



February 11, 2022

Bradford Billings
Hydrologist/E.Spec.A
District 2 Artesia
1220 South St. Francis Drive
Oil Conservation Division
Santa Fe, NM 87505

**Re: Release Characterization and Closure Request
ConocoPhillips
Heritage Concho
Loco Hills SWD Main Line Release
Unit Letter G, Section 24, Township 17 South, Range 30 East
Eddy County, New Mexico
Incident ID# nAB1514733807**

Mr. Billings:

Tetra Tech, Inc. (Tetra Tech) was contacted by ConocoPhillips to assess a Heritage Concho release and subsequent remedial actions taken at the Loco Hills SWD. The release footprint is located in Public Land Survey System (PLSS) Unit Letter G, Section 24, Township 17 South, Range 30 East, in Eddy County, New Mexico (Site). The approximate release point occurred at coordinates 32.822728°, -103.923387°, as shown on Figures 1 and 2.

BACKGROUND

According to the State of New Mexico Oil Conservation Division (NMOCD) C-141 Initial Report, the release was discovered on May 7, 2015. The C-141 reports that the release was caused while a power line construction crew striking and damaging a produced waterline while intending to install a pole. Approximately 190 barrels (bbls) of produced water, of which approximately 175 bbls of produced water. The impacted area was located in pastureland, and approximately 160 feet by 130 feet in area. The New Mexico Oil Conservation District (NMOCD) approved the initial C-141 on May 22, 2015 and subsequently assigned the release the Incident ID NAB1514733807. The initial C-141 form is included in Appendix A.

A second Incident ID (nAB1514727487) has also been identified as associated with this release. A review of the incident information and associated files available on the NMOCD Online Imaging system suggest that the second Incident ID is a duplicate made in error, and both Incident IDs are associated with the same release.

SITE CHARACTERIZATION

A site characterization was performed and no sinkholes, residences, schools, hospitals, institutions, churches, springs, private domestic water wells, playa lakes, stream bodies, wetlands, incorporated municipal boundaries, subsurface mines, or floodplains are located within the distances specified in 19.15.29 New Mexico Administrative Code (NMAC). The Site is in an area of low karst potential.

There are no water wells listed in the New Mexico Office of the State Engineer (NMOSE database located within approximately ½ mile (800 meters) of the site. According to data from two (2) water wells listed in the

Tetra Tech

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NMOSE database within approximately 4.66 miles (7,500 meters) of the site, the minimum depth to groundwater is 80 feet below ground surface (bgs). The site characterization data are presented in Appendix B.

REGULATORY FRAMEWORK

Based upon the release footprint and in accordance with Subsection E of 19.15.29.12 NMAC, per 19.15.29.11 NMAC, the site characterization data was used to determine recommended remedial action levels (RRALs) for benzene, toluene, ethylbenzene, and xylene (collectively referred to as BTEX), total petroleum hydrocarbons (TPH), and chlorides in soil.

Based on the site characterization, established depth to groundwater, and in accordance with Table I of 19.15.29.12 NMAC, the RRALs for the Site are as follows:

| Constituent | Site RRALs |
|-------------|--------------|
| Chloride | 10,000 mg/kg |
| TPH | 2,500 mg/kg |
| BTEX | 50 mg/kg |

Additionally, in accordance with the NMOCD guidance *Procedures for Implementation of the Spill Rule (19.15.29 NMAC)* (September 6, 2019), the following reclamation requirements for surface soils (0-4 ft bgs) outside of active oil and gas operations are as follows:

| Constituent | Reclamation Requirements |
|-------------|--------------------------|
| Chloride | 600 mg/kg |
| TPH | 100 mg/kg |
| BTEX | 50 mg/kg |

INITIAL RESPONSE ACTIVITIES AND WORK PLAN

Following the release, Concho utilized a hydrovac truck to uncover four additional lines, as well as the 8-inch SWD line that had been damaged. Three of the lines were owned by Frontier, which did not allow excavation within 15 feet of a buried pipeline.

Initial soil samples were collected on June 4, 2015 in order to assess the release extent. The results of the assessment and proposed remedial actions are documented in a Work Plan dated May 20, 2016. Due to the 'no-dig' requirements surrounding the Frontier lines and the release extent being in low-lying area with scarce vegetation, Concho requested that no excavation take place. Instead, Concho requested that long-term monitoring of the site be performed for the flushing of chlorides while also observing for revegetation of the site after seeding. Concho proposed seeding the Site in 2016 and perform monitoring activities in September 2016, May 2017, and June 2017. A copy of the May 20, 2016 Work Plan is included as Appendix C.

The NMOCD approved the Work Plan in an email dated July 22, 2016, with the following comments:

"Once chlorides have been flushed and plant growth reestablished, the OCD will request a second delineation at S1 and S2 for closure. If at the end of your monitoring phase, plant growth is not established and chlorides are still present at the surface, the OCD will require further remediation efforts."

The NMOCD correspondence is included as Appendix E.

ADDITIONAL SITE ASSESSMENT AND SAMPLING RESULTS

On March 19, 2019, following the end of the approved monitoring phase, Concho installed two hand auger borings (AH-1 and AH-2) in the initial sampling locations S1 and S2 to complete the second delineation per

the conditions of the approved Work Plan. A total of twelve (12) soil samples were sent to Xenco Laboratories in Midland, Texas to be analyzed for chlorides via EPA Method 300.0. A copy of the laboratory analytical report and chain-of-custody documentation are included in Appendix E.

The analytical results from the 2019 assessment activities are summarized in Table 1. The results associated with all analyzed samples were below the applicable Site reclamation requirements and remediation RRALs.

VISUAL SITE INSPECTION

Tetra Tech conducted a visual Site inspection on December 28, 2021 to observe the status of revegetation and obtain photographic documentation of current Site conditions. Based on observations made by Tetra Tech's field personnel and photographic evidence acquired during the site monitoring, vegetation has established in the former release Site. Figure 3 is attached as a reference to depict the area observed during Tetra Tech's site monitoring in December 2021.

Moderate asphaltic staining was observed during the December 2021 site visit, as shown in the photographic documentation presented in Appendix F. Considering that the May 2015 Concho release being addressed in this report was a produced water release, the asphaltic staining is considered unrelated. A NMOCD file search was conducted, along with an aerial imagery review, to identify the source of the observed asphaltic staining. Firstly, a review of aerial imagery from February 2014 revealed evidence of an apparent hydrocarbon release in the pasture immediately northwest of the May 2015 release extent. Imagery from February 2017 revealed further evidence of possible remedial actions taken at that Site. The historical aerial imagery is presented in Appendix G.

In a search of the NMOCD online file system for a reported incident that matches the observed hydrocarbon release, Tetra Tech identified an incident that occurred on November 21, 2015 from the Loco Hills SWD facility attributed to Apache Corporation (nAB1535242436; 2RP-3460). According to information included in a corrective action plan dated August 1, 2016, the Apache incident involved the release of 1,895 bbls of produced water and 25 bbls of oil into the same release area as the May 2015 Concho release. According to the NMOCD online files for the Apache release, remedial actions were taken at the Site in December 2016, though it remains an open incident.

Based on the site characterization, the impacted surface area of the release within pastureland meets the remediation standards of Table I of 19.15.29.12 NMAC. Laboratory analytical data indicates final chloride levels are below site reclamation limits and meet the requirements for 19.15.29.12 and 19.15.29.13 NMAC. Therefore, reclamation of the soils located at the release site associated with the May 2015 Loco Hills SWD Mainline Release are not required at this time.

CONCLUSION

Based on the results of the additional site assessment performed in accordance with NMOCD directives, ConocoPhillips considers the former release Site to meet the remediation standards of Table I of 19.15.29.12 NMAC. Laboratory analytical data indicates final chloride levels are below site reclamation limits and meet the requirements for 19.15.29.12 and 19.15.29.13 NMAC; therefore, no further action is necessary.

Release Characterization and Closure Request
February 11, 2022

ConocoPhillips

Based on the above, ConocoPhillips respectfully requests closure for this release. The final C-141 forms are enclosed in Appendix A. If you have any questions concerning the soil assessment activities for the Site, please call me at (512) 217-7254.

Sincerely,
Tetra Tech, Inc.

A handwritten signature in blue ink, appearing to read 'SAB', is positioned above the printed name of the sender.

Samantha K. Abbott, P.G.
Project Manager

cc:
Mr. Ike Tavarez, RMR – ConocoPhillips
Mr. Charles Beauvais, BU – ConocoPhillips

Release Characterization and Closure Request
February 11, 2022

ConocoPhillips

LIST OF ATTACHMENTS

Figures:

- Figure 1 – Overview Map
- Figure 2 – Topographic Map
- Figure 3 – Visual Assessment Area

Tables:

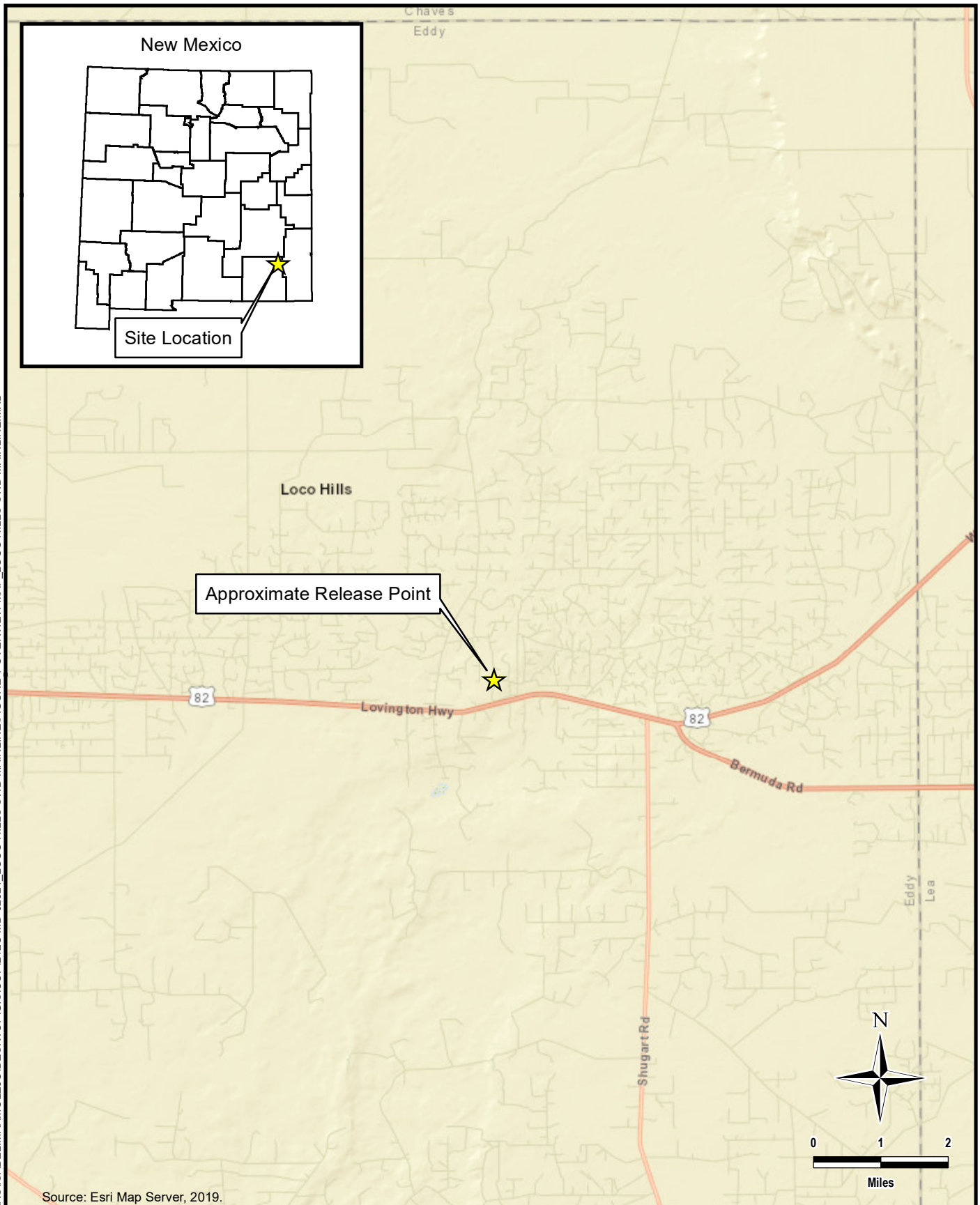
- Table 1 – Summary of Analytical Results – Additional Soil Assessment

Appendices:

- Appendix A – C-141 Forms
- Appendix B – Site Characterization Data
- Appendix C – Work Plan (May 20, 2016)
- Appendix D – NMOCD Correspondence
- Appendix E – Laboratory Analytical Data
- Appendix F – Photographic Documentation
- Appendix G – Historical Aerial Imagery

FIGURES

DOCUMENT PATH: C:\USERS\ISABEL.MARMOLEJO\DESKTOP\GIS\COPI2\2C-MD-02621_LOCO HILLS SWD MAINLINE\FIGURE 1 OVERVIEW MAP_LOCO HILLS SWD MAINLINE.MXD



TETRA TECH

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Fax: (432) 682-3946

CONOCOPHILLIPS

NAB1514733807
(32.822967°, -103.922597°)
EDDY COUNTY, NEW MEXICO

**LOCO HILLS SWD MAINLINE
OVERVIEW MAP**

PROJECT NO.: 212C-MD-02621

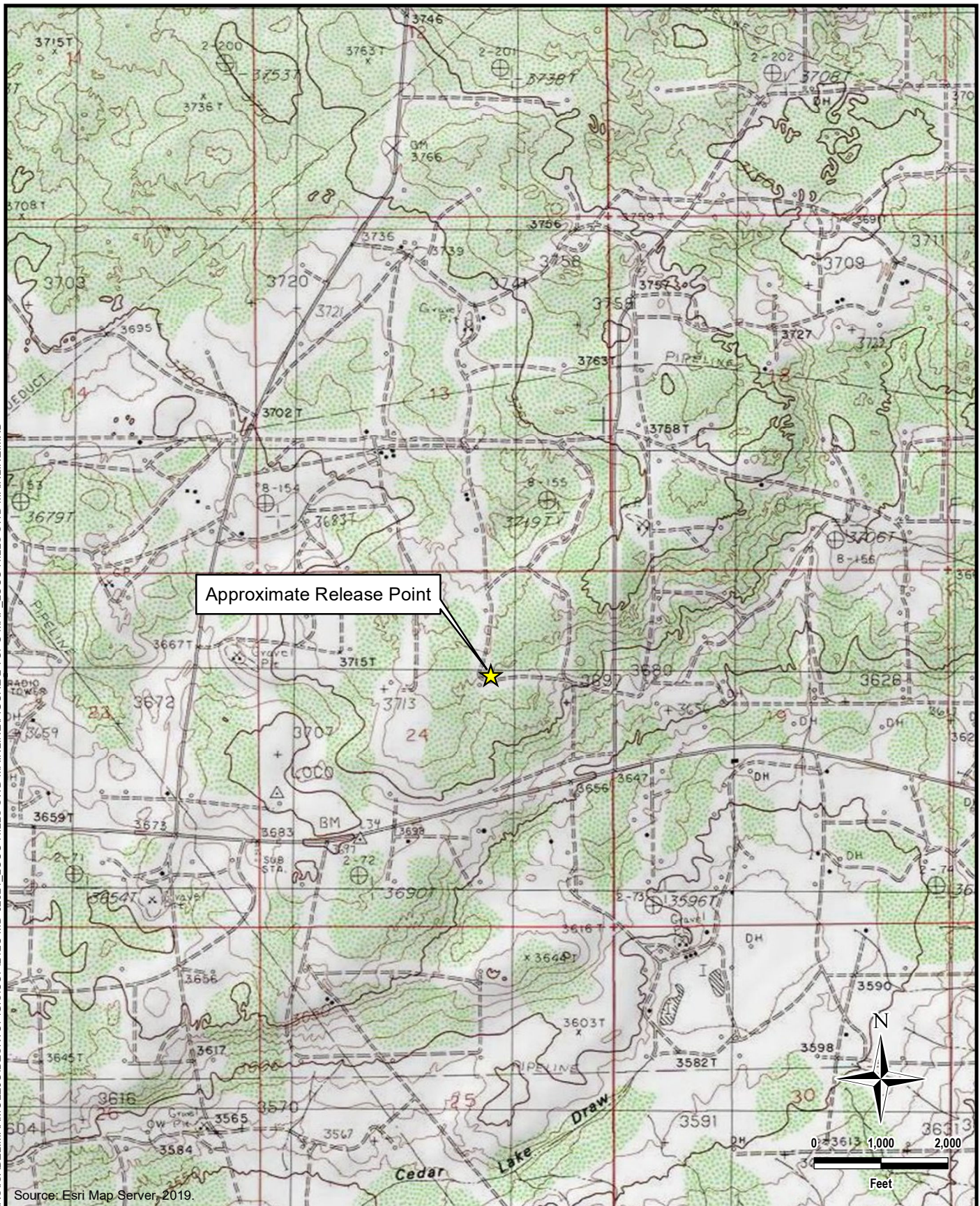
DATE: JANUARY 04, 2022

DESIGNED BY: IM

Figure No.

1

DOCUMENT PATH: C:\USERS\ISABEL.MARMOLEJO\DESKTOP\GIS\COPIES\212C-MD-02621 LOCO HILLS SWD MAINLINE\FIGURE 2 TOPO MAP LOCO HILLS SWD MAINLINE.MXD



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EDDY COUNTY, NEW MEXICO

**LOCO HILLS SWD MAINLINE
TOPOGRAPHIC MAP**

PROJECT NO.: 212C-MD-02621

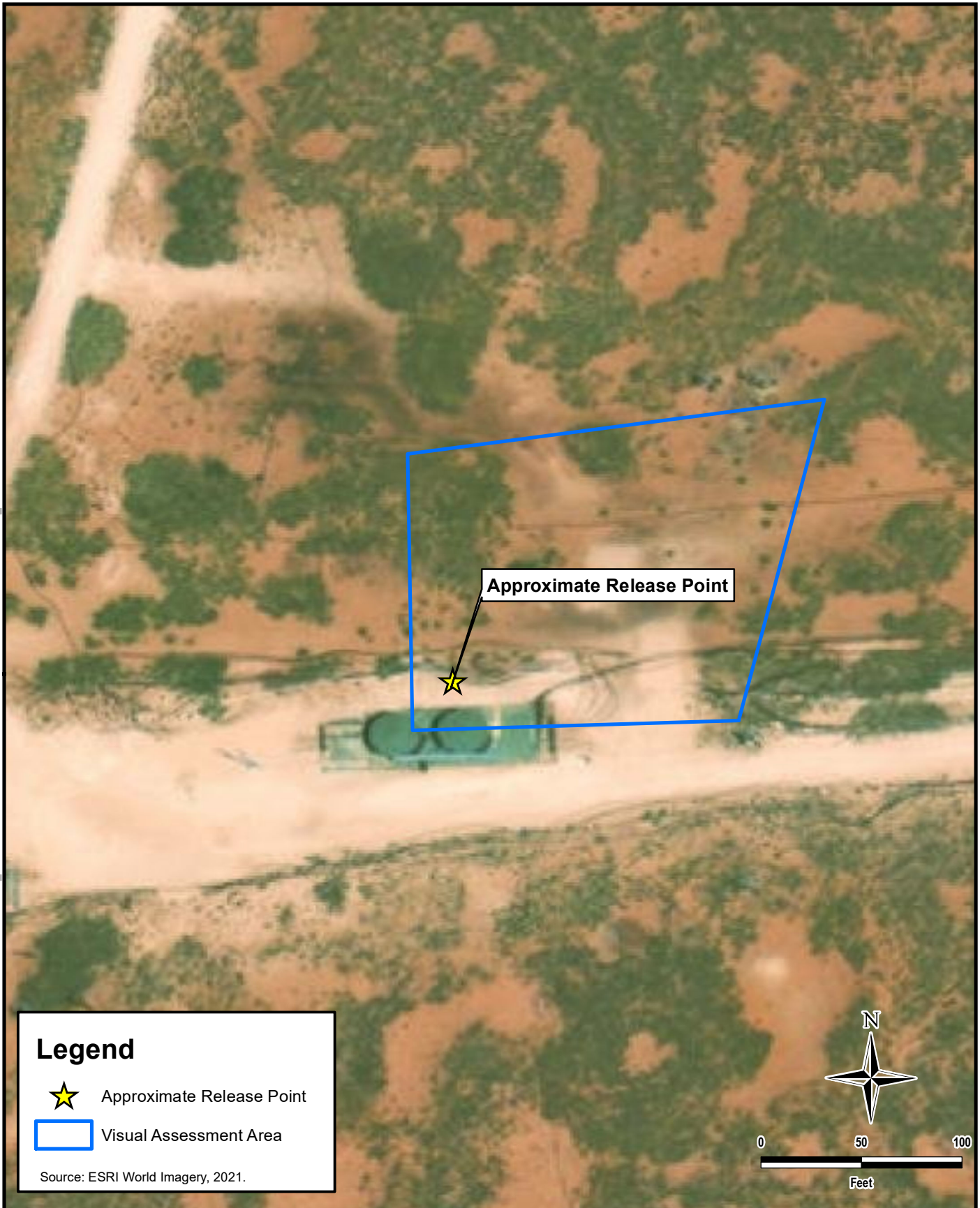
DATE: JANUARY 04, 2022

DESIGNED BY: IM

Figure No.

2

DOCUMENT PATH: C:\USERS\ISABEL.MARMOLEJO\DESKTOP\GIS\COP\212C-MD-02621_LOCO HILLS SWD MAINLINE\FIGURE 3 VISUAL ASSESSMENT AREA_LOCO HILLS SWD MAINLINE.MXD



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NAB1514733807
(32.822967°, -103.922597°)
EDDY COUNTY, NEW MEXICO

**LOCO HILLS SWD MAINLINE
VISUAL ASSESSMENT AREA**

PROJECT NO.: 212C-MD-02621

DATE: JANUARY 05, 2022

DESIGNED BY: IM

Figure No.

3

TABLE

TABLE 1
SUMMARY OF ANALYTICAL RESULTS
ADDITIONAL SOIL ASSESSMENT - 2RP-3010
HERITAGE CONCHO
LOCO HILLS SWD MAIN LINE RELEASE
EDDY COUNTY, NM

| Sample ID | Sample Date | Sample Depth | Chloride ¹ | |
|-----------|-------------|--------------|-----------------------|---|
| | | ft. bgs | mg/kg | Q |
| AH-1 | 3/19/2019 | 0-1 | 17.9 | |
| | | 1-1.5 | 116 | |
| | | 2-2.5 | 175 | |
| | | 3-3.5 | 293 | |
| | | 4-4.5 | 171 | |
| | | 5-5.5 | 157 | |
| AH-2 | 3/19/2019 | 0-1 | <5.01 | |
| | | 1-1.5 | <5.00 | |
| | | 2-2.5 | <4.98 | |
| | | 3-3.5 | 16.9 | |
| | | 4-4.5 | 323 | |
| | | 5-5.5 | 1,540 | |

NOTES:

ft. Feet

bgs Below ground surface

mg/kg Milligrams per kilogram

1 EPA Method 300.0

APPENDIX A

C-141 Forms

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

NM OIL CONSERVATION

ARTESIA DISTRICT

Form C-141

Revised August 8, 2011

MAY 21 2015

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

RECEIVED

Release Notification and Corrective Action

FAB1514733316
NAB1514733807

OPERATOR

☒ Initial Report ☐ Final Report

| | |
|---|----------------------------|
| Name of Company: COG Operating LLC 229137 | Contact: Robert McNeill |
| Address: 600 West Illinois Avenue, Midland TX 79701 | Telephone No. 432-230-0077 |
| Facility Name: Loco Hills SWD Mainline | Facility Type: SWD system |

| | | |
|------------------------|----------------|---------|
| Surface Owner: Federal | Mineral Owner: | API No. |
|------------------------|----------------|---------|

LOCATION OF RELEASE

| Unit Letter | Section | Township | Range | Feet from the | North/South Line | Feet from the | East/West Line | County |
|-------------|---------|----------|-------|---------------|------------------|---------------|----------------|--------|
| G | 24 | 17S | 30E | | | | | Eddy |

Latitude 32.8227282671883 Longitude 32.8227282671883 *103.423386846725
(e-mail)

NATURE OF RELEASE

| | | |
|--|--|---|
| Type of Release: Produced Water | Volume of Release: 190 bbls PW | Volume Recovered: 175 bbls PW |
| Source of Release: Pipeline | Date and Hour of Occurrence: 4:00 pm 5/7/2015 | Date and Hour of Discovery: 4:00 pm 5/7/2015 |
| Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required | If YES, To Whom? Mike Bratcher - NMOCD / Jim Amos - BLM | |
| By Whom? Amanda Trujillo | Date and Hour: 5/14/2015 6:12 pm *5/8/15 4:30pm | |
| Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | If YES, Volume Impacting the Watercourse. | |

If a Watercourse was Impacted, Describe Fully.*



Describe Cause of Problem and Remedial Action Taken.*

This release was caused while a power line construction crew was installing a line. The augered in to produced waterline while trying to set a pole. Vacuum trucks were called to recover all standing fluid.

Describe Area Affected and Cleanup Action Taken.*

The impacted area is approximately 160' x 130' in the pasture. Concho will have the spill site sampled to delineate any possible contamination from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation work.

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

| | | |
|--|---|----------------------|
| Signature:  | OIL CONSERVATION DIVISION | |
| Printed Name: Amanda Trujillo | Approved by Environmental Specialist:  | |
| Title: Senior Environmental Coordinator | Approval Date: 5/22/15 | Expiration Date: N/A |
| E-mail Address: atrujillo@concho.com | Conditions of Approval: Remediation per O.C.D. Rules & Guidelines Attached <input type="checkbox"/> | |
| Date: May 21, 2015 Phone: 575-748-6940 | SUBMIT REMEDIATION PROPOSAL NO. 5/28/15 | |

* Attach Additional Sheets If Necessary

LATER THAN: 5/28/15

2RP-3010

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

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

| | |
|---|--|
| What is the shallowest depth to groundwater beneath the area affected by the release? | _____ (ft bgs) |
| Did this release impact groundwater or surface water? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Are the lateral extents of the release within 1000 feet of any other fresh water well or spring? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Are the lateral extents of the release within 300 feet of a wetland? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Are the lateral extents of the release overlying a subsurface mine? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Are the lateral extents of the release overlying an unstable area such as karst geology? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Are the lateral extents of the release within a 100-year floodplain? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Did the release impact areas not on an exploration, development, production, or storage site? | <input type="checkbox"/> Yes <input type="checkbox"/> No |

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: *Each of the following items must be included in the report.*

- ☐ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- ☐ Field data
- ☐ Data table of soil contaminant concentration data
- ☐ Depth to water determination
- ☐ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
- ☐ Boring or excavation logs
- ☐ Photographs including date and GIS information
- ☐ Topographic/Aerial maps
- ☐ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

State of New Mexico
Oil Conservation Division

Page 4

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

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.

Printed Name: _____ Title: _____

Signature:  _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

| | |
|----------------|--|
| Incident ID | |
| District RP | |
| 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: _____ Title: _____

Signature:  Date: _____

email: _____ Telephone: _____

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: _____

Printed Name: _____ Title: _____

APPENDIX B

Site Characterization Data



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

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

(R=POD has been replaced, O=orphaned, C=the file is closed)

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

| POD Number | POD Sub-Code | basin | County | Q 64 | Q 16 | Q 4 | Sec | Tws | Rng | X | Y | Distance | Depth Well | Depth Water | Water Column |
|-------------------------------|--------------|-------|--------|------|------|-----|-----|-----|-----|--------|---------|----------|------------|-------------|--------------|
| RA 11590 POD4 | RA | ED | | 4 | 1 | 1 | 32 | 17S | 31E | 603308 | 3629253 | 3845 | 55 | | |
| RA 11590 POD3 | RA | ED | | 3 | 1 | 2 | 32 | 17S | 31E | 603932 | 3629260 | 4277 | 60 | | |
| RA 11590 POD1 | RA | ED | | 2 | 1 | 3 | 32 | 17S | 31E | 603315 | 3628545 | 4407 | 158 | | |
| RA 11914 POD1 | RA | ED | | 2 | 4 | 2 | 20 | 17S | 30E | 594801 | 3632002 | 5976 | 85 | 80 | 5 |
| L 14207 POD3 | L | LE | | 2 | 3 | 3 | 31 | 16S | 37E | 606117 | 3636977 | 7200 | 240 | 96 | 144 |

Average Depth to Water: **88 feet**

Minimum Depth: **80 feet**

Maximum Depth: **96 feet**

Record Count: 5

UTMNA83 Radius Search (in meters):

Easting (X): 600775.82

Northing (Y): 3632148.11

Radius: 7500

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

11/30/21 10:28 AM

Page 1 of 1

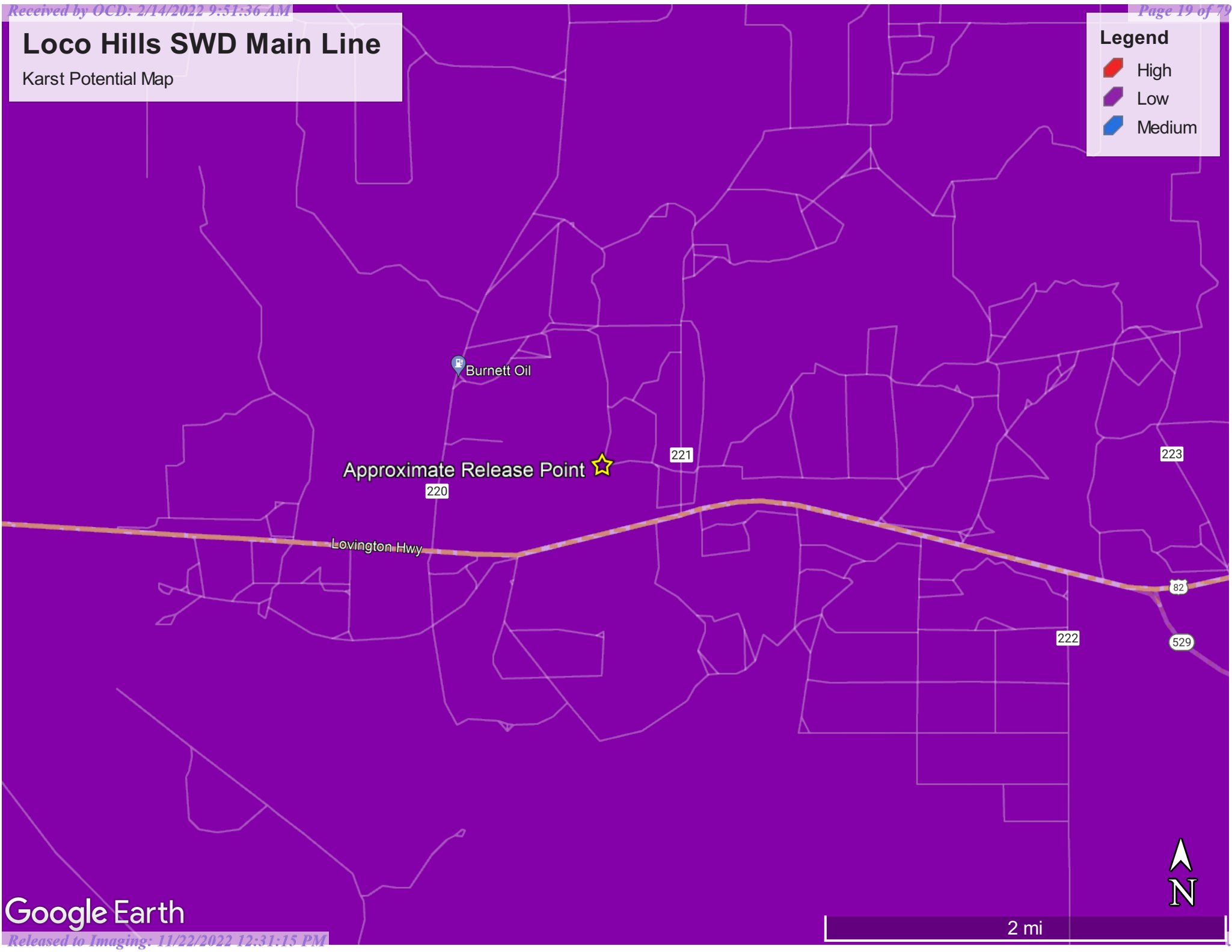
WATER COLUMN/ AVERAGE
DEPTH TO WATER

Loco Hills SWD Main Line

Karst Potential Map

Legend

- High
- Low
- Medium



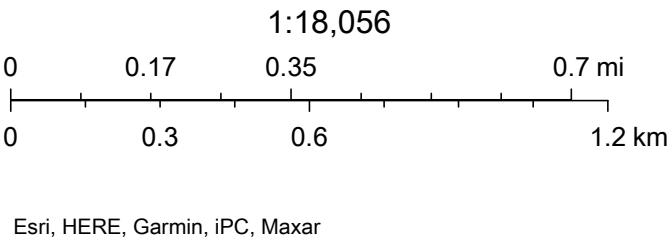
Google Earth

OCD Waterbodies



11/30/2021, 11:37:36 AM

- OSE Water-bodies
- PLJV Probable Playas
- OSE Streams



**APPENDIX C
Work Plan
(May 20, 2016)**



Amanda Trujillo
Senior Environmental Coordinator

May 20, 2016

Oil Conservation Division
District 2 – Artesia
811 S. First St.
Artesia, NM 88210

**Re: Loco Hills SWD Mainline
Sec. 24, T17S-R30E
Eddy County, NM**

Mr. Mike Bratcher,

COG Operating LLC would like to submit for your consideration the enclosed work plan for the above captioned well. The plan is in response to the C-141 Initial report dated May 21, 2015.

Background

The release was caused when A.R.C. Power-Line Construction drilled into COG's Loco Hills SWD Mainline while setting a power pole for an Apache Corporation Facility. An area measuring approximately 9340 square feet was impacted to the north of the Apache facility. A hydrovac crew was called into daylight buried lines. In addition to the 8" COG SWD line, 4 other lines belonging to Frontier and Burnett were discovered. Frontier will not allow excavation within 15' of a buried pipeline.

Groundwater

Based on the Chevron Trend Maps, the release area would be classified at a site ranking of Zero due to the depth of groundwater at approximately 350'. No well information could be found for Section 24.

Soil Assessment and Analytical Results

Initial soil samples were taken on 6/4/2015. Soil texture is classified as fine sand per NRCS Soil Survey. Samples indicated TPH and BTEX were within RRALs for site ranking zero. Chloride concentrations are within tolerable limits for surface reclamation. (see attached site diagram)

CORPORATE ADDRESS
One Concho Center | 600 West Illinois Avenue | Midland, Texas 79701
PHONE 432.683.7443 | FAX 432.683.7441

LOCAL ADDRESS
Concho West | 2208 Main Street | Artesia, New Mexico 88210
PHONE 575.748.6940 | FAX 575.746.2096

NMOCD
May 20, 2016
Page 2

Site Ranking: Zero

Depth to GW per Trend Map: 350'

| S1 | DRO | GRO | TPH | BTEX | Cl- |
|--|--------|--------|--------|--------|-------|
| 1' | < 10.0 | < 10.0 | < 10.0 | <0.300 | <16.0 |
| 3' | < 10.0 | < 10.0 | < 10.0 | <0.300 | 4240 |
| 4' | < 10.0 | < 10.0 | < 10.0 | <0.300 | 5200 |
| 5' | | | | | 1200 |
| 6' | | | | | 768 |
| 7' | | | | | 1090 |
| 8' | | | | | 656 |
| S2 | DRO | GRO | TPH | BTEX | Cl- |
| 1' | 142 | < 10.0 | 142 | <0.300 | 1300 |
| 2' | 101 | < 10.0 | 101 | <0.300 | 368 |
| 3' | 81.9 | < 10.0 | 81.9 | <0.300 | 976 |
| 4' | | | | | 3680 |
| 6' | | | | | 1720 |
| 7' | | | | | 2200 |
| 8' | | | | | 544 |
| Bold values exceed RRLs per NMOCD Guidelines (1993) | | | | | |

Work Plan

This location has 5 buried lines in a low lying area amongst scarce vegetation consistent with the surrounding dunal complex. Ground water is at a depth greater than 350' per the Chevron Trend Maps. COG proposes that no excavation take place, but monitor the area in an effort to achieve long term vegetative growth. Seeding would be completed in June of 2016 with BLM Seed Mixture #4 and LPC. If weed free organic matter is available it will be added to the soil and a stabilizing amendment. The site will be inspected in September 2016, May 2017 and June 2017 monitoring of vegetative growth.

If there are no objections or further stipulations, COG Operating LLC would like to begin the remediation process based on approval of this work plan. Please feel free to contact my with any questions or concerns at (505) 350-1336

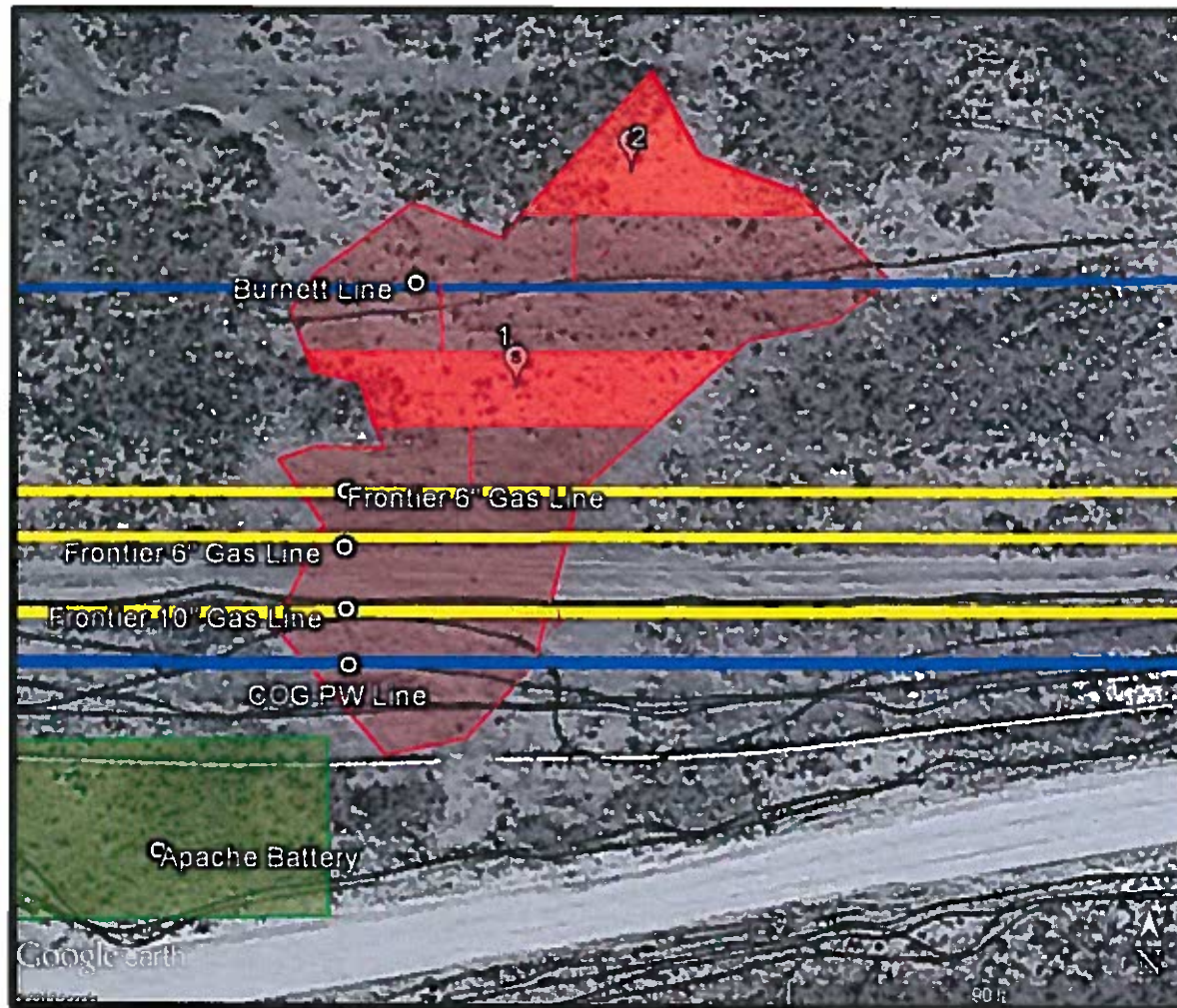
Sincerely,



Amanda Trujillo Davis
Senior Environmental Coordinator

Enclosed:

Site Diagram and Summary Table
Laboratory Analysis



Site Ranking: Zero

Depth to GW per Trend Map: 350'

| S1 | DRO | GRO | TPH | BTEX | CI- |
|----|--------|--------|--------|--------|-------|
| 1' | < 10.0 | < 10.0 | < 10.0 | <0.300 | <16.0 |
| 3' | < 10.0 | < 10.0 | < 10.0 | <0.300 | 4240 |
| 4' | < 10.0 | < 10.0 | < 10.0 | <0.300 | 5200 |
| 5' | | | | | 1200 |
| 6' | | | | | 768 |
| 7' | | | | | 1090 |
| 8' | | | | | 656 |
| S2 | DRO | GRO | TPH | BTEX | CI- |
| 1' | 142 | < 10.0 | 142 | <0.300 | 1300 |
| 2' | 101 | < 10.0 | 101 | <0.300 | 368 |
| 3' | 81.9 | < 10.0 | 81.9 | <0.300 | 976 |
| 4' | | | | | 3680 |
| 6' | | | | | 1720 |
| 7' | | | | | 2200 |
| 8' | | | | | 544 |

Bold values exceed RRALs per NMOCD Guidelines (1993)



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

June 12, 2015

AMANDA TRUJILLO

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: LOCO HILLS SWD MAINLINE

Enclosed are the results of analyses for samples received by the laboratory on 06/08/15 10:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

COG OPERATING
AMANDA TRUJILLO
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received: 06/08/2015
Reported: 06/12/2015
Project Name: LOCO HILLS SWD MAINLINE
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 06/04/2015
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: S2 4' (H501464-01)

| Chloride, SM4500CI-B | | mg/kg | | Analyzed By: AP | | | | | |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| Chloride | 3680 | 16.0 | 06/11/2015 | ND | 416 | 104 | 400 | 3.92 | |

Sample ID: S2 6' (H501464-02)

| Chloride, SM4500CI-B | | mg/kg | | Analyzed By: AP | | | | | |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| Chloride | 1720 | 16.0 | 06/11/2015 | ND | 416 | 104 | 400 | 3.92 | |

Sample ID: S2 7' (H501464-03)

| Chloride, SM4500CI-B | | mg/kg | | Analyzed By: AP | | | | | |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| Chloride | 2200 | 16.0 | 06/11/2015 | ND | 416 | 104 | 400 | 3.92 | |

Sample ID: S2 8' (H501464-04)

| Chloride, SM4500CI-B | | mg/kg | | Analyzed By: AP | | | | | |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| Chloride | 544 | 16.0 | 06/11/2015 | ND | 416 | 104 | 400 | 3.92 | |

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* = Accredited Analyte

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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 |

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 28 of 79



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June 12, 2015

AMANDA TRUJILLO

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: LOCO HILLS SWD MAINLINE

Enclosed are the results of analyses for samples received by the laboratory on 06/08/15 10:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

COG OPERATING
 AMANDA TRUJILLO
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received: 06/08/2015
 Reported: 06/12/2015
 Project Name: LOCO HILLS SWD MAINLINE
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 06/04/2015
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: S1 5' (H501463-01)

| Chloride, SM4500CI-B | | mg/kg | | Analyzed By: AP | | | | | |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| Chloride | 1200 | 16.0 | 06/11/2015 | ND | 416 | 104 | 400 | 3.92 | |

Sample ID: S1 6' (H501463-02)

| Chloride, SM4500CI-B | | mg/kg | | Analyzed By: AP | | | | | |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| Chloride | 768 | 16.0 | 06/11/2015 | ND | 416 | 104 | 400 | 3.92 | |

Sample ID: S1 7' (H501463-03)

| Chloride, SM4500CI-B | | mg/kg | | Analyzed By: AP | | | | | |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| Chloride | 1090 | 16.0 | 06/11/2015 | ND | 416 | 104 | 400 | 3.92 | |

Sample ID: S1 8' (H501463-04)

| Chloride, SM4500CI-B | | mg/kg | | Analyzed By: AP | | | | | |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| Chloride | 656 | 16.0 | 06/11/2015 | ND | 416 | 104 | 400 | 3.92 | |

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

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

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Celey D. Keene, Lab Director/Quality Manager



Released to Imaging: 11/22/2022 12:31:15 PM

Page 4 of 4

Received by OCD: 2/14/2022 9:51:36 AM



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

June 09, 2015

AMANDA TRUJILLO

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: LOCO HILLS SWD MAINLINE

Enclosed are the results of analyses for samples received by the laboratory on 06/08/15 10:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

| | |
|------------------|------------------------------|
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| 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
AMANDA TRUJILLO
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received: 06/08/2015
Reported: 06/09/2015
Project Name: LOCO HILLS SWD MAINLINE
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 06/04/2015
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: S1 1' (H501462-01)**BTEX 8021B mg/kg Analyzed By: MS**

| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
|----------------|--------|-----------------|------------|--------------|------|------------|---------------|-------|-----------|
| Benzene* | <0.050 | 0.050 | 06/08/2015 | ND | 2.37 | 119 | 2.00 | 0.939 | |
| Toluene* | <0.050 | 0.050 | 06/08/2015 | ND | 2.15 | 107 | 2.00 | 1.69 | |
| Ethylbenzene* | <0.050 | 0.050 | 06/08/2015 | ND | 2.04 | 102 | 2.00 | 1.16 | |
| Total Xylenes* | <0.150 | 0.150 | 06/08/2015 | ND | 5.97 | 99.4 | 6.00 | 1.66 | |
| Total BTEX | <0.300 | 0.300 | 06/08/2015 | ND | | | | | |

*Surrogate 4-Bromofluorobenzene (PIE) 110 % 61-154***Chloride, SM4500Cl-B mg/kg Analyzed By: AP**

| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
|----------|--------|-----------------|------------|--------------|-----|------------|---------------|------|-----------|
| Chloride | <16.0 | 16.0 | 06/09/2015 | ND | 416 | 104 | 400 | 3.77 | |

TPH 8015M mg/kg Analyzed By: MS

| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
|--------------|--------|-----------------|------------|--------------|-----|------------|---------------|------|-----------|
| GRO C6-C10 | <10.0 | 10.0 | 06/08/2015 | ND | 184 | 92.1 | 200 | 1.44 | |
| DRO >C10-C28 | <10.0 | 10.0 | 06/08/2015 | ND | 182 | 91.2 | 200 | 1.62 | |

*Surrogate 1-Chlorooctane 89.8 % 47.2-157**Surrogate 1-Chlorooctadecane 96.3 % 52.1-176***Cardinal Laboratories**

* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

COG OPERATING
AMANDA TRUJILLO
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received: 06/08/2015
Reported: 06/09/2015
Project Name: LOCO HILLS SWD MAINLINE
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 06/04/2015
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: S1 3' (H501462-02)

| BTEX 8021B | | mg/kg | | Analyzed By: MS | | | | | |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|-------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| Benzene* | <0.050 | 0.050 | 06/08/2015 | ND | 2.37 | 119 | 2.00 | 0.939 | |
| Toluene* | <0.050 | 0.050 | 06/08/2015 | ND | 2.15 | 107 | 2.00 | 1.69 | |
| Ethylbenzene* | <0.050 | 0.050 | 06/08/2015 | ND | 2.04 | 102 | 2.00 | 1.16 | |
| Total Xylenes* | <0.150 | 0.150 | 06/08/2015 | ND | 5.97 | 99.4 | 6.00 | 1.66 | |
| Total BTEX | <0.300 | 0.300 | 06/08/2015 | ND | | | | | |

Surrogate: 4-Bromofluorobenzene (PIC) 110 % 61-154

| Chloride, SM4500Cl-B | | mg/kg | | Analyzed By: AP | | | | | |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| Chloride | 4240 | 16.0 | 06/09/2015 | ND | 416 | 104 | 400 | 3.77 | |

| TPH 8015M | | mg/kg | | Analyzed By: MS | | | | | |
|--------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| GRO C6-C10 | <10.0 | 10.0 | 06/08/2015 | ND | 184 | 92.1 | 200 | 1.44 | |
| DRO >C10-C28 | <10.0 | 10.0 | 06/08/2015 | ND | 182 | 91.2 | 200 | 1.62 | |

Surrogate: 1-Chlorooctane 86.5 % 47.2-157

Surrogate: 1-Chlorooctadecane 91.9 % 52.1-176

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* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

COG OPERATING
AMANDA TRUJILLO
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received: 06/08/2015
Reported: 06/09/2015
Project Name: LOCO HILLS SWD MAINLINE
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 06/04/2015
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: S1 4' (H501462-03)

| BTEX 8021B | | mg/kg | | Analyzed By: MS | | | | | |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|-------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| Benzene* | <0.050 | 0.050 | 06/08/2015 | ND | 2.37 | 119 | 2.00 | 0.939 | |
| Toluene* | <0.050 | 0.050 | 06/08/2015 | ND | 2.15 | 107 | 2.00 | 1.69 | |
| Ethylbenzene* | <0.050 | 0.050 | 06/08/2015 | ND | 2.04 | 102 | 2.00 | 1.16 | |
| Total Xylenes* | <0.150 | 0.150 | 06/08/2015 | ND | 5.97 | 99.4 | 6.00 | 1.66 | |
| Total BTEX | <0.300 | 0.300 | 06/08/2015 | ND | | | | | |

Surrogate 4-Bromofluorobenzene (PIL) 111 % 61-154

| Chloride, SM4500Cl-B | | mg/kg | | Analyzed By: AP | | | | | |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| Chloride | 5200 | 16.0 | 06/09/2015 | ND | 416 | 104 | 400 | 3.77 | |

| TPH 8015M | | mg/kg | | Analyzed By: MS | | | | | |
|--------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| GRO C6-C10 | <10.0 | 10.0 | 06/08/2015 | ND | 184 | 92.1 | 200 | 1.44 | |
| DRO >C10-C28 | <10.0 | 10.0 | 06/08/2015 | ND | 182 | 91.2 | 200 | 1.62 | |

Surrogate 1-Chlorooctane 84.3 % 47.2-157

Surrogate 1-Chlorooctadecane 87.8 % 52.1-176

Cardinal Laboratories

* = Accredited Analyte

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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
AMANDA TRUJILLO
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received: 06/08/2015
Reported: 06/09/2015
Project Name: LOCO HILLS SWD MAINLINE
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 06/04/2015
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: S2 1' (H501462-04)

| BTEX 80218 | | | mg/kg | | Analyzed By: MS | | | | |
|----------------|--------|-----------------|------------|--------------|-----------------|------------|---------------|-------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| Benzene* | <0.050 | 0.050 | 06/09/2015 | ND | 2.37 | 119 | 2.00 | 0.939 | |
| Toluene* | <0.050 | 0.050 | 06/09/2015 | ND | 2.15 | 107 | 2.00 | 1.69 | |
| Ethylbenzene* | <0.050 | 0.050 | 06/09/2015 | ND | 2.04 | 102 | 2.00 | 1.16 | |
| Total Xylenes* | <0.150 | 0.150 | 06/09/2015 | ND | 5.97 | 99.4 | 6.00 | 1.66 | |
| Total BTEX | <0.300 | 0.300 | 06/09/2015 | ND | | | | | |

Surrogate: 4-Bromofluorobenzene (PIL) 106 % 61-154

| Chloride, SM4500CI-B | | | mg/kg | | Analyzed By: AP | | | | |
|----------------------|--------|-----------------|------------|--------------|-----------------|------------|---------------|------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| Chloride | 1300 | 16.0 | 06/09/2015 | ND | 416 | 104 | 400 | 3.77 | |

| TPH 8015M | | | mg/kg | | Analyzed By: MS | | | | |
|--------------|--------|-----------------|------------|--------------|-----------------|------------|---------------|------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| GRO C6-C10 | <10.0 | 10.0 | 06/08/2015 | ND | 184 | 92.1 | 200 | 1.44 | |
| DRO >C10-C28 | 142 | 10.0 | 06/08/2015 | ND | 182 | 91.2 | 200 | 1.62 | |

Surrogate: 1-Chlorooctane 84.4 % 47.2-157

Surrogate: 1-Chlorooctadecane 104 % 52.1-176

Cardinal Laboratories

* = Accredited Analyte

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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
AMANDA TRUJILLO
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received: 06/08/2015
Reported: 06/09/2015
Project Name: LOCO HILLS SWD MAINLINE
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 06/04/2015
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: S2 2' (H501462-05)

| BTEX 8021B | | mg/kg | | Analyzed By: MS | | | | | |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|-------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| Benzene* | <0.050 | 0.050 | 06/09/2015 | ND | 2.37 | 119 | 2.00 | 0.939 | |
| Toluene* | <0.050 | 0.050 | 06/09/2015 | ND | 2.15 | 107 | 2.00 | 1.69 | |
| Ethylbenzene* | <0.050 | 0.050 | 06/09/2015 | ND | 2.04 | 102 | 2.00 | 1.16 | |
| Total Xylenes* | <0.150 | 0.150 | 06/09/2015 | ND | 5.97 | 99.4 | 6.00 | 1.66 | |
| Total BTEX | <0.300 | 0.300 | 06/09/2015 | ND | | | | | |

Surrogate: 4-Bromofluorobenzene (PIC) 107 % 61-154

| Chloride, SM4500Cl-B | | mg/kg | | Analyzed By: AP | | | | | |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| Chloride | 368 | 16.0 | 06/09/2015 | ND | 416 | 104 | 400 | 3.77 | |

| TPH 8015M | | mg/kg | | Analyzed By: MS | | | | | |
|--------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| GRO C6-C10 | <10.0 | 10.0 | 06/08/2015 | ND | 184 | 92.1 | 200 | 1.44 | |
| DRO >C10-C28 | 101 | 10.0 | 06/08/2015 | ND | 182 | 91.2 | 200 | 1.62 | |

Surrogate: 1-Chlorooctane 89.0 % 47.2-157

Surrogate: 1-Chlorooctadecane 106 % 52.1-176

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* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

COG OPERATING
AMANDA TRUJILLO
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received: 06/08/2015
Reported: 06/09/2015
Project Name: LOCO HILLS SWD MAINLINE
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 06/04/2015
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: S2 3' (H501462-06)

| BTX 8021B | | mg/kg | | Analyzed By: MS | | | | | |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|-------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| Benzene* | <0.050 | 0.050 | 06/09/2015 | ND | 2.37 | 119 | 2.00 | 0.939 | |
| Toluene* | <0.050 | 0.050 | 06/09/2015 | ND | 2.15 | 107 | 2.00 | 1.69 | |
| Ethylbenzene* | <0.050 | 0.050 | 06/09/2015 | ND | 2.04 | 102 | 2.00 | 1.16 | |
| Total Xylenes* | <0.150 | 0.150 | 06/09/2015 | ND | 5.97 | 99.4 | 6.00 | 1.66 | |
| Total BTX | <0.300 | 0.300 | 06/09/2015 | ND | | | | | |

Surrogate: 4-Bromofluorobenzene (PIC) 106 % 61-154

| Chloride, SM4500Cl-B | | mg/kg | | Analyzed By: AP | | | | | |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| Chloride | 976 | 16.0 | 06/09/2015 | ND | 416 | 104 | 400 | 3.77 | |

| TPH 8015M | | mg/kg | | Analyzed By: MS | | | | | |
|--------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| GRO C6-C10 | <10.0 | 10.0 | 06/08/2015 | ND | 184 | 92.1 | 200 | 1.44 | |
| DRO >C10-C28 | 81.9 | 10.0 | 06/08/2015 | ND | 182 | 91.2 | 200 | 1.62 | |

Surrogate: 1-Chlorooctane 81.8 % 47.2-157

Surrogate: 1-Chlorooctadecane 94.2 % 52.1-176

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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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Celey D. Keene, Lab Director/Quality Manager

(675) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|----------------|--|------------------|--|------------|--|-------------|--|------------|--|------------|--|------------------|--|------------|--|------------|--|------------|--|------------|--|------------|--|------------|--|------------|--|------------|--|------------|--|-----|--|--|--|--|--|--|--|--|--|--|--|
| Company Name: COG Operating LLC | | P.O. #: | | BILL TO | | | | | | | | | | ANALYSIS REQUEST | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Project Manager: Amanda Taylor | | City: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Address: | | State: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| City: | | Zip: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Phone #: | | Fax #: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Project #: | | Project Owner: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Project Name: Loos Hills Sub Mainline | | City: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Project Location: | | State: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Phone #: | | Zip: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fax #: | | Phone #: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Name: Amanda Taylor | | Fax #: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FOR LAB USE ONLY | | Matrix | | PRESERV | | SAMPLING | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lab I.D. | | Sample I.D. | | (G)RAB OR (C)OMP | | CONTAINERS | | GROUNDWATER | | WASTEWATER | | SOIL | | OIL | | SLUDGE | | OTHER: | | ACID/BASE | | ICE / COOL | | OTHER: | | DATE | | TIME | | TPH | | BTEX | | CI- | | | | | | | | | | | |
| H501462 | | 51-34-3 | | XXX | | --- | | XXX | | XXX | | XXX | | --- | | --- | | --- | | --- | | --- | | --- | | --- | | --- | | --- | | --- | | | | | | | | | | | | | |
| 23550 | | 51-34-3 | | XXX | | --- | | XXX | | XXX | | XXX | | --- | | --- | | --- | | --- | | --- | | --- | | --- | | --- | | --- | | --- | | | | | | | | | | | | | |
| 23550 | | 51-34-3 | | XXX | | --- | | XXX | | XXX | | XXX | | --- | | --- | | --- | | --- | | --- | | --- | | --- | | --- | | --- | | --- | | | | | | | | | | | | | |

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Relinquished By: **[Signature]** Date: **6/18/15** Received By: **[Signature]** Date: **6/18/15**

Relinquished By: **[Signature]** Date: **6/18/15** Received By: **[Signature]** Date: **6/18/15**

Delivered By: (Circle One) **1c** Sample Condition: **Cool Intact** Checked By: **[Signature]**

Sampler - UPS - Bus - Other: **1c** Phone Result: ☐ Yes ☐ No Add'l Phone #: **205 411 1111**

REMARKS: **205 411 1111**

APPENDIX D

NMOCD Correspondence

From: Patterson, Heather, EMNRD
To: ["Tucker, Shelly"; Amanda Trujillo Davis](#)
Cc: [Robert McNeill](#); [Bratcher, Mike, EMNRD](#); [Bayliss, Randolph, EMNRD](#)
Subject: RE: (Work Plan) Loco Hills SWD Mainline System
Date: Friday, July 22, 2016 10:07:00 AM
Attachments: image001.png

RE: COG * Loco Hills SWD Mainline * fAB1514733316 * 2RP-3010

Amanda,

The OCD concurs with BLM approval of this work plan. Once chlorides have been flushed and plant growth reestablished, the OCD will request a second delineation at S1 and S2 for closure. If at the end of your monitoring phase, plant growth is not established and chlorides are still present at the surface, the OCD will require further remediation efforts.

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

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

Heather Patterson
Environmental Specialist
NMOCD District II
Office (575)748-1283 ext.101
Cell (575)703-0228

From: Tucker, Shelly [mailto:stucker@blm.gov]
Sent: Wednesday, July 13, 2016 10:16 AM
To: Amanda Trujillo Davis
Cc: Patterson, Heather, EMNRD; Robert McNeill
Subject: Re: (Work Plan) Loco Hills SWD Mainline System

BLM accepts/approves your submitted work plan.

If you have any questions or concerns, please do not hesitate to contact me.

Sincerely,

Shelly J Tucker
Environmental Protection Specialist
Bureau of Land Management

620 E. Greene St
Carlsbad, NM 88220

575.234.5905 - Direct
575.361.0084 - Cellular

stucker@blm.gov



The **BLM acceptance/approval does not** relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that may pose a threat to groundwater, surface water, human health or the environment or if the location fails to reclaim properly. In such an event that the location does not revegetate, or future issues with contaminants are encountered, the operator will be asked to address the issues until the contaminant issues are fully mitigated and the location is successfully reclaimed. In addition, BLM approval does not relieve the operator of responsibility for compliance with any other federal, state or local laws/regulations.

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On Mon, May 23, 2016 at 4:04 PM, Amanda Trujillo Davis <ATrujillo@concho.com> wrote:

Ms. Patterson/Ms. Tucker,

Attached is a work plan for your consideration. Please let me know if there are any changes you would like to make.

Thank you,

Amanda Trujillo Davis
Senior Environmental Coordinator
COG Operating LLC
Cell: 505.350.1336
Office: 575.748.6930
atrujillo@concho.com

1401 Commerce Drive
Carlsbad, NM 88220



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From: Amanda Trujillo
Sent: Thursday, May 21, 2015 11:28 AM
To: 'Mike Bratcher'; 'Patterson, Heather, EMNRD'; 'James Amos'; 'Jeff Robertson'
Subject: (C-141 Initial) Loco Hills SWD Mainline System

Mr. Bratcher/Mr. Amos,

Attached is a C-141 for your consideration. Please feel free to call me if you have any questions or concerns.

Thank you,

Amanda Trujillo
Senior Environmental Coordinator
COG Operating LLC
Cell: 505.350.1336
Office: 575.748.6930
atrujillo@concho.com

2407 Pecos Ave.
Artesia , NM 88210



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From: Amanda Trujillo
Sent: Friday, May 08, 2015 4:30 PM
To: 'Mike Bratcher'; 'Patterson, Heather, EMNRD'; 'James Amos'; 'Jeff Robertson'
Subject: (Notification) Loco Hills SWD Mainline System

Mr. Bratcher/Mr. Amos,

COG Operating LLC is reporting a release on the Apache Crow Pump Station
Unit G Section 24, Township 17S Range 30E
Lat/Long: 32.8227282671883,-103.923386846725
The release occurred at 4:00 pm on 5/7/2015
Released: 190 bbls Produced Water
Recovered: 175 bbls Produced Water

The release was caused when a power line construction crew bore into waterline. The area is being evaluated and a C-141 will be submitted. If you have any additional questions please

feel free to contact me.

Thank you,

Amanda Trujillo

Senior Environmental Coordinator

COG Operating LLC

Cell: 505.350.1336

Office: 575.748.6930

atrujillo@concho.com

2208 W. Main St.

Artesia , NM 88210



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APPENDIX E

Laboratory Analytical Data



Certificate of Analysis Summary 618652

COG Operating LLC, Artesia, NM

Project Name: Loco Hills SWD Mainline (5-7-15) 2RP-3010



Project Id:

Contact: Ike Tavarez

Project Location: Eddy County, NM

Date Received in Lab: Fri Mar-22-19 03:12 pm

Report Date: 26-MAR-19

Project Manager: Brandi Ritcherson

| <i>Analysis Requested</i> | <i>Lab Id:</i> | 618652-001 | 618652-002 | 618652-003 | 618652-004 | 618652-005 | 618652-006 |
|----------------------------|-------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| | <i>Field Id:</i> | AH-1 0-1' | AH-1 1.5' | AH-1 2.5' | AH-1 3.5' | AH-1 4.5' | AH-1 5.5' |
| | <i>Depth:</i> | | | | | | |
| | <i>Matrix:</i> | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| | <i>Sampled:</i> | Mar-19-19 00:00 | Mar-19-19 00:00 | Mar-19-19 00:00 | Mar-19-19 00:00 | Mar-19-19 00:00 | Mar-19-19 00:00 |
| Chloride by EPA 300 | <i>Extracted:</i> | Mar-23-19 19:35 | Mar-23-19 19:35 | Mar-23-19 19:35 | Mar-23-19 19:35 | Mar-23-19 19:35 | Mar-23-19 19:35 |
| | <i>Analyzed:</i> | Mar-24-19 01:34 | Mar-24-19 01:41 | Mar-24-19 02:01 | Mar-24-19 02:07 | Mar-24-19 02:28 | Mar-24-19 02:34 |
| | <i>Units/RL:</i> | mg/kg RL | mg/kg RL | mg/kg RL | mg/kg RL | mg/kg RL | mg/kg RL |
| Chloride | | 17.9 5.02 | 116 5.00 | 175 5.03 | 293 5.04 | 171 5.04 | 157 5.04 |

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 - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Brandi Ritcherson
Project Manager



Certificate of Analysis Summary 618652

COG Operating LLC, Artesia, NM

Project Name: Loco Hills SWD Mainline (5-7-15) 2RP-3010



Project Id:

Contact: Ike Tavarez

Project Location: Eddy County, NM

Date Received in Lab: Fri Mar-22-19 03:12 pm

Report Date: 26-MAR-19

Project Manager: Brandi Ritcherson

| <i>Analysis Requested</i> | <i>Lab Id:</i> | 618652-007 | 618652-008 | 618652-009 | 618652-010 | 618652-011 | 618652-012 |
|---------------------------|-------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| | <i>Field Id:</i> | AH-2 0-1' | AH-2 1.5' | AH-2 2.5' | AH-2 3.5' | AH-2 4.5' | AH-2 5.5' |
| | <i>Depth:</i> | | | | | | |
| | <i>Matrix:</i> | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| | <i>Sampled:</i> | Mar-19-19 00:00 | Mar-19-19 00:00 | Mar-19-19 00:00 | Mar-19-19 00:00 | Mar-19-19 00:00 | Mar-19-19 00:00 |
| Chloride by EPA 300 | <i>Extracted:</i> | Mar-23-19 19:35 | Mar-23-19 19:35 | Mar-23-19 19:35 | Mar-23-19 19:35 | Mar-23-19 19:35 | Mar-23-19 17:00 |
| | <i>Analyzed:</i> | Mar-24-19 02:41 | Mar-24-19 02:48 | Mar-24-19 02:54 | Mar-24-19 03:01 | Mar-24-19 03:07 | Mar-23-19 22:48 |
| | <i>Units/RL:</i> | mg/kg RL | mg/kg RL | mg/kg RL | mg/kg RL | mg/kg RL | mg/kg RL |
| Chloride | | <5.01 5.01 | <5.00 5.00 | <4.98 4.98 | 16.9 5.04 | 323 5.04 | 1540 25.0 |

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Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Brandi Ritcherson
Project Manager

Analytical Report 618652

for
COG Operating LLC

Project Manager: Ike Tavaréz
Loco Hills SWD Mainline (5-7-15) 2RP-3010

26-MAR-19

Collected By: Client



1211 W. Florida Ave
Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-28), 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 (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)
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), North Carolina (483)
Xenco-Lakeland: Florida (E84098)



26-MAR-19

Project Manager: **Ike Tavaréz**

COG Operating LLC

2407 Pecos Avenue

Artesia, NM 88210

Reference: XENCO Report No(s): **618652**

Loco Hills SWD Mainline (5-7-15) 2RP-3010

Project Address: Eddy County, NM

Ike Tavaréz:

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) 618652. 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. 618652 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 'Brandi Ritcherson'.

Brandi Ritcherson

Project Manager

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

Certified and approved by numerous States and Agencies.

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

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

**Sample Cross Reference 618652****COG Operating LLC, Artesia, NM**

Loco Hills SWD Mainline (5-7-15) 2RP-3010

| Sample Id | Matrix | Date Collected | Sample Depth | Lab Sample Id |
|-----------|--------|----------------|--------------|---------------|
| AH-1 0-1' | S | 03-19-19 00:00 | | 618652-001 |
| AH-1 1.5' | S | 03-19-19 00:00 | | 618652-002 |
| AH-1 2.5' | S | 03-19-19 00:00 | | 618652-003 |
| AH-1 3.5' | S | 03-19-19 00:00 | | 618652-004 |
| AH-1 4.5' | S | 03-19-19 00:00 | | 618652-005 |
| AH-1 5.5' | S | 03-19-19 00:00 | | 618652-006 |
| AH-2 0-1' | S | 03-19-19 00:00 | | 618652-007 |
| AH-2 1.5' | S | 03-19-19 00:00 | | 618652-008 |
| AH-2 2.5' | S | 03-19-19 00:00 | | 618652-009 |
| AH-2 3.5' | S | 03-19-19 00:00 | | 618652-010 |
| AH-2 4.5' | S | 03-19-19 00:00 | | 618652-011 |
| AH-2 5.5' | S | 03-19-19 00:00 | | 618652-012 |

**CASE NARRATIVE****Client Name: COG Operating LLC****Project Name: Loco Hills SWD Mainline (5-7-15) 2RP-3010**

Project ID:

Report Date: 26-MAR-19

Work Order Number(s): 618652

Date Received: 03/22/2019

Sample receipt non conformances and comments:None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3083135 Inorganic Anions by EPA 300

Lab Sample ID 618652-002 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 618652-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011.

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

Chloride Relative Percent Difference (RPD) between matrix spike and duplicate was above quality control limits.

Samples in the analytical batch are: 618652-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011



Certificate of Analytical Results 618652



COG Operating LLC, Artesia, NM
Loco Hills SWD Mainline (5-7-15) 2RP-3010

Sample Id: **AH-1 0-1'**
Lab Sample Id: 618652-001

Matrix: Soil
Date Collected: 03.19.19 00.00

Date Received: 03.22.19 15.12

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 03.23.19 19.35

Basis: Wet Weight

Seq Number: 3083135

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|-----------|------------|--------|------|-------|----------------|------|-----|
| Chloride | 16887-00-6 | 17.9 | 5.02 | mg/kg | 03.24.19 01.34 | | 1 |



Certificate of Analytical Results 618652



COG Operating LLC, Artesia, NM
Loco Hills SWD Mainline (5-7-15) 2RP-3010

Sample Id: **AH-1 1.5'**

Matrix: Soil

Date Received: 03.22.19 15.12

Lab Sample Id: 618652-002

Date Collected: 03.19.19 00.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 03.23.19 19.35

Basis: Wet Weight

Seq Number: 3083135

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|-----------|------------|--------|------|-------|----------------|------|-----|
| Chloride | 16887-00-6 | 116 | 5.00 | mg/kg | 03.24.19 01.41 | | 1 |



Certificate of Analytical Results 618652



COG Operating LLC, Artesia, NM
Loco Hills SWD Mainline (5-7-15) 2RP-3010

Sample Id: **AH-1 2.5'**

Matrix: Soil

Date Received: 03.22.19 15.12

Lab Sample Id: 618652-003

Date Collected: 03.19.19 00.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 03.23.19 19.35

Basis: Wet Weight

Seq Number: 3083135

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|-----------|------------|--------|------|-------|----------------|------|-----|
| Chloride | 16887-00-6 | 175 | 5.03 | mg/kg | 03.24.19 02.01 | | 1 |



Certificate of Analytical Results 618652



COG Operating LLC, Artesia, NM
Loco Hills SWD Mainline (5-7-15) 2RP-3010

Sample Id: **AH-1 3.5'**

Matrix: Soil

Date Received: 03.22.19 15.12

Lab Sample Id: 618652-004

Date Collected: 03.19.19 00.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 03.23.19 19.35

Basis: Wet Weight

Seq Number: 3083135

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|-----------|------------|--------|------|-------|----------------|------|-----|
| Chloride | 16887-00-6 | 293 | 5.04 | mg/kg | 03.24.19 02.07 | | 1 |



Certificate of Analytical Results 618652



COG Operating LLC, Artesia, NM
Loco Hills SWD Mainline (5-7-15) 2RP-3010

Sample Id: **AH-1 4.5'**

Matrix: Soil

Date Received: 03.22.19 15.12

Lab Sample Id: 618652-005

Date Collected: 03.19.19 00.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 03.23.19 19.35

Basis: Wet Weight

Seq Number: 3083135

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|-----------|------------|--------|------|-------|----------------|------|-----|
| Chloride | 16887-00-6 | 171 | 5.04 | mg/kg | 03.24.19 02.28 | | 1 |



Certificate of Analytical Results 618652



COG Operating LLC, Artesia, NM
Loco Hills SWD Mainline (5-7-15) 2RP-3010

Sample Id: **AH-1 5.5'**

Matrix: Soil

Date Received: 03.22.19 15.12

Lab Sample Id: 618652-006

Date Collected: 03.19.19 00.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 03.23.19 19.35

Basis: Wet Weight

Seq Number: 3083135

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|-----------|------------|--------|------|-------|----------------|------|-----|
| Chloride | 16887-00-6 | 157 | 5.04 | mg/kg | 03.24.19 02.34 | | 1 |



Certificate of Analytical Results 618652



COG Operating LLC, Artesia, NM
Loco Hills SWD Mainline (5-7-15) 2RP-3010

Sample Id: **AH-2 0-1'**
Lab Sample Id: 618652-007

Matrix: Soil
Date Collected: 03.19.19 00.00

Date Received: 03.22.19 15.12

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 03.23.19 19.35

Basis: Wet Weight

Seq Number: 3083135

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|-----------|------------|--------|------|-------|----------------|------|-----|
| Chloride | 16887-00-6 | <5.01 | 5.01 | mg/kg | 03.24.19 02.41 | U | 1 |



Certificate of Analytical Results 618652



COG Operating LLC, Artesia, NM
Loco Hills SWD Mainline (5-7-15) 2RP-3010

Sample Id: **AH-2 1.5'**

Matrix: Soil

Date Received: 03.22.19 15.12

Lab Sample Id: 618652-008

Date Collected: 03.19.19 00.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 03.23.19 19.35

Basis: Wet Weight

Seq Number: 3083135

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|-----------|------------|--------|------|-------|----------------|------|-----|
| Chloride | 16887-00-6 | <5.00 | 5.00 | mg/kg | 03.24.19 02.48 | U | 1 |



Certificate of Analytical Results 618652



COG Operating LLC, Artesia, NM
Loco Hills SWD Mainline (5-7-15) 2RP-3010

Sample Id: **AH-2 2.5'**

Matrix: Soil

Date Received: 03.22.19 15.12

Lab Sample Id: 618652-009

Date Collected: 03.19.19 00.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 03.23.19 19.35

Basis: Wet Weight

Seq Number: 3083135

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|-----------|------------|--------|------|-------|----------------|------|-----|
| Chloride | 16887-00-6 | <4.98 | 4.98 | mg/kg | 03.24.19 02.54 | U | 1 |



Certificate of Analytical Results 618652



COG Operating LLC, Artesia, NM
Loco Hills SWD Mainline (5-7-15) 2RP-3010

Sample Id: **AH-2 3.5'**

Matrix: Soil

Date Received: 03.22.19 15.12

Lab Sample Id: 618652-010

Date Collected: 03.19.19 00.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 03.23.19 19.35

Basis: Wet Weight

Seq Number: 3083135

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|-----------|------------|--------|------|-------|----------------|------|-----|
| Chloride | 16887-00-6 | 16.9 | 5.04 | mg/kg | 03.24.19 03.01 | | 1 |



Certificate of Analytical Results 618652



COG Operating LLC, Artesia, NM
Loco Hills SWD Mainline (5-7-15) 2RP-3010

Sample Id: **AH-2 4.5'**

Matrix: Soil

Date Received: 03.22.19 15.12

Lab Sample Id: 618652-011

Date Collected: 03.19.19 00.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 03.23.19 19.35

Basis: Wet Weight

Seq Number: 3083135

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|-----------|------------|--------|------|-------|----------------|------|-----|
| Chloride | 16887-00-6 | 323 | 5.04 | mg/kg | 03.24.19 03.07 | | 1 |



Certificate of Analytical Results 618652



COG Operating LLC, Artesia, NM
Loco Hills SWD Mainline (5-7-15) 2RP-3010

Sample Id: **AH-2 5.5'**

Matrix: Soil

Date Received: 03.22.19 15.12

Lab Sample Id: 618652-012

Date Collected: 03.19.19 00.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 03.23.19 17.00

Basis: Wet Weight

Seq Number: 3083129

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|-----------|------------|--------|------|-------|----------------|------|-----|
| Chloride | 16887-00-6 | 1540 | 25.0 | mg/kg | 03.23.19 22.48 | | 5 |



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



COG Operating LLC
Loco Hills SWD Mainline (5-7-15) 2RP-3010

Analytical Method: Chloride by EPA 300

Seq Number: 3083129

Matrix: Solid

Prep Method: E300P

MB Sample Id: 7674202-1-BLK

LCS Sample Id: 7674202-1-BKS

Date Prep: 03.23.19

LCSD Sample Id: 7674202-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|-----------|-----------|--------------|------------|----------|-------------|-----------|--------|------|-----------|-------|----------------|------|
| Chloride | <0.858 | 250 | 249 | 100 | 254 | 102 | 90-110 | 2 | 20 | mg/kg | 03.23.19 20:42 | |

Analytical Method: Chloride by EPA 300

Seq Number: 3083135

Matrix: Solid

Prep Method: E300P

MB Sample Id: 7674206-1-BLK

LCS Sample Id: 7674206-1-BKS

Date Prep: 03.23.19

LCSD Sample Id: 7674206-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|-----------|-----------|--------------|------------|----------|-------------|-----------|--------|------|-----------|-------|----------------|------|
| Chloride | <0.858 | 250 | 273 | 109 | 255 | 102 | 90-110 | 7 | 20 | mg/kg | 03.23.19 23:54 | |

Analytical Method: Chloride by EPA 300

Seq Number: 3083129

Matrix: Soil

Prep Method: E300P

Parent Sample Id: 618648-009

MS Sample Id: 618648-009 S

Date Prep: 03.23.19

MSD Sample Id: 618648-009 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|-----------|---------------|--------------|-----------|---------|------------|----------|--------|------|-----------|-------|----------------|------|
| Chloride | 21.3 | 252 | 291 | 107 | 294 | 108 | 90-110 | 1 | 20 | mg/kg | 03.23.19 21:02 | |

Analytical Method: Chloride by EPA 300

Seq Number: 3083129

Matrix: Soil

Prep Method: E300P

Parent Sample Id: 618648-010

MS Sample Id: 618648-010 S

Date Prep: 03.23.19

MSD Sample Id: 618648-010 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|-----------|---------------|--------------|-----------|---------|------------|----------|--------|------|-----------|-------|----------------|------|
| Chloride | 32.0 | 251 | 290 | 103 | 289 | 102 | 90-110 | 0 | 20 | mg/kg | 03.23.19 22:35 | |

Analytical Method: Chloride by EPA 300

Seq Number: 3083135

Matrix: Soil

Prep Method: E300P

Parent Sample Id: 618582-010

MS Sample Id: 618582-010 S

Date Prep: 03.23.19

MSD Sample Id: 618582-010 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|-----------|---------------|--------------|-----------|---------|------------|----------|--------|------|-----------|-------|----------------|------|
| Chloride | 67.4 | 248 | 322 | 103 | 325 | 104 | 90-110 | 1 | 20 | mg/kg | 03.24.19 00:15 | |

MS/MSD Percent Recovery
 Relative Percent Difference
 LCS/LCSD Recovery
 Log Difference

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
 A = Parent Result
 C = MS/LCS Result
 E = MSD/LCSD Result

MS = Matrix Spike
 B = Spike Added
 D = MSD/LCSD % Rec



COG Operating LLC

Loco Hills SWD Mainline (5-7-15) 2RP-3010

Analytical Method: Chloride by EPA 300

Seq Number: 3083135

Parent Sample Id: 618652-002

Matrix: Soil

MS Sample Id: 618652-002 S

Prep Method: E300P

Date Prep: 03.23.19

MSD Sample Id: 618652-002 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|-----------|---------------|--------------|-----------|---------|------------|----------|--------|------|-----------|-------|----------------|------|
| Chloride | 116 | 250 | 386 | 108 | <5.00 | 0 | 90-110 | 200 | 20 | mg/kg | 03.24.19 01:48 | XF |

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec



One Concho
Center/600 Illinois
Avenue/Midland, Texas
Tel (432) 683-7443

12181652

| Client Name: COG | | Site Manager: Ike Tavaréz itavaréz@concho.com | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|-------------------------------------|---|---|----------|---------------------|--------|--------------|---------------------|------------------|--------------|----------------|------------|------|------|-------|------|-----|------------------|-----|-----------|-----------|--|---|--|--|--|---|---|--|-----------|-----------|--|---|--|--|--|---|---|--|-----------|-----------|--|---|--|--|--|---|---|--|-----------|-----------|--|---|--|--|--|---|---|--|-----------|-----------|--|---|--|--|--|---|---|--|-----------|-----------|--|---|--|--|--|---|---|--|-----------|-----------|--|---|--|--|--|---|---|--|-----------|-----------|--|---|--|--|--|---|---|--|-----------|-----------|--|---|--|--|--|---|---|--|-----------|-----------|--|---|--|--|--|---|---|--|
| Project Name: Loco Hills SWD Mainline (5-7-15) ZRP-3010 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Project Location: Eddy County, NM | | Project #: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Invoice to: COG | | Sampler Signature: Robert Grubbs Jr | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Receiving Laboratory: Xenco | | Comments: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LAB # (LAB USE ONLY) | SAMPLE IDENTIFICATION | | <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th colspan="2">SAMPLING</th> <th colspan="2">MATRIX</th> <th colspan="2">PRESERVATIVE METHOD</th> <th rowspan="2"># CONTAINERS</th> <th rowspan="2">FILTERED (Y/N)</th> </tr> <tr> <th>YEAR: 2019</th> <th>DATE</th> <th>TIME</th> <th>WATER</th> <th>SOIL</th> <th>HCL</th> <th>HNO₃</th> <th>ICE</th> </tr> <tr><td>AH-1 0-1'</td><td>3/19/2019</td><td></td><td>X</td><td></td><td></td><td></td><td>X</td><td>1</td><td></td></tr> <tr><td>AH-1 1.5'</td><td>3/19/2019</td><td></td><td>X</td><td></td><td></td><td></td><td>X</td><td>1</td><td></td></tr> <tr><td>AH-1 2.5'</td><td>3/19/2019</td><td></td><td>X</td><td></td><td></td><td></td><td>X</td><td>1</td><td></td></tr> <tr><td>AH-1 3.5'</td><td>3/19/2019</td><td></td><td>X</td><td></td><td></td><td></td><td>X</td><td>1</td><td></td></tr> <tr><td>AH-1 4.5'</td><td>3/19/2019</td><td></td><td>X</td><td></td><td></td><td></td><td>X</td><td>1</td><td></td></tr> <tr><td>AH-1 5.5'</td><td>3/19/2019</td><td></td><td>X</td><td></td><td></td><td></td><td>X</td><td>1</td><td></td></tr> <tr><td>AH-2 0-1'</td><td>3/19/2019</td><td></td><td>X</td><td></td><td></td><td></td><td>X</td><td>1</td><td></td></tr> <tr><td>AH-2 1.5'</td><td>3/19/2019</td><td></td><td>X</td><td></td><td></td><td></td><td>X</td><td>1</td><td></td></tr> <tr><td>AH-2 2.5'</td><td>3/19/2019</td><td></td><td>X</td><td></td><td></td><td></td><td>X</td><td>1</td><td></td></tr> <tr><td>AH-2 3.5'</td><td>3/19/2019</td><td></td><td>X</td><td></td><td></td><td></td><td>X</td><td>1</td><td></td></tr> </table> | SAMPLING | | MATRIX | | PRESERVATIVE METHOD | | # CONTAINERS | FILTERED (Y/N) | YEAR: 2019 | DATE | TIME | WATER | SOIL | HCL | HNO ₃ | ICE | AH-1 0-1' | 3/19/2019 | | X | | | | X | 1 | | AH-1 1.5' | 3/19/2019 | | X | | | | X | 1 | | AH-1 2.5' | 3/19/2019 | | X | | | | X | 1 | | AH-1 3.5' | 3/19/2019 | | X | | | | X | 1 | | AH-1 4.5' | 3/19/2019 | | X | | | | X | 1 | | AH-1 5.5' | 3/19/2019 | | X | | | | X | 1 | | AH-2 0-1' | 3/19/2019 | | X | | | | X | 1 | | AH-2 1.5' | 3/19/2019 | | X | | | | X | 1 | | AH-2 2.5' | 3/19/2019 | | X | | | | X | 1 | | AH-2 3.5' | 3/19/2019 | | X | | | | X | 1 | |
| | SAMPLING | | MATRIX | | PRESERVATIVE METHOD | | # CONTAINERS | FILTERED (Y/N) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | YEAR: 2019 | DATE | TIME | WATER | SOIL | HCL | | | HNO ₃ | ICE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | AH-1 0-1' | 3/19/2019 | | X | | | | X | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | AH-1 1.5' | 3/19/2019 | | X | | | | X | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | AH-1 2.5' | 3/19/2019 | | X | | | | X | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | AH-1 3.5' | 3/19/2019 | | X | | | | X | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | AH-1 4.5' | 3/19/2019 | | X | | | | X | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | AH-1 5.5' | 3/19/2019 | | X | | | | X | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | AH-2 0-1' | 3/19/2019 | | X | | | | X | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | AH-2 1.5' | 3/19/2019 | | X | | | | X | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | AH-2 2.5' | 3/19/2019 | | X | | | | X | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | AH-2 3.5' | 3/19/2019 | | X | | | | X | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Relinquished by: <i>[Signature]</i> | | Date: 3-22-15 Time: 15:11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Relinquished by: <i>[Signature]</i> | | Date: 3/22/19 Time: 15:12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Relinquished by: | | Date: Time: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Received by: | | Date: Time: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ORIGINAL COPY

| | | |
|---|---|--|
| LAB USE ONLY Sample Temperature 3-21-11 | REMARKS: | |
| | <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.) | |
| | BTEX 8021B | |
| | TPH TX1005 (Ext to C35) | |
| | TPH 8015M (GRO - DRO - 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 | | |

018453

ORIGINAL COPY



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: COG Operating LLC

Date/ Time Received: 03/22/2019 03:12:00 PM

Work Order #: 618652

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)? | 3.1 |
| #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: 03/22/2019

Checklist reviewed by:

Jessica Kramer

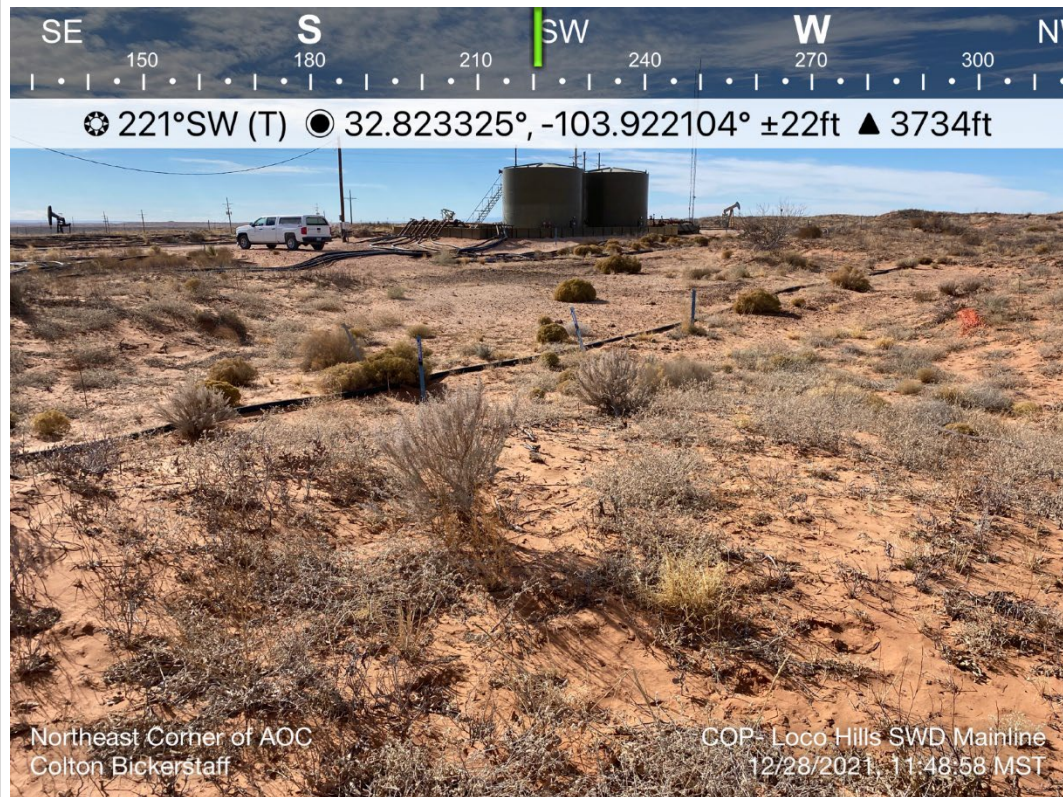
Date: 03/22/2019

APPENDIX F

Photographic Documentation



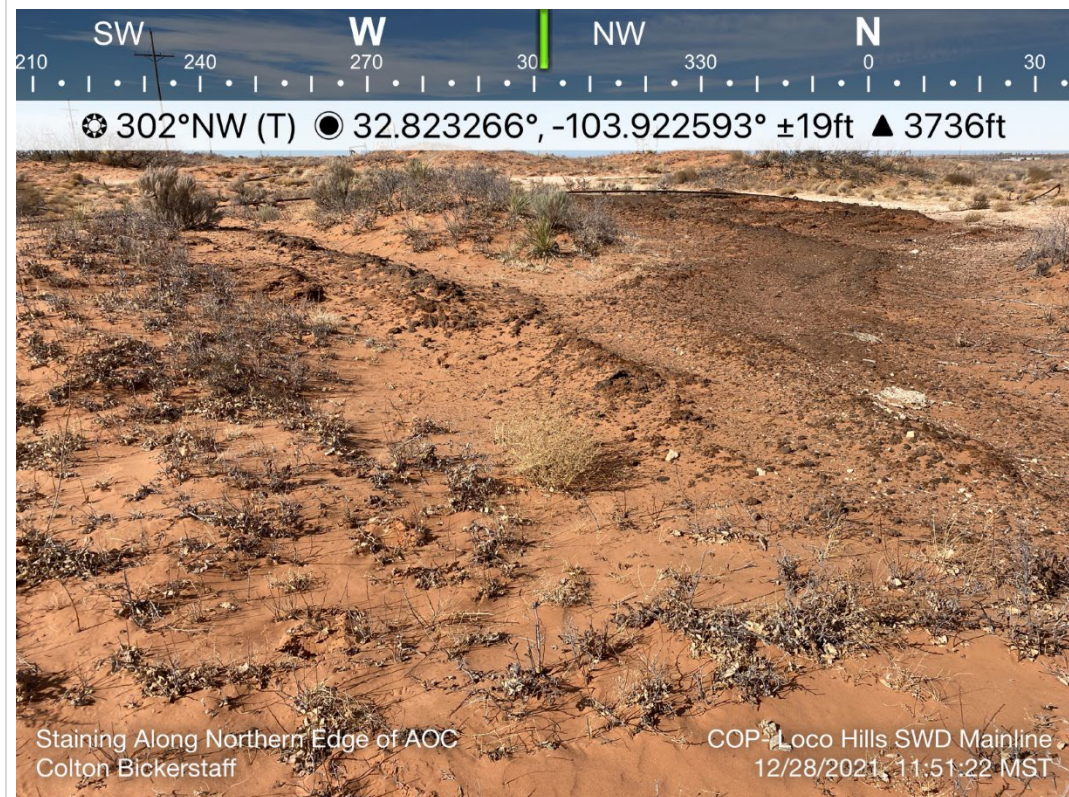
| | | | |
|--|-------------|---|------------|
| TETRA TECH, INC. PROJECT NO. 212C-MD-02621 | DESCRIPTION | View northeast. Southeast corner of visually assessed area. | 1 |
| | SITE NAME | Loco Hills SWD Main Line | 12/28/2021 |



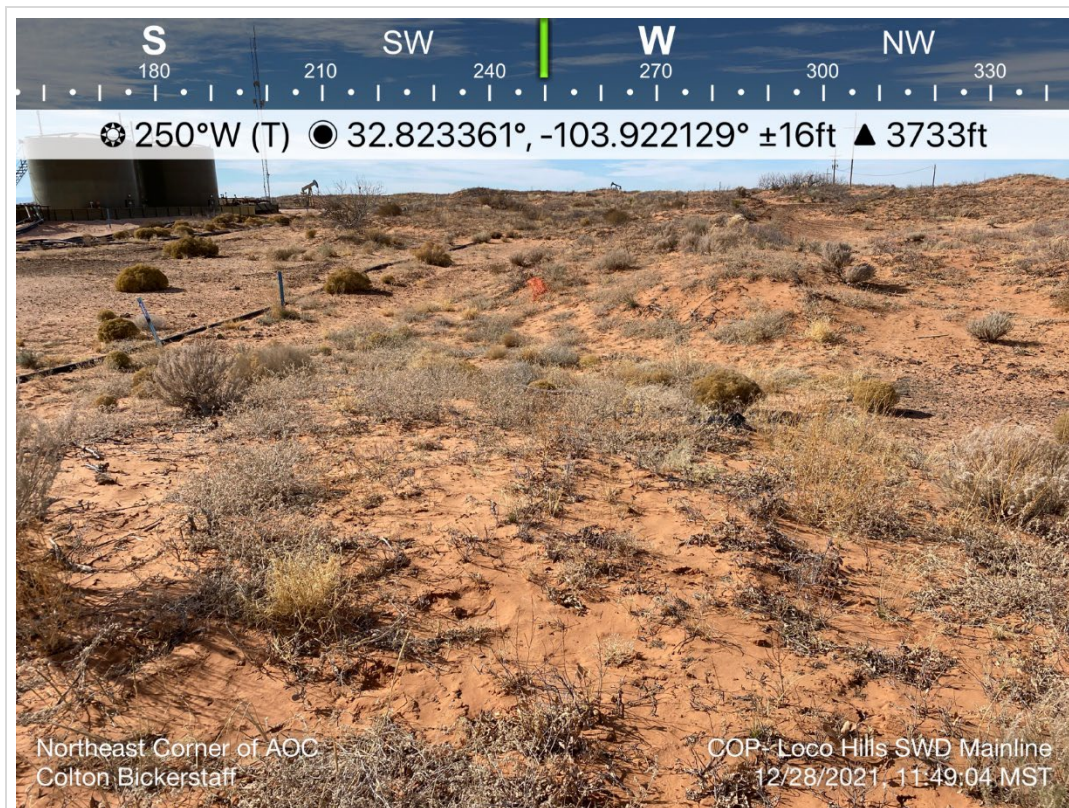
| | | | |
|--|-------------|--|------------|
| TETRA TECH, INC. PROJECT NO. 212C-MD-02621 | DESCRIPTION | View southwest. Northeast of tank battery. | 2 |
| | SITE NAME | Loco Hills SWD Main Line | 12/28/2021 |



| | | | |
|--|-------------|------------------------------------|------------|
| TETRA TECH, INC. PROJECT NO. 212C-MD-02621 | DESCRIPTION | View south. North of tank battery. | 3 |
| | SITE NAME | Loco Hills SWD Main Line | 12/28/2021 |



| | | | |
|--|-------------|--|------------|
| TETRA TECH, INC. PROJECT NO. 212C-MD-02621 | DESCRIPTION | View west-northwest. Northwest corner of visually assessed area. Surface staining visible. | 4 |
| | SITE NAME | Loco Hills SWD Main Line | 12/28/2021 |



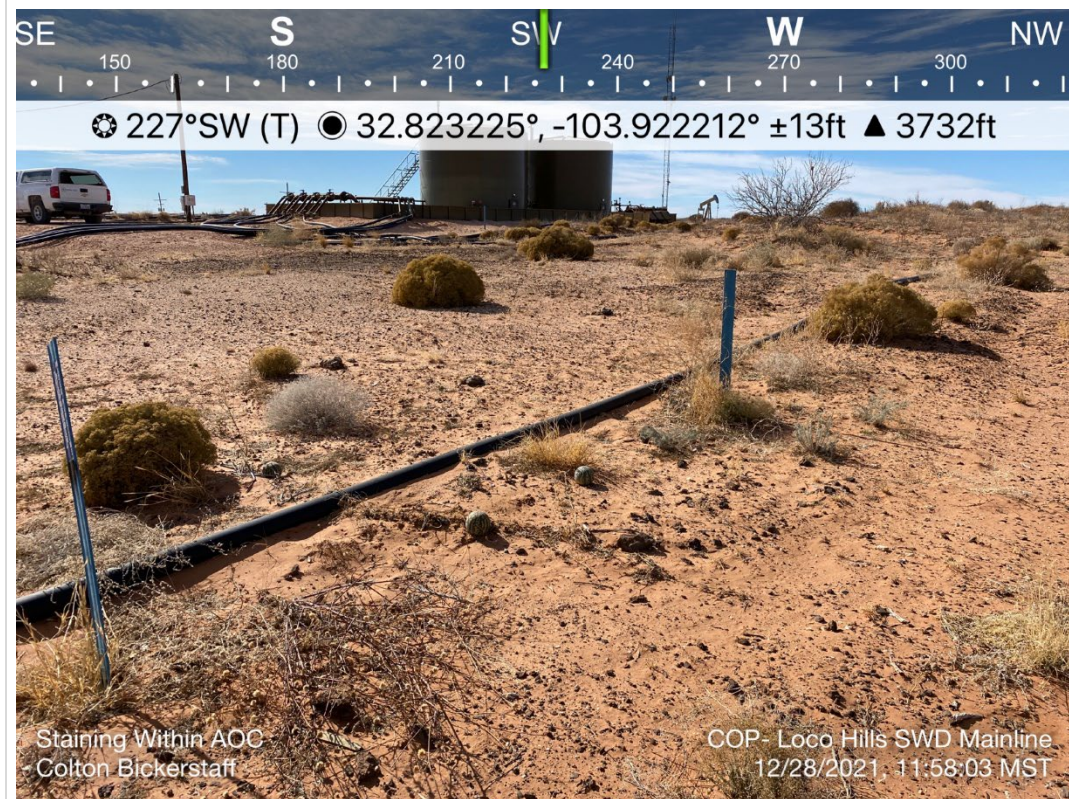
| | | | |
|--|-------------|---|------------|
| TETRA TECH, INC. PROJECT NO. 212C-MD-02621 | DESCRIPTION | View west-southwest. Northeast corner of former release area. | 5 |
| | SITE NAME | Loco Hills SWD Main Line | 12/28/2021 |



| | | | |
|--|-------------|--|------------|
| TETRA TECH, INC. PROJECT NO. 212C-MD-02621 | DESCRIPTION | View southeast. North of visually assessed area. | 6 |
| | SITE NAME | Loco Hills SWD Main Line | 12/28/2021 |



| | | | |
|--|-------------|--|------------|
| TETRA TECH, INC. PROJECT NO. 212C-MD-02621 | DESCRIPTION | View east. Eastern portion of visually assessed area. Surface staining visible. | 7 |
| | SITE NAME | Loco Hills SWD Main Line | 12/28/2021 |



| | | | |
|--|-------------|---|------------|
| TETRA TECH, INC. PROJECT NO. 212C-MD-02621 | DESCRIPTION | View southwest. Northeast of tanks. Surface staining visible. | 8 |
| | SITE NAME | Loco Hills SWD Main Line | 12/28/2021 |

APPENDIX G

Historical Aerial Imagery



February 2014



February 2017

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

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

CONDITIONS

Action 81270

CONDITIONS

| | |
|---|---|
| Operator: COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701 | OGRID: 229137 |
| | Action Number: 81270 |
| | Action Type: [C-141] Release Corrective Action (C-141) |

CONDITIONS

| Created By | Condition | Condition Date |
|------------|-----------|----------------|
| amaxwell | None | 11/22/2022 |