 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/11/18 02:16

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane | 97.0 | 99.6 | 97 | 70-135 | |
| o-Terphenyl | 50.1 | 49.8 | 101 | 70-135 | |

Lab Batch #: 3066079

Sample: 601707-031 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/11/18 02:35

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane | 91.0 | 99.7 | 91 | 70-135 | |
| o-Terphenyl | 46.9 | 49.9 | 94 | 70-135 | |

Lab Batch #: 3066079

Sample: 601707-033 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/11/18 02:54

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane | 89.2 | 100 | 89 | 70-135 | |
| o-Terphenyl | 46.3 | 50.0 | 93 | 70-135 | |

Lab Batch #: 3066105

Sample: 601707-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/11/18 07:59

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0336 | 0.0300 | 112 | 70-130 | |
| 4-Bromofluorobenzene | 0.0301 | 0.0300 | 100 | 70-130 | |

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: COG-Cabo Blanco State 1H

Work Orders : 601707,

Project ID: 212C-MD-01419

Lab Batch #: 3066105

Sample: 601707-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/11/18 08:19

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0322 | 0.0300 | 107 | 70-130 | |
| 4-Bromofluorobenzene | 0.0297 | 0.0300 | 99 | 70-130 | |

Lab Batch #: 3066105

Sample: 601707-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/11/18 09:22

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0323 | 0.0300 | 108 | 70-130 | |
| 4-Bromofluorobenzene | 0.0275 | 0.0300 | 92 | 70-130 | |

Lab Batch #: 3066105

Sample: 601707-011 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/11/18 09:44

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0321 | 0.0300 | 107 | 70-130 | |
| 4-Bromofluorobenzene | 0.0298 | 0.0300 | 99 | 70-130 | |

Lab Batch #: 3066105

Sample: 601707-013 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/11/18 10:06

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0326 | 0.0300 | 109 | 70-130 | |
| 4-Bromofluorobenzene | 0.0304 | 0.0300 | 101 | 70-130 | |

Lab Batch #: 3066105

Sample: 601707-015 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/11/18 10:27

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0319 | 0.0300 | 106 | 70-130 | |
| 4-Bromofluorobenzene | 0.0303 | 0.0300 | 101 | 70-130 | |

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: COG-Cabo Blanco State 1H

Work Orders : 601707,

Project ID: 212C-MD-01419

Lab Batch #: 3066105

Sample: 601707-017 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/11/18 10:48

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0322 | 0.0300 | 107 | 70-130 | |
| 4-Bromofluorobenzene | 0.0286 | 0.0300 | 95 | 70-130 | |

Lab Batch #: 3066105

Sample: 601707-019 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/11/18 11:09

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0336 | 0.0300 | 112 | 70-130 | |
| 4-Bromofluorobenzene | 0.0289 | 0.0300 | 96 | 70-130 | |

Lab Batch #: 3066105

Sample: 601707-021 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/11/18 11:31

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0322 | 0.0300 | 107 | 70-130 | |
| 4-Bromofluorobenzene | 0.0292 | 0.0300 | 97 | 70-130 | |

Lab Batch #: 3066135

Sample: 601707-023 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/11/18 15:27

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0319 | 0.0300 | 106 | 70-130 | |
| 4-Bromofluorobenzene | 0.0292 | 0.0300 | 97 | 70-130 | |

Lab Batch #: 3066135

Sample: 601707-025 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/11/18 15:49

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0321 | 0.0300 | 107 | 70-130 | |
| 4-Bromofluorobenzene | 0.0282 | 0.0300 | 94 | 70-130 | |

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: COG-Cabo Blanco State 1H

Work Orders : 601707,

Project ID: 212C-MD-01419

Lab Batch #: 3066135

Sample: 601707-027 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/11/18 16:11

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0299 | 0.0300 | 100 | 70-130 | |
| 4-Bromofluorobenzene | 0.0284 | 0.0300 | 95 | 70-130 | |

Lab Batch #: 3066135

Sample: 601707-029 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/11/18 16:33

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0333 | 0.0300 | 111 | 70-130 | |
| 4-Bromofluorobenzene | 0.0295 | 0.0300 | 98 | 70-130 | |

Lab Batch #: 3066135

Sample: 601707-031 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/11/18 16:55

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0312 | 0.0300 | 104 | 70-130 | |
| 4-Bromofluorobenzene | 0.0307 | 0.0300 | 102 | 70-130 | |

Lab Batch #: 3066135

Sample: 601707-033 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/11/18 17:16

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0322 | 0.0300 | 107 | 70-130 | |
| 4-Bromofluorobenzene | 0.0285 | 0.0300 | 95 | 70-130 | |

Lab Batch #: 3066101

Sample: 7663985-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 10/10/18 15:52

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0304 | 0.0300 | 101 | 70-130 | |
| 4-Bromofluorobenzene | 0.0268 | 0.0300 | 89 | 70-130 | |

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: COG-Cabo Blanco State 1H

Work Orders : 601707,

Project ID: 212C-MD-01419

Lab Batch #: 3066079

Sample: 7663967-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 10/10/18 19:44

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane | 97.0 | 100 | 97 | 70-135 | |
| o-Terphenyl | 51.8 | 50.0 | 104 | 70-135 | |

Lab Batch #: 3066105

Sample: 7663978-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 10/10/18 22:34

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0333 | 0.0300 | 111 | 70-130 | |
| 4-Bromofluorobenzene | 0.0261 | 0.0300 | 87 | 70-130 | |

Lab Batch #: 3066135

Sample: 7664005-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 10/11/18 15:05

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0328 | 0.0300 | 109 | 70-130 | |
| 4-Bromofluorobenzene | 0.0274 | 0.0300 | 91 | 70-130 | |

Lab Batch #: 3066101

Sample: 7663985-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 10/10/18 14:12

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0271 | 0.0300 | 90 | 70-130 | |
| 4-Bromofluorobenzene | 0.0245 | 0.0300 | 82 | 70-130 | |

Lab Batch #: 3066079

Sample: 7663967-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 10/10/18 20:03

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane | 117 | 100 | 117 | 70-135 | |
| o-Terphenyl | 52.0 | 50.0 | 104 | 70-135 | |

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: COG-Cabo Blanco State 1H

Work Orders : 601707,

Project ID: 212C-MD-01419

Lab Batch #: 3066105

Sample: 7663978-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 10/10/18 20:48

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0312 | 0.0300 | 104 | 70-130 | |
| 4-Bromofluorobenzene | 0.0219 | 0.0300 | 73 | 70-130 | |

Lab Batch #: 3066135

Sample: 7664005-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 10/11/18 13:18

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0315 | 0.0300 | 105 | 70-130 | |
| 4-Bromofluorobenzene | 0.0283 | 0.0300 | 94 | 70-130 | |

Lab Batch #: 3066101

Sample: 7663985-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 10/10/18 14:32

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0268 | 0.0300 | 89 | 70-130 | |
| 4-Bromofluorobenzene | 0.0256 | 0.0300 | 85 | 70-130 | |

Lab Batch #: 3066079

Sample: 7663967-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 10/10/18 20:22

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane | 133 | 100 | 133 | 70-135 | |
| o-Terphenyl | 62.0 | 50.0 | 124 | 70-135 | |

Lab Batch #: 3066105

Sample: 7663978-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 10/10/18 21:10

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0346 | 0.0300 | 115 | 70-130 | |
| 4-Bromofluorobenzene | 0.0260 | 0.0300 | 87 | 70-130 | |

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: COG-Cabo Blanco State 1H

Work Orders : 601707,

Project ID: 212C-MD-01419

Lab Batch #: 3066135

Sample: 7664005-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 10/11/18 13:39

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0316 | 0.0300 | 105 | 70-130 | |
| 4-Bromofluorobenzene | 0.0286 | 0.0300 | 95 | 70-130 | |

Lab Batch #: 3066101

Sample: 601707-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/10/18 14:52

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0283 | 0.0300 | 94 | 70-130 | |
| 4-Bromofluorobenzene | 0.0244 | 0.0300 | 81 | 70-130 | |

Lab Batch #: 3066079

Sample: 601707-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/10/18 20:59

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane | 128 | 100 | 128 | 70-135 | |
| o-Terphenyl | 50.6 | 50.0 | 101 | 70-135 | |

Lab Batch #: 3066105

Sample: 601319-003 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/10/18 21:31

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0368 | 0.0300 | 123 | 70-130 | |
| 4-Bromofluorobenzene | 0.0330 | 0.0300 | 110 | 70-130 | |

Lab Batch #: 3066135

Sample: 601707-023 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/11/18 14:00

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0341 | 0.0300 | 114 | 70-130 | |
| 4-Bromofluorobenzene | 0.0351 | 0.0300 | 117 | 70-130 | |

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: COG-Cabo Blanco State 1H

Work Orders : 601707,

Project ID: 212C-MD-01419

Lab Batch #: 3066101

Sample: 601707-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/10/18 15:12

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|--------------------------|-------------------------|------------------------|------------------------|--------------------------|--------------|
| Analytes | | | | | |
| 1,4-Difluorobenzene | 0.0283 | 0.0300 | 94 | 70-130 | |
| 4-Bromofluorobenzene | 0.0263 | 0.0300 | 88 | 70-130 | |

Lab Batch #: 3066079

Sample: 601707-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/10/18 21:17

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|--------------------------|-------------------------|------------------------|------------------------|--------------------------|--------------|
| Analytes | | | | | |
| 1-Chlorooctane | 117 | 99.8 | 117 | 70-135 | |
| o-Terphenyl | 51.4 | 49.9 | 103 | 70-135 | |

Lab Batch #: 3066135

Sample: 601707-023 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/11/18 14:21

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|--------------------------|-------------------------|------------------------|------------------------|--------------------------|--------------|
| Analytes | | | | | |
| 1,4-Difluorobenzene | 0.0311 | 0.0300 | 104 | 70-130 | |
| 4-Bromofluorobenzene | 0.0295 | 0.0300 | 98 | 70-130 | |

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.



BS / BSD Recoveries



Project Name: COG-Cabo Blanco State 1H

Work Order #: 601707

Project ID: 212C-MD-01419

Analyst: ALJ

Date Prepared: 10/10/2018

Date Analyzed: 10/10/2018

Lab Batch ID: 3066105

Sample: 7663978-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

| BTEX by EPA 8021B | Blank Sample Result [A] | Spike Added [B] | Blank Spike Result [C] | Blank Spike %R [D] | Spike Added [E] | Blank Spike Duplicate Result [F] | Blk. Spk Dup. %R [G] | RPD % | Control Limits %R | Control Limits %RPD | Flag |
|-------------------|-------------------------|-----------------|------------------------|--------------------|-----------------|----------------------------------|----------------------|-------|-------------------|---------------------|------|
| Analytes | | | | | | | | | | | |
| Benzene | <0.00202 | 0.101 | 0.0898 | 89 | 0.100 | 0.0981 | 98 | 9 | 70-130 | 35 | |
| Toluene | <0.00202 | 0.101 | 0.0825 | 82 | 0.100 | 0.0923 | 92 | 11 | 70-130 | 35 | |
| Ethylbenzene | <0.00202 | 0.101 | 0.0944 | 93 | 0.100 | 0.109 | 109 | 14 | 70-130 | 35 | |
| m,p-Xylenes | <0.00403 | 0.202 | 0.183 | 91 | 0.201 | 0.217 | 108 | 17 | 70-130 | 35 | |
| o-Xylene | <0.00202 | 0.101 | 0.0905 | 90 | 0.100 | 0.108 | 108 | 18 | 70-130 | 35 | |

Analyst: ALJ

Date Prepared: 10/10/2018

Date Analyzed: 10/10/2018

Lab Batch ID: 3066101

Sample: 7663985-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

| BTEX by EPA 8021B | Blank Sample Result [A] | Spike Added [B] | Blank Spike Result [C] | Blank Spike %R [D] | Spike Added [E] | Blank Spike Duplicate Result [F] | Blk. Spk Dup. %R [G] | RPD % | Control Limits %R | Control Limits %RPD | Flag |
|-------------------|-------------------------|-----------------|------------------------|--------------------|-----------------|----------------------------------|----------------------|-------|-------------------|---------------------|------|
| Analytes | | | | | | | | | | | |
| Benzene | <0.00200 | 0.0998 | 0.102 | 102 | 0.100 | 0.0971 | 97 | 5 | 70-130 | 35 | |
| Toluene | <0.00200 | 0.0998 | 0.106 | 106 | 0.100 | 0.101 | 101 | 5 | 70-130 | 35 | |
| Ethylbenzene | <0.00200 | 0.0998 | 0.106 | 106 | 0.100 | 0.102 | 102 | 4 | 70-130 | 35 | |
| m,p-Xylenes | <0.00399 | 0.200 | 0.203 | 102 | 0.201 | 0.197 | 98 | 3 | 70-130 | 35 | |
| o-Xylene | <0.00200 | 0.0998 | 0.0961 | 96 | 0.100 | 0.0938 | 94 | 2 | 70-130 | 35 | |

Relative Percent Difference RPD = $200 * |(C-F)/(C+F)|$ Blank Spike Recovery [D] = $100 * (C)/[B]$ Blank Spike Duplicate Recovery [G] = $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



BS / BSD Recoveries



Project Name: COG-Cabo Blanco State 1H

Work Order #: 601707

Project ID: 212C-MD-01419

Analyst: ALJ

Date Prepared: 10/11/2018

Date Analyzed: 10/11/2018

Lab Batch ID: 3066135

Sample: 7664005-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

| BTEX by EPA 8021B | Blank Sample Result [A] | Spike Added [B] | Blank Spike Result [C] | Blank Spike %R [D] | Spike Added [E] | Blank Spike Duplicate Result [F] | Blk. Spk Dup. %R [G] | RPD % | Control Limits %R | Control Limits %RPD | Flag |
|-------------------|-------------------------|-----------------|------------------------|--------------------|-----------------|----------------------------------|----------------------|-------|-------------------|---------------------|------|
| Analytes | | | | | | | | | | | |
| Benzene | <0.00202 | 0.101 | 0.0918 | 91 | 0.100 | 0.0835 | 84 | 9 | 70-130 | 35 | |
| Toluene | <0.00202 | 0.101 | 0.0835 | 83 | 0.100 | 0.0822 | 82 | 2 | 70-130 | 35 | |
| Ethylbenzene | <0.00202 | 0.101 | 0.104 | 103 | 0.100 | 0.0965 | 97 | 7 | 70-130 | 35 | |
| m,p-Xylenes | <0.00403 | 0.202 | 0.206 | 102 | 0.200 | 0.192 | 96 | 7 | 70-130 | 35 | |
| o-Xylene | <0.00202 | 0.101 | 0.103 | 102 | 0.100 | 0.0966 | 97 | 6 | 70-130 | 35 | |

Analyst: CHE

Date Prepared: 10/09/2018

Date Analyzed: 10/09/2018

Lab Batch ID: 3065900

Sample: 7663789-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

| Chloride by EPA 300 | Blank Sample Result [A] | Spike Added [B] | Blank Spike Result [C] | Blank Spike %R [D] | Spike Added [E] | Blank Spike Duplicate Result [F] | Blk. Spk Dup. %R [G] | RPD % | Control Limits %R | Control Limits %RPD | Flag |
|---------------------|-------------------------|-----------------|------------------------|--------------------|-----------------|----------------------------------|----------------------|-------|-------------------|---------------------|------|
| Analytes | | | | | | | | | | | |
| Chloride | <5.00 | 250 | 248 | 99 | 250 | 248 | 99 | 0 | 90-110 | 20 | |

Relative Percent Difference RPD = $200 * |(C-F)/(C+F)|$ Blank Spike Recovery [D] = $100 * (C)/[B]$ Blank Spike Duplicate Recovery [G] = $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



BS / BSD Recoveries



Project Name: COG-Cabo Blanco State 1H

Work Order #: 601707

Project ID: 212C-MD-01419

Analyst: SCM

Date Prepared: 10/09/2018

Date Analyzed: 10/09/2018

Lab Batch ID: 3065905

Sample: 7663854-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

| Chloride by EPA 300 | Blank Sample Result [A] | Spike Added [B] | Blank Spike Result [C] | Blank Spike %R [D] | Spike Added [E] | Blank Spike Duplicate Result [F] | Blk. Spk Dup. %R [G] | RPD % | Control Limits %R | Control Limits %RPD | Flag |
|---------------------|-------------------------|-----------------|------------------------|--------------------|-----------------|----------------------------------|----------------------|-------|-------------------|---------------------|------|
| Analytes | | | | | | | | | | | |
| Chloride | <5.00 | 250 | 255 | 102 | 250 | 258 | 103 | 1 | 90-110 | 20 | |

Analyst: ARM

Date Prepared: 10/10/2018

Date Analyzed: 10/10/2018

Lab Batch ID: 3066079

Sample: 7663967-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

| TPH by SW8015 Mod | Blank Sample Result [A] | Spike Added [B] | Blank Spike Result [C] | Blank Spike %R [D] | Spike Added [E] | Blank Spike Duplicate Result [F] | Blk. Spk Dup. %R [G] | RPD % | Control Limits %R | Control Limits %RPD | Flag |
|-----------------------------------|-------------------------|-----------------|------------------------|--------------------|-----------------|----------------------------------|----------------------|-------|-------------------|---------------------|------|
| Analytes | | | | | | | | | | | |
| Gasoline Range Hydrocarbons (GRO) | <8.00 | 1000 | 988 | 99 | 1000 | 1130 | 113 | 13 | 70-135 | 20 | |
| Diesel Range Organics (DRO) | <8.13 | 1000 | 1020 | 102 | 1000 | 1170 | 117 | 14 | 70-135 | 20 | |

Relative Percent Difference RPD = $200 * |(C-F)/(C+F)|$ Blank Spike Recovery [D] = $100 * (C)/[B]$ Blank Spike Duplicate Recovery [G] = $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



Form 3 - MS Recoveries

Project Name: COG-Cabo Blanco State 1H

Work Order #: 601707

Lab Batch #: 3066105

Project ID: 212C-MD-01419

Date Analyzed: 10/10/2018

Date Prepared: 10/10/2018

Analyst: ALJ

QC- Sample ID: 601319-003 S

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

MATRIX / MATRIX SPIKE RECOVERY STUDY

| BTEX by EPA 8021B | Parent Sample Result [A] | Spike Added [B] | Spiked Sample Result [C] | %R [D] | Control Limits %R | Flag |
|--------------------------|---------------------------------|------------------------|---------------------------------|---------------|--------------------------|-------------|
| Analytes | | | | | | |
| Benzene | <0.00201 | 0.100 | 0.0775 | 78 | 70-130 | |
| Toluene | <0.00201 | 0.100 | 0.0663 | 66 | 70-130 | X |
| Ethylbenzene | <0.00201 | 0.100 | 0.0704 | 70 | 70-130 | |
| m,p-Xylenes | <0.00402 | 0.201 | 0.130 | 65 | 70-130 | X |
| o-Xylene | <0.00201 | 0.100 | 0.0659 | 66 | 70-130 | X |

Matrix Spike Percent Recovery [D] = $100 \times (C-A)/B$ Relative Percent Difference [E] = $200 \times (C-A)/(C+B)$

All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



Form 3 - MS / MSD Recoveries



Project Name: COG-Cabo Blanco State 1H

Work Order #: 601707

Project ID: 212C-MD-01419

Lab Batch ID: 3066101

QC- Sample ID: 601707-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 10/10/2018

Date Prepared: 10/10/2018

Analyst: ALJ

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Parent Sample Result [A] | Spike Added [B] | Spiked Sample Result [C] | Spiked Sample %R [D] | Spike Added [E] | Duplicate Spiked Sample Result [F] | Spiked Dup. %R [G] | RPD % | Control Limits %R | Control Limits %RPD | Flag |
|-------------------------------|-----------------------------------|-----------------------|--------------------------------|-------------------------------|-----------------------|--|-----------------------------|----------|-------------------------|---------------------------|------|
| Benzene | <0.00202 | 0.101 | 0.101 | 100 | 0.100 | 0.0797 | 80 | 24 | 70-130 | 35 | |
| Toluene | <0.00202 | 0.101 | 0.102 | 101 | 0.100 | 0.0796 | 80 | 25 | 70-130 | 35 | |
| Ethylbenzene | <0.00202 | 0.101 | 0.0997 | 99 | 0.100 | 0.0777 | 78 | 25 | 70-130 | 35 | |
| m,p-Xylenes | <0.00403 | 0.202 | 0.191 | 95 | 0.200 | 0.149 | 75 | 25 | 70-130 | 35 | |
| o-Xylene | <0.00202 | 0.101 | 0.0916 | 91 | 0.100 | 0.0714 | 71 | 25 | 70-130 | 35 | |

Lab Batch ID: 3066135

QC- Sample ID: 601707-023 S

Batch #: 1 Matrix: Soil

Date Analyzed: 10/11/2018

Date Prepared: 10/11/2018

Analyst: ALJ

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Parent Sample Result [A] | Spike Added [B] | Spiked Sample Result [C] | Spiked Sample %R [D] | Spike Added [E] | Duplicate Spiked Sample Result [F] | Spiked Dup. %R [G] | RPD % | Control Limits %R | Control Limits %RPD | Flag |
|-------------------------------|-----------------------------------|-----------------------|--------------------------------|-------------------------------|-----------------------|--|-----------------------------|----------|-------------------------|---------------------------|------|
| Benzene | <0.00199 | 0.0994 | 0.0758 | 76 | 0.100 | 0.0662 | 66 | 14 | 70-130 | 35 | X |
| Toluene | <0.00199 | 0.0994 | 0.0685 | 69 | 0.100 | 0.0597 | 60 | 14 | 70-130 | 35 | X |
| Ethylbenzene | <0.00199 | 0.0994 | 0.0772 | 78 | 0.100 | 0.0687 | 69 | 12 | 70-130 | 35 | X |
| m,p-Xylenes | <0.00398 | 0.199 | 0.149 | 75 | 0.200 | 0.132 | 66 | 12 | 70-130 | 35 | X |
| o-Xylene | <0.00199 | 0.0994 | 0.0767 | 77 | 0.100 | 0.0676 | 68 | 13 | 70-130 | 35 | X |

Matrix Spike Percent Recovery $[D] = 100 * (C - A) / B$
 Relative Percent Difference $RPD = 200 * |(C - F) / (C + F)|$

Matrix Spike Duplicate Percent Recovery $[G] = 100 * (F - A) / E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



Form 3 - MS / MSD Recoveries



Project Name: COG-Cabo Blanco State 1H

Work Order #: 601707

Project ID: 212C-MD-01419

Lab Batch ID: 3065900

QC- Sample ID: 601707-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 10/09/2018

Date Prepared: 10/09/2018

Analyst: CHE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

| Chloride by EPA 300 Analytes | Parent Sample Result [A] | Spike Added [B] | Spiked Sample Result [C] | Spiked Sample %R [D] | Spike Added [E] | Duplicate Spiked Sample Result [F] | Spiked Dup. %R [G] | RPD % | Control Limits %R | Control Limits %RPD | Flag |
|---------------------------------|--------------------------|-----------------|--------------------------|----------------------|-----------------|------------------------------------|--------------------|-------|-------------------|---------------------|------|
| Chloride | <0.855 | 249 | 247 | 99 | 249 | 247 | 99 | 0 | 90-110 | 20 | |

Lab Batch ID: 3065900

QC- Sample ID: 601707-011 S

Batch #: 1 Matrix: Soil

Date Analyzed: 10/09/2018

Date Prepared: 10/09/2018

Analyst: CHE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

| Chloride by EPA 300 Analytes | Parent Sample Result [A] | Spike Added [B] | Spiked Sample Result [C] | Spiked Sample %R [D] | Spike Added [E] | Duplicate Spiked Sample Result [F] | Spiked Dup. %R [G] | RPD % | Control Limits %R | Control Limits %RPD | Flag |
|---------------------------------|--------------------------|-----------------|--------------------------|----------------------|-----------------|------------------------------------|--------------------|-------|-------------------|---------------------|------|
| Chloride | <0.857 | 250 | 250 | 100 | 250 | 249 | 100 | 0 | 90-110 | 20 | |

Lab Batch ID: 3065905

QC- Sample ID: 601707-021 S

Batch #: 1 Matrix: Soil

Date Analyzed: 10/09/2018

Date Prepared: 10/09/2018

Analyst: SCM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

| Chloride by EPA 300 Analytes | Parent Sample Result [A] | Spike Added [B] | Spiked Sample Result [C] | Spiked Sample %R [D] | Spike Added [E] | Duplicate Spiked Sample Result [F] | Spiked Dup. %R [G] | RPD % | Control Limits %R | Control Limits %RPD | Flag |
|---------------------------------|--------------------------|-----------------|--------------------------|----------------------|-----------------|------------------------------------|--------------------|-------|-------------------|---------------------|------|
| Chloride | <0.858 | 250 | 250 | 100 | 250 | 249 | 100 | 0 | 90-110 | 20 | |

Matrix Spike Percent Recovery $[D] = 100 \times (C-A)/B$
 Relative Percent Difference $RPD = 200 \times |(C-F)/(C+F)|$

Matrix Spike Duplicate Percent Recovery $[G] = 100 \times (F-A)/E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



Form 3 - MS / MSD Recoveries



Project Name: COG-Cabo Blanco State 1H

Work Order #: 601707

Project ID: 212C-MD-01419

Lab Batch ID: 3065905

QC- Sample ID: 601707-031 S

Batch #: 1 Matrix: Soil

Date Analyzed: 10/10/2018

Date Prepared: 10/09/2018

Analyst: SCM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

| Chloride by EPA 300 Analytes | Parent Sample Result [A] | Spike Added [B] | Spiked Sample Result [C] | Spiked Sample %R [D] | Spike Added [E] | Duplicate Spiked Sample Result [F] | Spiked Dup. %R [G] | RPD % | Control Limits %R | Control Limits %RPD | Flag |
|---------------------------------|-----------------------------------|-----------------------|--------------------------------|-------------------------------|-----------------------|--|-----------------------------|----------|-------------------------|---------------------------|------|
| Chloride | 0.939 | 248 | 273 | 110 | 248 | 275 | 111 | 1 | 90-110 | 20 | X |

Lab Batch ID: 3066079

QC- Sample ID: 601707-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 10/10/2018

Date Prepared: 10/10/2018

Analyst: ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Parent Sample Result [A] | Spike Added [B] | Spiked Sample Result [C] | Spiked Sample %R [D] | Spike Added [E] | Duplicate Spiked Sample Result [F] | Spiked Dup. %R [G] | RPD % | Control Limits %R | Control Limits %RPD | Flag |
|-----------------------------------|-----------------------------------|-----------------------|--------------------------------|-------------------------------|-----------------------|--|-----------------------------|----------|-------------------------|---------------------------|------|
| Gasoline Range Hydrocarbons (GRO) | 14.7 | 1000 | 956 | 94 | 998 | 985 | 97 | 3 | 70-135 | 20 | |
| Diesel Range Organics (DRO) | <8.13 | 1000 | 961 | 96 | 998 | 990 | 99 | 3 | 70-135 | 20 | |

Matrix Spike Percent Recovery $[D] = 100 \times (C-A)/B$
 Relative Percent Difference $RPD = 200 \times |(C-F)/(C+F)|$

Matrix Spike Duplicate Percent Recovery $[G] = 100 \times (F-A)/E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Analysis Request of Chain of Custody Record



Tetra Tech, Inc.

 4000 N. Big Spring Street, Ste
 401 Midland, Texas 79705
 Tel (432) 882-4559
 Fax (432) 882-3948

601707

Page 1 of 4

| | | | | | | | |
|--------------------------------------|--|------------------------|--|--------------------|--|-----------------|--|
| Client Name: | | COG | | Site Manager: | | Clair Gonzales | |
| Project Name: | | Cabo Blanco Station 14 | | Project #: | | 212C-MD-01419 | |
| Project Location: (county, state) | | Lea CO, NM | | Project #: | | 212C-MD-01419 | |
| Invoice to: | | COG - Ika Taveriez | | Sampler Signature: | | Conner Moehring | |
| Receiving Laboratory: | | Xenco | | Sampler Signature: | | Conner Moehring | |
| Comments: | | | | | | | |

| LAB # (LAB USE ONLY) | SAMPLE IDENTIFICATION | SAMPLING | | MATRIX | | PRESERVATIVE METHOD | | | | | # CONTAINERS | FILTERED (Y/N) | |
|-------------------------|-----------------------|-----------|------|--------|------|---------------------|------------------|-----|------|-----------|--------------|----------------|------|
| | | DATE | TIME | WATER | SOIL | HCL | HNO ₃ | ICE | None | | | | |
| | | | | | | | | | | YEAR 2018 | | | TIME |
| | Side Wall #1 | 10/8/2018 | | X | | X | | | | | | 1 N | |
| | Side Wall #2 | 10/8/2018 | | X | | X | | | | | | 1 N | |
| | Side Wall #3 | 10/8/2018 | | X | | X | | | | | | 1 N | |
| | Side Wall #4 | 10/8/2018 | | X | | X | | | | | | 1 N | |
| | Side Wall #5 | 10/8/2018 | | X | | X | | | | | | 1 N | |
| | Side Wall #6 | 10/8/2018 | | X | | X | | | | | | 1 N | |
| | Side Wall #7 | 10/8/2018 | | X | | X | | | | | | 1 N | |
| | Side Wall #8 | 10/8/2018 | | X | | X | | | | | | 1 N | |
| | Side Wall #9 | 10/8/2018 | | X | | X | | | | | | 1 N | |
| | Side Wall #10 | 10/8/2018 | | X | | X | | | | | | 1 N | |

| | | | | | |
|------------------|---------|-------|-----------------|---------|-------|
| Relinquished by: | Date: | Time: | Received by: | Date: | Time: |
| Ika Taveriez | 10/9/18 | 0920 | Conner Moehring | 10/9/18 | 0921 |
| Relinquished by: | Date: | Time: | Received by: | Date: | Time: |
| | | | | | |

| | | | | | |
|------------------|-------|-------|--------------|-------|-------|
| Relinquished by: | Date: | Time: | Received by: | Date: | Time: |
| | | | | | |

ORIGINAL COPY

(Circle) HAND DELIVERED FEDEX UPS Tracking #:

| | |
|--|--|
| LAB USE ONLY | REMARKS: |
| <input type="checkbox"/> STANDARD <input checked="" type="checkbox"/> RUSH: Same Day (24 hr) 48 hr 72 hr <input type="checkbox"/> Rush Charges Authorized <input type="checkbox"/> Special Report Limits or TRAP Report | Sample Temperature 3.2/0.0 3.2/0.0 |

ANALYSIS REQUEST
(Circle or Specify Method No.)

| | |
|---|--|
| BTEX 8021B BTEX 8260B | |
| TPH TX1005 (Ext to C35) | |
| TPH 8015M (GRO - DRO - ORO - MRO) | |
| PAH 8270C | |
| Total Metals Ag As Ba Cd Cr Pb Se Hg | |
| TCLP Metals Ag As Ba Cd Cr Pb Se Hg | |
| TCLP Volatiles | |
| TCLP Semi Volatiles | |
| RCI | |
| GC/MS Vol. 8260B / 624 | |
| GC/MS Semi. Vol. 8270C/625 | |
| PCB's 8082 / 608 | |
| NORM | |
| PLM (Asbestos) | |
| Chloride | |
| Chloride Sulfate TDS | |
| General Water Chemistry (see attached list) | |
| Anion/Cation Balance | |
| Hold | |

Analysis Request of Chain of Custody Record



Tetra Tech, Inc.

 4000 N. Bag Spring Street, Ste
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 Tel (432) 682-4559
 Fax (432) 682-3948

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| | | | | | | | |
|--------------------------------------|--|-------------------|--|--------------------|--|-----------------|--|
| Client Name: | | COG | | Site Manager: | | Clair Gonzales | |
| Project Name: | | Cabo Blanco | | Project #: | | 212C-MD-D1419 | |
| Project Location: (county, state) | | Lea CO, NM | | Project #: | | 212C-MD-D1419 | |
| Invoice to: | | COG - Ike Taveraz | | Sampler Signature: | | Conner Moehring | |
| Receiving Laboratory: | | Xenco | | Sampler Signature: | | Conner Moehring | |
| Comments: | | | | | | | |

| LAB # (LAB USE ONLY) | SAMPLE IDENTIFICATION | SAMPLING | | MATRIX | PRESERVATIVE METHOD | | | | | # CONTAINERS | FILTERED (Y/N) | ANALYSIS REQUEST (Circle or Specify Method No.) |
|-------------------------|-----------------------|-----------|------|--------|---------------------|------|-----|------------------|-----|--------------|----------------|--|
| | | DATE | TIME | | WATER | SOIL | HCL | HNO ₃ | ICE | | | |
| | Side Wall #11 | 10/8/2018 | | X | | | | | | 1N | | X |
| | Side Wall #12 | 10/8/2018 | | X | | | | | | 1N | | X |
| | Side Wall #13 | 10/8/2018 | | X | | | | | | 1N | | X |
| | Side Wall #14 | 10/8/2018 | | X | | | | | | 1N | | X |
| | Side Wall #15 | 10/8/2018 | | X | | | | | | 1N | | X |
| | Side Wall #16 | 10/8/2018 | | X | | | | | | 1N | | X |
| | Side Wall #17 | 10/8/2018 | | X | | | | | | 1N | | X |
| | Side Wall #18 | 10/8/2018 | | X | | | | | | 1N | | X |
| | Side Wall #19 | 10/8/2018 | | X | | | | | | 1N | | X |
| | Side Wall #20 | 10/8/2018 | | X | | | | | | 1N | | X |

| | | | | | |
|------------------|-------|-------|--------------|-------|-------|
| Relinquished by: | Date: | Time: | Received by: | Date: | Time: |
| Relinquished by: | Date: | Time: | Received by: | Date: | Time: |
| Relinquished by: | Date: | Time: | Received by: | Date: | Time: |

| | |
|--------------------------------------|----------|
| LAB USE ONLY | REMARKS: |
| STANDARD | |
| Push: Same Day | |
| Push Charges Authorized | |
| Special Report Limits or TRRP Report | |

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Analysis Request of Chain of Custody Record



Tetra Tech, Inc.

 4000 N. Bay Spring Street, Ste
 401 Lakeland, Texas 79105
 Tel (432) 982-4553
 Fax (432) 982-3940

Page 3 of 4

| | | | | | | | |
|--------------------------------------|--|-------------|--|--------------------|--|-------------------|--|
| Client Name: | | COG | | Site Manager: | | Clair Gonzales | |
| Project Name: | | Cabo Blanco | | Project #: | | 212C-MD-01419 | |
| Project Location: (county, state) | | Lea CO, NM | | Invoice to: | | COG - Ike Taveres | |
| Receiving Laboratory: | | Xenco | | Sampler Signature: | | Conner Moshring | |
| Comments: | | | | | | | |

| LAB # (LAB USE ONLY) | SAMPLE IDENTIFICATION | SAMPLING | | MATRIX | | PRESERVATIVE METHOD | | | | | # CONTAINERS | FILTERED (Y/N) | LAB USE ONLY | REMARKS: | |
|-------------------------|-----------------------|-----------|------|--------|------|---------------------|------------------|-----|------|------------|--------------|----------------|--------------|----------|--|
| | | DATE | TIME | WATER | SOIL | HCL | HNO ₃ | ICE | None | | | | | | |
| | | | | | | | | | | YEAR: 2018 | | | | | |
| | Side Wall #21 | 10/8/2018 | | X | | | | X | | | | 1 | N | | |
| | Side Wall #22 | 10/8/2018 | | X | | | | X | | | | 1 | N | | |
| | Side Wall #23 | 10/8/2018 | | X | | | | X | | | | 1 | N | | |
| | Side Wall #24 | 10/8/2018 | | X | | | | X | | | | 1 | N | | |
| | Side Wall #25 | 10/8/2018 | | X | | | | X | | | | 1 | N | | |
| | Side Wall #26 | 10/8/2018 | | X | | | | X | | | | 1 | N | | |
| | Side Wall #27 | 10/8/2018 | | X | | | | X | | | | 1 | N | | |
| | Side Wall #28 | 10/8/2018 | | X | | | | X | | | | 1 | N | | |
| | Side Wall #29 | 10/8/2018 | | X | | | | X | | | | 1 | N | | |
| | Side Wall #30 | 10/8/2018 | | X | | | | X | | | | 1 | N | | |

| | | | | | |
|-----------------------|---------|-------|------------------------|---------|-------|
| Relinquished by: | Date: | Time: | Received by: | Date: | Time: |
| <i>Peter B. Bient</i> | 10-9-18 | 9:20 | <i>Conner Moshring</i> | 10/9/18 | 0921 |
| Relinquished by: | Date: | Time: | Received by: | Date: | Time: |
| | | | | | |

| | | | | | |
|------------------|-------|-------|--------------|-------|-------|
| Relinquished by: | Date: | Time: | Received by: | Date: | Time: |
| | | | | | |

| | | | |
|--------------------|-------|--|--|
| LAB USE ONLY | | REMARKS: | |
| Sample Temperature | 38.00 | <input type="checkbox"/> STANDARD | |
| | 108 | <input checked="" type="checkbox"/> RUSH: Same Day (24 hr / 48 hr / 72 hr) | |
| | | <input type="checkbox"/> Rush Charges Authorized | |
| | | <input type="checkbox"/> Special Report Limits or TRRP Report | |

| | |
|--|-------------------------------------|
| ANALYSIS REQUEST (Circle or Specify Method No.) | |
| <input type="checkbox"/> BTEX 8201B | <input type="checkbox"/> BTEX 8260B |
| <input type="checkbox"/> TPH TX1005 (Ext to C35) | |
| <input type="checkbox"/> TPH 8015M (GRO - DRO - ORD - MRO) | |
| <input type="checkbox"/> PAH 8270C | |
| <input type="checkbox"/> Total Metals Ag As Ba Cd Cr Pb Se Hg | |
| <input type="checkbox"/> TCLP Metals Ag As Ba Cd Cr Pb Se Hg | |
| <input type="checkbox"/> TCLP Volatiles | |
| <input type="checkbox"/> TCLP Semi Volatiles | |
| <input type="checkbox"/> RCI | |
| <input type="checkbox"/> GC/MS Vol. 8260B / 624 | |
| <input type="checkbox"/> GC/MS Semi. Vol. 8270C/625 | |
| <input type="checkbox"/> PCB's 8082 / 608 | |
| <input type="checkbox"/> NORM | |
| <input type="checkbox"/> PLM (Asbestos) | |
| <input type="checkbox"/> Chloride | |
| <input type="checkbox"/> Chloride Sulfate TDS | |
| <input type="checkbox"/> General Water Chemistry (see attached list) | |
| <input type="checkbox"/> Anion/Cation Balance | |
| <input type="checkbox"/> Hold | |

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Tetra Tech, Inc.

Page 4 of 4

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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech- Midland

Date/ Time Received: 10/09/2018 09:21:00 AM

Work Order #: 601707

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)? | 3.2 |
| #2 *Shipping container in good condition? | Yes |
| #3 *Samples received on ice? | Yes |
| #4 *Custody Seals intact on shipping container/ cooler? | N/A |
| #5 Custody Seals intact on sample bottles? | N/A |
| #6 *Custody Seals Signed and dated? | N/A |
| #7 *Chain of Custody present? | Yes |
| #8 Any missing/extra samples? | No |
| #9 Chain of Custody signed when relinquished/ received? | Yes |
| #10 Chain of Custody agrees with sample labels/matrix? | Yes |
| #11 Container label(s) legible and intact? | Yes |
| #12 Samples in proper container/ bottle? | Yes |
| #13 Samples properly preserved? | Yes |
| #14 Sample container(s) intact? | Yes |
| #15 Sufficient sample amount for indicated test(s)? | Yes |
| #16 All samples received within hold time? | Yes |
| #17 Subcontract of sample(s)? | N/A |
| #18 Water 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:

Brianna Teel

Date: 10/09/2018

Checklist reviewed by:

Jessica Kramer

Date: 10/09/2018

Analytical Report 601870

for Tetra Tech- Midland

Project Manager: Clair Gonzales

COG-Cabo Blanco

212C-MD-01419

11-OCT-18

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-18-27), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-13)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-17)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)

Xenco-Atlanta (LELAP Lab ID #04176)

Xenco-Tampa: Florida (E87429)

Xenco-Lakeland: Florida (E84098)



11-OCT-18

Project Manager: **Clair Gonzales**

Tetra Tech- Midland

901 West Wall ST

Midland, TX 79701

Reference: XENCO Report No(s): **601870**

COG-Cabo Blanco

Project Address: Lea Co, NM

Clair Gonzales:

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) 601870. 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. 601870 will be filed for 45 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 'Jessica Kramer'.

Jessica Kramer

Project Assistant

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 601870



Tetra Tech- Midland, Midland, TX

COG-Cabo Blanco

| Sample Id | Matrix | Date Collected | Sample Depth | Lab Sample Id |
|-------------------------|--------|----------------|--------------|---------------|
| Bottom Hole #7 BEB 5.5' | S | 10-09-18 00:00 | | 601870-001 |



CASE NARRATIVE

Client Name: Tetra Tech- Midland

Project Name: COG-Cabo Blanco

Project ID: 212C-MD-01419
Work Order Number(s): 601870

Report Date: 11-OCT-18
Date Received: 10/10/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3066105 BTEX by EPA 8021B

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



Certificate of Analysis Summary 601870

Tetra Tech- Midland, Midland, TX

Project Name: COG-Cabo Blanco



Project Id: 212C-MD-01419
Contact: Clair Gonzales
Project Location: Lea Co, NM

Date Received in Lab: Wed Oct-10-18 09:10 am
Report Date: 11-OCT-18
Project Manager: Jessica Kramer

| | | | | | | |
|------------------------------------|--|--|--|--|--|--|
| Analysis Requested | Lab Id: 601870-001 Field Id: Bottom Hole #7 BEB 5.5' Depth: Matrix: SOIL Sampled: Oct-09-18 00:00 | | | | | |
| BTEX by EPA 8021B | Extracted: Oct-10-18 17:00 Analyzed: Oct-11-18 11:52 Units/RL: mg/kg RL | | | | | |
| Benzene | <0.00201 0.00201 | | | | | |
| Toluene | <0.00201 0.00201 | | | | | |
| Ethylbenzene | <0.00201 0.00201 | | | | | |
| m,p-Xylenes | <0.00402 0.00402 | | | | | |
| o-Xylene | <0.00201 0.00201 | | | | | |
| Total Xylenes | <0.00201 0.00201 | | | | | |
| Total BTEX | <0.00201 0.00201 | | | | | |
| Chloride by EPA 300 | Extracted: Oct-10-18 15:00 Analyzed: Oct-10-18 18:58 Units/RL: mg/kg RL | | | | | |
| Chloride | 254 4.98 | | | | | |
| TPH by SW8015 Mod | Extracted: Oct-10-18 13:00 Analyzed: Oct-11-18 03:13 Units/RL: mg/kg RL | | | | | |
| Gasoline Range Hydrocarbons (GRO) | <15.0 15.0 | | | | | |
| Diesel Range Organics (DRO) | <15.0 15.0 | | | | | |
| Motor Oil Range Hydrocarbons (MRO) | <15.0 15.0 | | | | | |
| Total TPH | <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

Jessica Kramer

Jessica Kramer
Project Assistant



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

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

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



Form 2 - Surrogate Recoveries

Project Name: COG-Cabo Blanco

Work Orders : 601870,

Project ID: 212C-MD-01419

Lab Batch #: 3066079

Sample: 601870-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/11/18 03:13

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane | 91.8 | 99.8 | 92 | 70-135 | |
| o-Terphenyl | 47.0 | 49.9 | 94 | 70-135 | |

Lab Batch #: 3066105

Sample: 601870-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/11/18 11:52

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0326 | 0.0300 | 109 | 70-130 | |
| 4-Bromofluorobenzene | 0.0319 | 0.0300 | 106 | 70-130 | |

Lab Batch #: 3066079

Sample: 7663967-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 10/10/18 19:44

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane | 97.0 | 100 | 97 | 70-135 | |
| o-Terphenyl | 51.8 | 50.0 | 104 | 70-135 | |

Lab Batch #: 3066105

Sample: 7663978-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 10/10/18 22:34

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0333 | 0.0300 | 111 | 70-130 | |
| 4-Bromofluorobenzene | 0.0261 | 0.0300 | 87 | 70-130 | |

Lab Batch #: 3066079

Sample: 7663967-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 10/10/18 20:03

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane | 117 | 100 | 117 | 70-135 | |
| o-Terphenyl | 52.0 | 50.0 | 104 | 70-135 | |

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: COG-Cabo Blanco

Work Orders : 601870,

Project ID: 212C-MD-01419

Lab Batch #: 3066105

Sample: 7663978-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 10/10/18 20:48

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0312 | 0.0300 | 104 | 70-130 | |
| 4-Bromofluorobenzene | 0.0219 | 0.0300 | 73 | 70-130 | |

Lab Batch #: 3066079

Sample: 7663967-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 10/10/18 20:22

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane | 133 | 100 | 133 | 70-135 | |
| o-Terphenyl | 62.0 | 50.0 | 124 | 70-135 | |

Lab Batch #: 3066105

Sample: 7663978-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 10/10/18 21:10

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0346 | 0.0300 | 115 | 70-130 | |
| 4-Bromofluorobenzene | 0.0260 | 0.0300 | 87 | 70-130 | |

Lab Batch #: 3066079

Sample: 601707-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/10/18 20:59

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane | 128 | 100 | 128 | 70-135 | |
| o-Terphenyl | 50.6 | 50.0 | 101 | 70-135 | |

Lab Batch #: 3066105

Sample: 601319-003 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/10/18 21:31

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0368 | 0.0300 | 123 | 70-130 | |
| 4-Bromofluorobenzene | 0.0330 | 0.0300 | 110 | 70-130 | |

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: COG-Cabo Blanco

Work Orders : 601870,

Project ID: 212C-MD-01419

Lab Batch #: 3066079

Sample: 601707-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/10/18 21:17

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-----------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane | 117 | 99.8 | 117 | 70-135 | |
| o-Terphenyl | 51.4 | 49.9 | 103 | 70-135 | |

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



BS / BSD Recoveries



Project Name: COG-Cabo Blanco

Work Order #: 601870

Project ID: 212C-MD-01419

Analyst: ALJ

Date Prepared: 10/10/2018

Date Analyzed: 10/10/2018

Lab Batch ID: 3066105

Sample: 7663978-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

| BTEX by EPA 8021B | Blank Sample Result [A] | Spike Added [B] | Blank Spike Result [C] | Blank Spike %R [D] | Spike Added [E] | Blank Spike Duplicate Result [F] | Blk. Spk Dup. %R [G] | RPD % | Control Limits %R | Control Limits %RPD | Flag |
|-------------------|-------------------------|-----------------|------------------------|--------------------|-----------------|----------------------------------|----------------------|-------|-------------------|---------------------|------|
| Analytes | | | | | | | | | | | |
| Benzene | <0.00202 | 0.101 | 0.0898 | 89 | 0.100 | 0.0981 | 98 | 9 | 70-130 | 35 | |
| Toluene | <0.00202 | 0.101 | 0.0825 | 82 | 0.100 | 0.0923 | 92 | 11 | 70-130 | 35 | |
| Ethylbenzene | <0.00202 | 0.101 | 0.0944 | 93 | 0.100 | 0.109 | 109 | 14 | 70-130 | 35 | |
| m,p-Xylenes | <0.00403 | 0.202 | 0.183 | 91 | 0.201 | 0.217 | 108 | 17 | 70-130 | 35 | |
| o-Xylene | <0.00202 | 0.101 | 0.0905 | 90 | 0.100 | 0.108 | 108 | 18 | 70-130 | 35 | |

Analyst: SCM

Date Prepared: 10/10/2018

Date Analyzed: 10/10/2018

Lab Batch ID: 3066070

Sample: 7663920-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

| Chloride by EPA 300 | Blank Sample Result [A] | Spike Added [B] | Blank Spike Result [C] | Blank Spike %R [D] | Spike Added [E] | Blank Spike Duplicate Result [F] | Blk. Spk Dup. %R [G] | RPD % | Control Limits %R | Control Limits %RPD | Flag |
|---------------------|-------------------------|-----------------|------------------------|--------------------|-----------------|----------------------------------|----------------------|-------|-------------------|---------------------|------|
| Analytes | | | | | | | | | | | |
| Chloride | <5.00 | 250 | 253 | 101 | 250 | 253 | 101 | 0 | 90-110 | 20 | |

Relative Percent Difference RPD = $200 * |(C-F)/(C+F)|$ Blank Spike Recovery [D] = $100 * (C)/[B]$ Blank Spike Duplicate Recovery [G] = $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



BS / BSD Recoveries



Project Name: COG-Cabo Blanco

Work Order #: 601870

Project ID: 212C-MD-01419

Analyst: ARM

Date Prepared: 10/10/2018

Date Analyzed: 10/10/2018

Lab Batch ID: 3066079

Sample: 7663967-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Blank Sample Result [A] | Spike Added [B] | Blank Spike Result [C] | Blank Spike %R [D] | Spike Added [E] | Blank Spike Duplicate Result [F] | Blk. Spk Dup. %R [G] | RPD % | Control Limits %R | Control Limits %RPD | Flag |
|-----------------------------------|-------------------------------|-----------------------|---------------------------------|-----------------------------|-----------------------|---|-------------------------------|----------|-------------------------|---------------------------|------|
| Gasoline Range Hydrocarbons (GRO) | <8.00 | 1000 | 988 | 99 | 1000 | 1130 | 113 | 13 | 70-135 | 20 | |
| Diesel Range Organics (DRO) | <8.13 | 1000 | 1020 | 102 | 1000 | 1170 | 117 | 14 | 70-135 | 20 | |

Relative Percent Difference RPD = $200 * |(C-F)/(C+F)|$ Blank Spike Recovery [D] = $100 * (C)/[B]$ Blank Spike Duplicate Recovery [G] = $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



Form 3 - MS Recoveries

Project Name: COG-Cabo Blanco

Work Order #: 601870

Lab Batch #: 3066105

Date Analyzed: 10/10/2018

QC- Sample ID: 601319-003 S

Reporting Units: mg/kg

Date Prepared: 10/10/2018

Batch #: 1

Project ID: 212C-MD-01419

Analyst: ALJ

Matrix: Soil

| MATRIX / MATRIX SPIKE RECOVERY STUDY | | | | | | |
|--------------------------------------|--------------------------|-----------------|--------------------------|--------|-------------------|------|
| BTEX by EPA 8021B | Parent Sample Result [A] | Spike Added [B] | Spiked Sample Result [C] | %R [D] | Control Limits %R | Flag |
| Analytes | | | | | | |
| Benzene | <0.00201 | 0.100 | 0.0775 | 78 | 70-130 | |
| Toluene | <0.00201 | 0.100 | 0.0663 | 66 | 70-130 | X |
| Ethylbenzene | <0.00201 | 0.100 | 0.0704 | 70 | 70-130 | |
| m,p-Xylenes | <0.00402 | 0.201 | 0.130 | 65 | 70-130 | X |
| o-Xylene | <0.00201 | 0.100 | 0.0659 | 66 | 70-130 | X |

Matrix Spike Percent Recovery [D] = $100 \times (C-A)/B$ Relative Percent Difference [E] = $200 \times (C-A)/(C+B)$

All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



Form 3 - MS / MSD Recoveries



Project Name: COG-Cabo Blanco

Work Order #: 601870

Project ID: 212C-MD-01419

Lab Batch ID: 3066070

QC- Sample ID: 601903-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 10/10/2018

Date Prepared: 10/10/2018

Analyst: SCM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

| Chloride by EPA 300 Analytes | Parent Sample Result [A] | Spike Added [B] | Spiked Sample Result [C] | Spiked Sample %R [D] | Spike Added [E] | Duplicate Spiked Sample Result [F] | Spiked Dup. %R [G] | RPD % | Control Limits %R | Control Limits %RPD | Flag |
|---------------------------------|--------------------------|-----------------|--------------------------|----------------------|-----------------|------------------------------------|--------------------|-------|-------------------|---------------------|------|
| Chloride | 343 | 252 | 622 | 111 | 252 | 625 | 112 | 0 | 90-110 | 20 | X |

Lab Batch ID: 3066070

QC- Sample ID: 601905-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 10/10/2018

Date Prepared: 10/10/2018

Analyst: SCM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

| Chloride by EPA 300 Analytes | Parent Sample Result [A] | Spike Added [B] | Spiked Sample Result [C] | Spiked Sample %R [D] | Spike Added [E] | Duplicate Spiked Sample Result [F] | Spiked Dup. %R [G] | RPD % | Control Limits %R | Control Limits %RPD | Flag |
|---------------------------------|--------------------------|-----------------|--------------------------|----------------------|-----------------|------------------------------------|--------------------|-------|-------------------|---------------------|------|
| Chloride | 3.46 | 251 | 272 | 107 | 251 | 271 | 107 | 0 | 90-110 | 20 | |

Lab Batch ID: 3066079

QC- Sample ID: 601707-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 10/10/2018

Date Prepared: 10/10/2018

Analyst: ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Parent Sample Result [A] | Spike Added [B] | Spiked Sample Result [C] | Spiked Sample %R [D] | Spike Added [E] | Duplicate Spiked Sample Result [F] | Spiked Dup. %R [G] | RPD % | Control Limits %R | Control Limits %RPD | Flag |
|-----------------------------------|--------------------------|-----------------|--------------------------|----------------------|-----------------|------------------------------------|--------------------|-------|-------------------|---------------------|------|
| Gasoline Range Hydrocarbons (GRO) | 14.7 | 1000 | 956 | 94 | 998 | 985 | 97 | 3 | 70-135 | 20 | |
| Diesel Range Organics (DRO) | <8.13 | 1000 | 961 | 96 | 998 | 990 | 99 | 3 | 70-135 | 20 | |

Matrix Spike Percent Recovery $[D] = 100 \times (C-A)/B$
 Relative Percent Difference $RPD = 200 \times |(C-F)/(C+F)|$

Matrix Spike Duplicate Percent Recovery $[G] = 100 \times (F-A)/E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Analysis Request of Chain of Custody Record



Tetra Tech, Inc.

4000 N. Big Spring Street, Suite 401
Midland, Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

Page 1 of 1

[illegible]

ORIGINAL COPY

(Circle) HAND DELIVERED FEDEX UPS Tracking #



Client: Tetra Tech- Midland

Date/ Time Received: 10/10/2018 09:10:00 AM

Work Order #: 601870

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)? | 3.5 |
| #2 *Shipping container in good condition? | Yes |
| #3 *Samples received on ice? | Yes |
| #4 *Custody Seals intact on shipping container/ cooler? | N/A |
| #5 Custody Seals intact on sample bottles? | N/A |
| #6 *Custody Seals Signed and dated? | N/A |
| #7 *Chain of Custody present? | Yes |
| #8 Any missing/extra samples? | No |
| #9 Chain of Custody signed when relinquished/ received? | Yes |
| #10 Chain of Custody agrees with sample labels/matrix? | Yes |
| #11 Container label(s) legible and intact? | Yes |
| #12 Samples in proper container/ bottle? | Yes |
| #13 Samples properly preserved? | Yes |
| #14 Sample container(s) intact? | Yes |
| #15 Sufficient sample amount for indicated test(s)? | Yes |
| #16 All samples received within hold time? | Yes |
| #17 Subcontract of sample(s)? | N/A |
| #18 Water 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:

Brianna Teel

Date: 10/10/2018

Checklist reviewed by:

Jessica Kramer

Date: 10/10/2018

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 161676

CONDITIONS

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|--|--|
| Operator: COG PRODUCTION, LLC 600 W. Illinois Ave Midland, TX 79701 | OGRID: 217955 |
| | Action Number: 161676 |
| | Action Type: [IM-SD] Incident File Support Doc (ENV) (IM-BNF) |

CONDITIONS

| Created By | Condition | Condition Date |
|------------|-----------|----------------|
| bhall | None | 11/28/2022 |