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APPROVED
By Olivia Yu at 3:08 pm, Sep 18, 2018

July 25, 2018

Olivia Yu
Environmental Specialist
New Mexico Oil Conservation Division, District 1
1625 N. French Drive
Hobbs, NM 88240

NMOCD approves of the additional delineation and proposed groundwater monitoring well for 1RP-1483.

Re: Chevron Central Vacuum Unit No. 47H
2017 Soil Assessment Report
Case No. RP-1483
Lea County, New Mexico

Dear Ms. Yu,

Please find enclosed for your files copies of the following report:

- Central Vacuum Unit No. 47 H – 2017 Soil Assessment Report, Unit A, Section 31, Township 17 South, Range 35 East; Lea County New Mexico.

The report was prepared by GHD Services (GHD) on behalf of Chevron Environmental Management Company (CEMC) to document on-going assessment activities throughout 2017 at the Site.

Please do not hesitate to call Scott Foord with GHD at 713-734-3090 or myself at 713-372-0289, should you have any questions.

Sincerely,

Jason Michelson

Encl. Central Vacuum Unit No. 47H – 2017 Soil Assessment Report

C.C. Amy Barnhill, Chevron/MCBU

Site Assessment Report

Central Vacuum Unit No. 47H
RP No. 1483
Unit A, Section 31, Township 17 South,
Range 35 East Lovington, New Mexico

Chevron Environmental Management Company

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1. Introduction

On behalf of Chevron Environmental Management Company (CEMC), GHD Services, Inc. (GHD) has prepared this Site Assessment Report summarizing soil boring installation and sampling activities conducted at the Central Vacuum Unit No. 47H location (hereafter referred to as the "Site"). The Site is located in Unit A, Section 31, Township 17 South, Range 35 East, approximately 0.94-miles southeast of Buckeye, in central Lea County, New Mexico (Figure 1 and Figure 2). Remediation Permit (RP) Number 1483 (RP-1483) was assigned by the New Mexico Oil Conservation Division (NMOCD) District I, Hobbs, New Mexico office.

2. Project Information and Background

Environmental Plus, Inc. (EPI) submitted a request for pit closure\work plan on behalf of Chevron USA (Chevron) to the NMOCD District I, Hobbs, New Mexico office on July 9, 2007 that summarized field activities completed by EPI in January and February 2006 at CVU 47H. An area around the former pit location was excavated to approximately 10-feet below ground surface (bgs) and an estimated 2,622 cubic yards (cy) of drilling mud/soil were transported to Sundance Services, Inc. Subsequent to excavation activities, soil samples from two soil borings (SB-1 and SB-2) installed at the base of the excavation and eight excavation sidewall samples (NSWW-3, WSWN-3, WSWS-3, SSWW 3, SSWE-3, ESWS-3, ESWN-3 and NSWE-3) were collected. Soil boring data demonstrated chloride concentrations decreasing to below the Site Recommended Remediation Action Level (RRAL) of 250 milligrams per kilogram (mg/kg) in each of the pit floor borings. Sidewall samples indicated elevated chloride impacts at a depth of 3 feet bgs on the south/southeastern portions of the excavation.

On July 11, 2007, the pit closure work plan submitted by EPI was denied approval by the NMOCD District I office because of elevated chloride concentrations still present on the south/southeastern portion of the existing excavation. The NMOCD recommended these "hot spots" be removed and a closure proposal be resubmitted once lateral delineation was confirmed. In December 2010, CEMC assumed the responsibilities of the pit closure activities at the Site and GHD (formerly CRA) was contracted to manage the pit closure activities. On January 11, 2011, GHD, CEMC and AECOM met at the NMOCD District I office to discuss the path forward at the Site. Topics of discussions included the 2007 work plan submittal and objectives to close the pit as directed by the NMOCD.

On June 27, 2012, GHD and CEMC met at the NMOCD District I office to further discuss the path forward at the Site. The discussion covered GHD's Closure Request Work Plan (prepared March 18, 2011), additional delineation activities, proper closure documentation (C-141/C-144 form) submittal, and reporting. The NMOCD requested additional assessments be completed to further evaluate the vertical extent of chloride impacts for areas outside of the excavated pit boundaries. In December 2012, GHD mobilized to the Site to initiate additional soil boring activities. Soil borings SB-3 and SB-4 were drilled to 50 feet bgs to assess areas southeast (outside) of the previously excavated pit boundaries. Results of the 2012 soil boring and sampling activities indicated the presence of elevated chloride concentrations in soil (see Figure 6).

On July 9, 2014, GHD and CEMC met with NMOCD at the NMOCD District I office to discuss a pit closure plan and request to backfill prepared by GHD on behalf of CEMC. The Site's history and analytical findings were reviewed and it was agreed to by all parties that the existing open pit excavation should be backfilled in accordance to the pit closure plan and backfill request prepared by GHD (July 2014). NMOCD requested that a NMOCD Form C-144 be submitted summarizing the backfilling and closure activities. Additionally, NMOCD requested that delineation efforts to the southeast of the excavation be explored further via soil borings and analytical sampling, and that those activities be reported under a separate NMOCD Form C-141 during the 2015 calendar year.

GHD performed the proposed backfilling and closure activities for the pit in March of 2015. GHD prepared and submitted a Remediation and Pit Closure Activities Report as an attachment to NMOCD C-144 Pit Closure Form to NMOCD in April 2015.

GHD returned to the Site on August 19, 2015 to initiate additional soil boring activities discussed in the July 9, 2014 meeting between Chevron, GHD, and the NMOCD. Soil boring SB-1 was advanced to approximately 50 feet bgs and soil boring SB-2 was advanced to approximately 90 feet bgs. Soil samples collected from SB-1 were below the RRAL (250 milligrams mg/kg) for chloride in all samples collected with the exception of the 5-foot interval (421 mg/kg). Soil boring SB-2 exceeded the RRAL in multiple sample intervals throughout the boring.

The analytical data obtained from the 2012 and 2015 soil assessment activities indicated that vertical and horizontal delineation of chloride impacts in soil was not achieved at the Site. Assessment activities were continued in 2017 and included the advancement of six additional soil borings (SB-5 through SB-10) to 90 feet bgs. Soil boring locations are depicted on Figure 3. The findings of the 2017 soil investigation are presented in this report.

3. Remediation Standards

Information available on the Petroleum Recovery Research Center (PRRC) Mapping Portal, current (GHD) managed groundwater site(s) data, and the United States Geological Survey (USGS) Current Water Database for the Nation indicate:

- The depth to groundwater from the deepest impacted soil at the Site is less than 50-feet bgs.
- The nearest private domestic water source is greater than 200-feet from the release site.
- The nearest public/municipal water source is greater than 1,000-feet from the release site.
- The release site lies more than 1,000 horizontal feet from the nearest surface water body.

The NMOCD provides guidance for remediation of contaminants of oil field wastes or products in Guidelines for Remediation of Leaks, Spills, and Releases (August 13, 1993). Consequently, the NMOCD total ranking criteria score is twenty (20) for the Site. The site-specific RRALs applied to this location by the NMOCD are 10 mg/kg for benzene; 50 mg/kg for total benzene, toluene, ethylbenzene, and xylenes (BTEX); 100 mg/kg for total petroleum hydrocarbons (TPH); and an NMOCD accepted 600 mg/kg for horizontal and 250 mg/kg for vertical delineation of chloride.

In an August 28, 2017 telephone conversation between Bernard Bockisch (GHD) and Jim Griswold (NMOCD Environmental Bureau Chief), GHD was informed that the NMOCD is accepting chloride concentrations of 600 mg/kg for the horizontal delineation assessment clean up levels.

4. Geophysical Survey – EM31 and ER

In June and August 2017, GHD completed a two-phase geophysical investigation at the Site. The purpose of the investigation was to delineate areas of elevated conductivity in order to map the extent of suspected chloride impacts to soil at the Site. The first phase of the investigation consisted of an electromagnetic (EM) survey to delineate the footprint of the suspected impacts. Based on the EM survey results, an electrical resistivity (ER) survey was completed to determine the vertical distribution of the suspected impacts. Survey coverage data are presented on attached Figures 4 and 5.

The EM survey was completed with an EM31 terrain conductivity meter. Prior to conducting the EM31 survey, a grid consisting of parallel lines was established over the proposed area of investigation indicated on Figure 4. Measurements of EM31 data were collected along 30-foot spaced grid lines over the area of investigation, with station spacings of approximately 4 feet on all grid lines. The ER survey line location was chosen based on the EM31 survey results, and transected the EM31 conductivity anomaly. The configuration of the electrodes (also called an array) and the electrode spacings were optimized to achieve an approximate depth of investigation of approximately 70 feet bgs, and the electrode spacing on all grid lines was on the order of 6.6 feet (i.e. 2 meters).

4.1 EM31 Survey Methodology

The EM31 survey was completed to determine the horizontal extent or limits of chloride impacts in the shallow subsurface soils at the Site. The EM31 consists of transmitter and receiver coils located at opposite ends of a rigid boom. The coil separation for the EM31 is approximately 13 feet, which yields an approximate depth of penetration of 18 feet bgs in vertical dipole mode. Measurements of terrain conductivity from the EM31 were used to assess the extent of chloride impacts at the Site. The data for the EM31 survey were then processed as a colored contour plot. The plot was superimposed on an aerial image of the Site plan, and was used to locate elevated conductivity responses indicative of chloride-impacted areas relative to the Site features. Figure 4 depicts the EM31 survey results.

4.2 EM31 Survey Results

The colored contour conductivity plot presented on Figure 4 reveals that the highest intensity conductivity responses are colored red to purple, while areas of low response are colored blue. All remaining intermediate responses correspond to the color scale presented on the figure. Results from non-impacted areas within the survey coverage indicate that background conductivity responses were approximately 15 milliSiemens/meter (mS/m). Anomalous responses relative to background were generally 1.5 to 10 times higher, and ranged from approximately 20 to 150 mS/m. The EM31 survey results delineated one main area of suspected brine-impacted soils. The response area is just south of the former pit (previously excavated in 2015).

4.3 ER Survey Methodology

The ER survey profile was completed in August 2017 to determine the vertical extent of chloride-impact in soil on one selected survey line running north/south, transecting the former pit at the Site. This area exhibited the strongest responses during the EM31 survey (see Figure 4). The ER survey was conducted with a dual-function resistivity meter, which operates simultaneously as a transmitter and receiver. The survey utilized two multi-electrode cables yielding a total spread of 72 electrodes. The receiver was programmed to automatically "switch" between measured quadripoles, yielding a pseudosection of apparent resistivity. The apparent resistivity data were then imported into an inversion software program, and processed to yield a modeled profile section of resistivity.

4.4 ER Survey Results

The electrical resistivity results for the survey line are presented on Figure 5. These results are based on the measured apparent resistivity values for various depths along the survey line. Calculations of measured apparent resistivity values include the type of ER array (Wenner), the electrode spacing, and raw field data (i.e., applied current and measured voltage for each data point).

The measured apparent resistivity data were processed with the inversion program RES2DINV, to yield the modeled resistivity section presented on Figure 5. The modeled section represents the resistance of earth materials in the shallow subsurface, and thus provides an interpretation of the overburden sequences and areas of suspected brine impacts along the survey line. The highest resistivity values are colored dark blue, while areas of low resistivity (or conversely, high conductivity) are colored yellow to red. All remaining intermediate responses correspond to the color scale presented on the bottom of each section.

The colored plot reveals that the contour intervals ranged from 6.0 to approximately 1,000 Ohm.meters (Ohm.m). The intermediate contour intervals were determined by applying a normalized distribution curve to the data such that the entire range of responses could be identified by discrete colors. The interpreted colored contoured plot suggests that suspected brine-impacted soils can likely be characterized by modeled responses of approximately 6.0 to 40 Ohm.m.

4.5 Geophysical Survey Correlations/Conclusions

- The EM31 survey delineated one main area of suspected brine-impacted soils at the Site.
- In general, the ER survey results indicate the zone of suspected brine impact is centered south/southeast of the former pit, affecting soils at surface down to at least 70 feet bgs.
- The suspected brine impacts appear confined to one area south/southeast of the former pit.

5. Soil Assessment

In order to further define the horizontal extent of chloride impact, six additional soils borings (SB-5 though SB-10) were installed using an air rotary drilling rig. Prior to mobilizing drilling equipment to the Site, the boring locations were marked and an initial New Mexico One Call utility locate ticket was submitted. GHD's contracted service provider, Harrison Cooper, Inc. (HCI), a New Mexico-

licensed water well driller, and GHD mobilized to the Site to begin drilling activities on October 18, 2017. Each boring location was cleared for underground utilities with the use of an air knife up to a depth of 5.0 feet bgs or refusal. SB-5 though SB-10 were advanced to 90 feet bgs. Site details and boring locations are shown on Figure 3.

The chloride screening was accomplished in the field by mixing soil samples with distilled water, then testing the rinsate using Hach chloride test strips. The soil types observed during drilling of SB-6 through SB-10 consisted primarily of silty sands. The soils were logged in accordance with the Unified Soil Classification System, and soil boring logs are provided in Appendix A.

Soil samples were collected at 0.5-1 feet bgs, 4-5 feet bgs, and then ten-foot intervals starting at 9-10 feet bgs within each of the six soil borings. Soil samples were placed in laboratory-supplied sample containers on ice, labeled, and submitted to Xenco Laboratories in Midland, Texas for analysis of chloride by EPA Method 300. Groundwater was not encountered in any of the soil borings. Following completion of activities, the soil cuttings were returned to their respective boreholes and the remainder backfilled with hydrated bentonite pellets from 10 feet bgs to the ground surface.

5.1 Soil Sampling Analytical Results - 2017

Analytical results associated with the soil boring activities of October 2017 are discussed in the following section. Based on analytical results from the shallow soil samples (below Site RRALs), some deeper soil samples were not analyzed at the direction of GHD. Analytical results are presented in Table 1, shown in map view on Figure 6, and are summarized below:

- Soil samples collected from SB-5 exhibited chloride concentrations exceeding the RRAL in the first two shallow sample intervals (0.5-1 feet bgs at 3,760 mg/kg and 4-5 feet bgs at 585 mg/kg). Chloride concentrations decreased below the RRAL throughout the deeper soil sample intervals.
- SB-6 exhibited chloride concentrations exceeding the RRAL in all but one sample interval (9-10 feet bgs) with concentrations ranging from 384 mg/kg to 1,970 mg/kg. The chloride concentration of the soil sample collected from the terminal depth of the boring (90 feet bgs) was above the RRAL at 1,120 mg/kg.
- Soil samples collected from SB-7 exhibited chloride concentrations exceeding the RRAL beginning at interval 0.5-1 feet bgs (1,180 mg/kg), and continued throughout sample intervals to a depth of 49-50 feet bgs with concentrations ranging from 625 mg/kg to 1,940 mg/kg. The highest chloride concentration reported was 1,940 mg/kg at 19-20 feet bgs. The chloride concentration of the soil samples collected from 50 feet bgs to the terminal depth of the boring (90 feet bgs) were well below the RRAL.
- SB-8 exhibited chloride concentrations exceeding the RRAL in one sample interval (9-10 feet bgs at 1,570 mg/kg). Samples analyzed below this interval were all below the RRAL to the depth of 40 feet bgs (deeper samples were not analyzed).
- SB-9 exhibited chloride concentrations exceeding the RRAL within two sample intervals (4-5 feet bgs at 290 mg/kg and 9-10 feet bgs at 495 mg/kg). Samples analyzed below the 10 feet bgs interval were all below the RRAL to 30 feet bgs (deeper samples were not analyzed).

- Soil samples collected from SB-10 exhibited chloride concentrations exceeding the RRAL in one sample interval (9-10 feet bgs at 322 mg/kg). Samples analyzed below this interval were all below the RRAL to 30 feet bgs (deeper samples were not analyzed).

6. Conclusions

Analytical results associated with assessment activities conducted in 2017 indicate the horizontal and vertical extents of the chloride impact in soil have not been fully delineated.

7. 2018 Assessment Activities

On February 13, 2018, GHD and Chevron representatives met with NMOCD to discuss further assessment activities addressing the presence of chloride in soil and the potential presence of chloride in groundwater at the Site. Additional soil and groundwater assessment activities based on those discussions are summarized in the Work Plan included in Appendix C of this report.

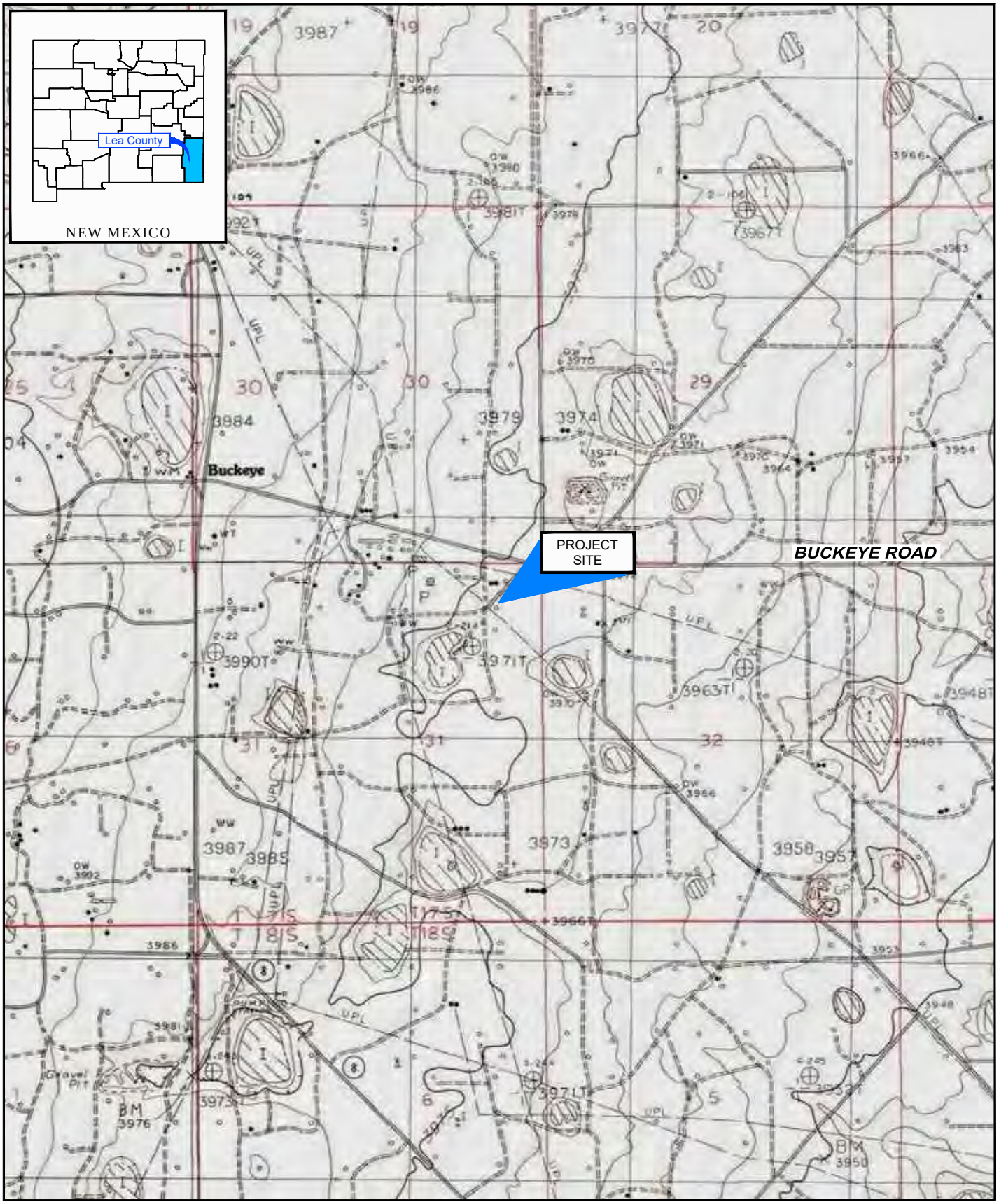
Submitted by:

GHD Services, Inc.

Scott Foord, P.G.
Project Manager

Raaj U. Patel, P.G.
Program Manager

Figures



Source: USGS 7.5 Minute Quad "Buckeye and Lovington SW, Texas"

Lat/Long: 32.7970° North, 103.4906° West

0 1000 2000ft

Coordinate System:
NAD 1983 StatePlane-
New Mexico East (US Feet)

CEMC
LEA COUNTY, NEW MEXICO
CENTRAL VACUUM UNIT No. 47H

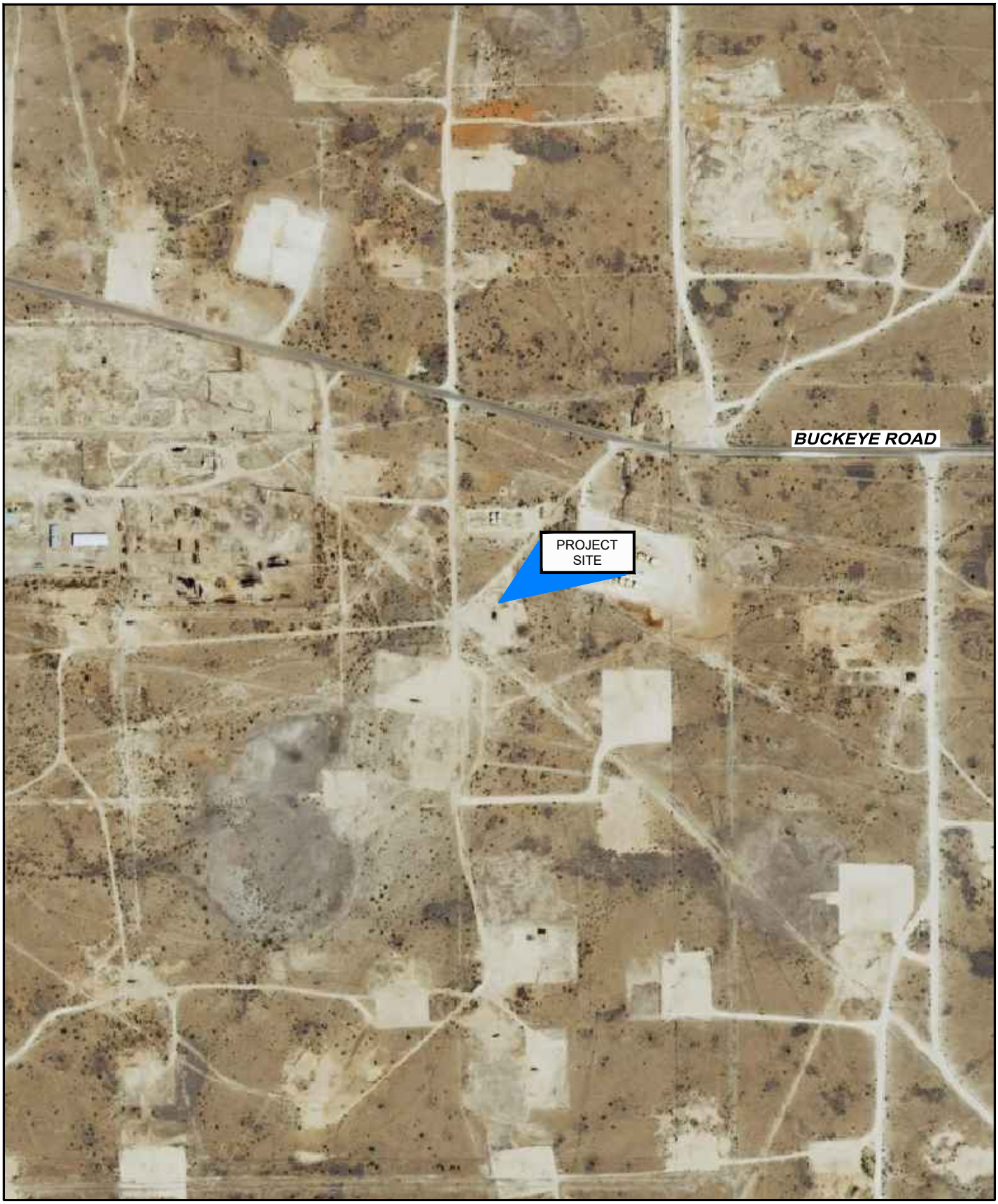
073821-00

Apr 11, 2018

SITE LOCATION MAP

FIGURE 1

CAD File: I:\CAD\Files\07----\073---\073821-Chevron-Central Vacuum Unit #47H\073821-00\073821-00(007)\073821-00(007)GN-DL001.dwg



Source: USDA FSA Imagery, May 10, 2014

Lat/Long: 32.7970° North, 103.4906° West

0 250 500ft

Coordinate System:
NAD 1983 StatePlane-
New Mexico East (US Feet)

CEMC
LEA COUNTY, NEW MEXICO
CENTRAL VACUUM UNIT No. 47H

073821-00

Apr 11, 2018

SITE AERIAL MAP

FIGURE 2

CAD File: I:\CAD\Files\07----\073---\073821-Chevron-Central Vacuum Unit #47H\073821-00\073821-00(007)\073821-00(007)GN-DL001.dwg

NOTES:

1. Subsurface utilities identified by Ground Penetrating Radar (GPR) survey conducted in 2012.

SB-5
SB-6
SB-7
SB-4
SB-3
SB-2
SB-9
SB-8
SB-1
SB-10

LEGEND

- Soil Boring Location - 2012
- Soil Boring Location - 2015
- Soil Boring Location - 2017
- Approximate Boundary of Remedial Closure Activities
- Backfill and Remediated Area
- Active Oil Field Equipment

Source: UDSA FSA Imagery, May 10, 2014

Lat/Long: 32.7970° North, 103.4906° West

0 20 40ft

Coordinate System:
NAD 1983 StatePlane-
New Mexico East (US Feet)

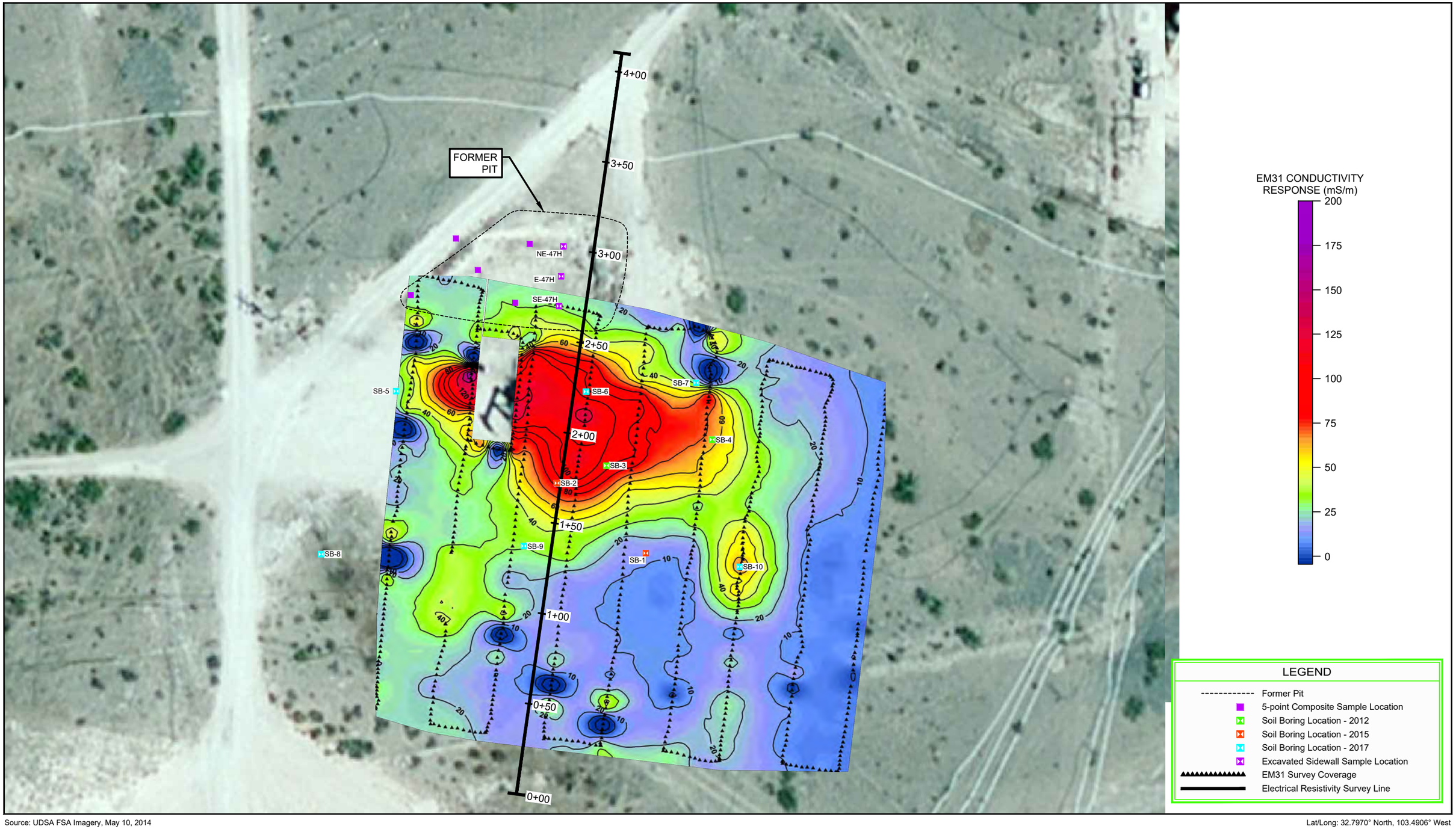
CEMC
LEA COUNTY, NEW MEXICO
CENTRAL VACUUM UNIT No. 47H

073821-00
May 3, 2018

SITE DETAILS MAP

FIGURE 3

CAD File: I:\CAD\Files\07----\073---\073821-Chevron-Central Vacuum Unit #47H\073821-00\073821-00(007)\073821-00(007)GN-DL001.dwg



Source: UDSA FSA Imagery, May 10, 2014

Lat/Long: 32.7970° North, 103.4906° West

0 20 50ft

Coordinate System:
NAD 1983 StatePlane-
New Mexico East (US Feet)

CEMC
LEA COUNTY, NEW MEXICO
CENTRAL VACUUM UNIT No. 47H

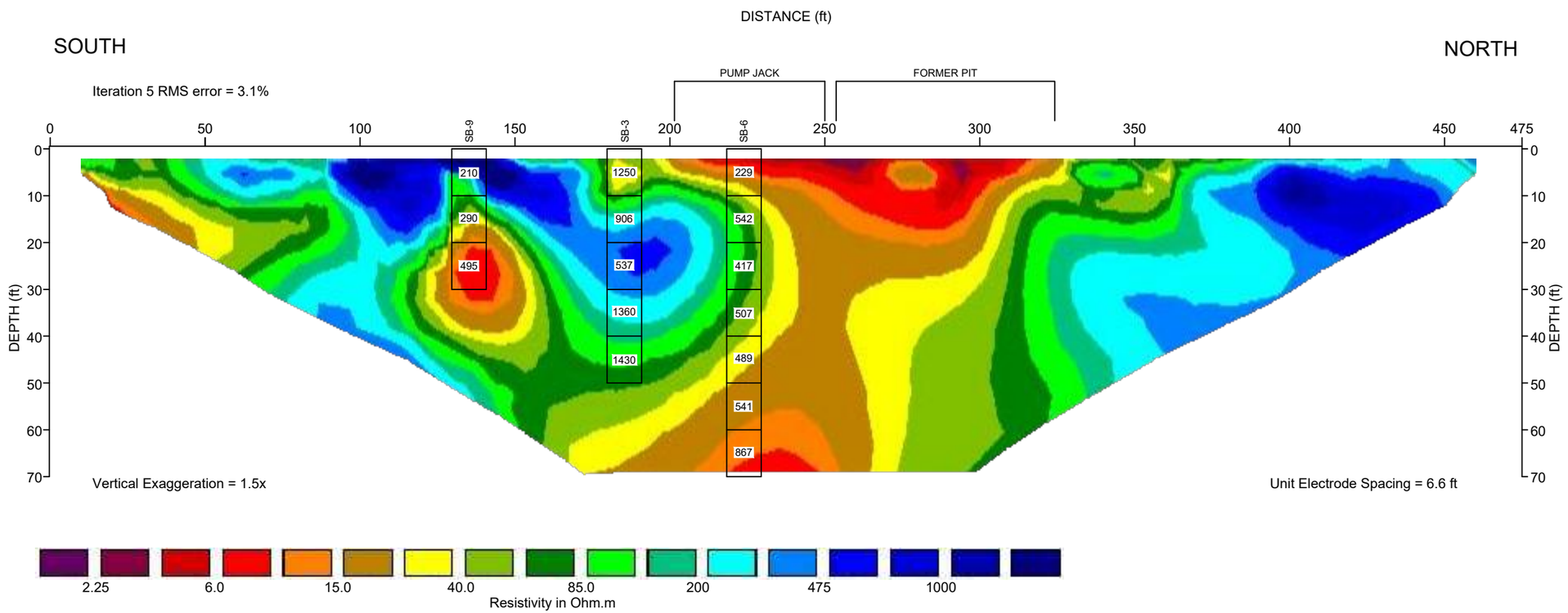
73821-2017
May 3, 2018

EM31 GEOPHYSICAL INVESTIGATION

FIGURE 4

CAD File: P:\drawings\73000s\73821\73821-REPORTS\73821-2017(007)\73821-2017(007)GN\73821-2017(007)GN-WA004.dwg

CVU 47H - LINE 1
INVERSE MODEL RESISTIVITY SECTION



NOTE:

210
290 - CHLORIDE CONCENTRATION (mg/Kg)
495

0 20 40ft

CEMC
LEA COUNTY, NEW MEXICO
CENTRAL VACUUM UNIT No. 47H

GEOPHYSICAL INVESTIGATION
ELECTRICAL RESISTIVITY SURVEY RESULTS

73821-2017
May 3, 2018

FIGURE 5

CAD File: P:\drawings\73000s\73821\73821-REPORTS\73821-2017(007)\73821-2017(007)GN\73821-2017(007)GN-WA005.dwg

NOTES:

1. All analytical results reported in (mg/kg) milligrams per kilogram.
2. Highlighted cells indicate concentrations exceeding guidance RRALs of 250 mg/kg for chloride.
3. Floor Sample-031015 indicates a 5-point composite sample of excavation floor.
4. Depicted remedial closure activity boundaries pretain to previously submitted pit closure report under NMOCD C-144 Form.

Floor Sample-031015[3]	
Date	03/15/15
Depth	Surface
BTEX	<0.00128
TPH (GRO & DRO)	<19.2
Chloride	4.38

NE-47H-031915	
Date	03/19/15
Depth	5'
Chloride	15.4

E-47H-031915	
Date	03/19/15
Depth	5'
Chloride	15.7

SE-47H-031915	
Date	03/19/15
Depth	5'
Chloride	13.6

NE-47H

E-47H

SE-47H

SB-7 10/18/17											
Depth	0.5-1'	4-5'	9-10'	19-20'	29-30'	39-40'	49-50'	59-60'	69-70'	79-80'	89-90'
Chloride	1,180	475	966	1,940	1,020	848	625	114	58.7	58.5	62.4

SB-7

SB-5 10/18/17					
Depth	0.5-1'	4-5'	9-10'	19-20'	29-30'
Chloride	3760	585	167	135	17.4

SB-5

SB-6

SB-6 10/18/17												
Depth	0.5-1'	4-5'	9-10'	19-20'	19-20'*	29-30'	39-40'	49-50'	59-60'	69-70'	79-80'	89-90'
Chloride	1,970	384	229	542	536*	417	507	489	541	867	1,140	1,120

SB-4

SB-4 12/17/12					
Depth	10'	20'	30'	40'	50'
Chloride	1,230	754	274	209	87.3

SB-3

SB-3 12/17/12					
Depth	10'	20'	30'	40'	50'
Chloride	1,250	906	537	1,360	1,430

SB-2

SB-2 08/19/15										
Depth	0'	5'	10'	15'	20'	30'	40'	50'	60'	80'
Chloride	1,540	1,470	462	611	680	306	539	554	1,090	101

SB-8

SB-8 10/18/17						
Depth	0.5-1'	4-5'	9-10'	19-20'	29-30'	39-40'
Chloride	11.7	108	1,570	28.8	125	41.5

SB-9

SB-9 10/18/17					
Depth	0.5-1'	4-5'	9-10'	19-20'	29-30'
Chloride	210	290	495	227	12.7

SB-1

SB-1 08/19/15								
Depth	0'	5'	10'	15'	20'	30'	40'	50'
Chloride	75.7	421	17.8	123	97.0	93.7	68.9	15.5

SB-10

SB-10 10/18/17					
Depth	0.5-1'	4-5'	9-10'	19-20'	29-30'
Chloride	39.8	243	322	39.2	108

LEGEND

- Soil Boring Location - 2012
- Soil Boring Location - 2015
- Soil Boring Location - 2017
- Excavated Sidewall Sample Location
- 5-point Composite Sample Location
- Approximate Boundary of Remedial Closure Activities
- Approximate Excavated Area
- Backfill and Remediated Area
- Depth — Depth of Sample (ft)
- BTEX — Benzene, Toluene, Ethylbenzene and Xylenes Concentration
- TPH — Total Petroleum Hydrocarbons Concentration
- DRO — TPH as Diesel Range Organics
- GRO — TPH as Gasoline Range Organics
- * — Indicates Duplicate Sample

Source: UDSA FSA Imagery, May 10, 2014

Lat/Long: 32.7970° North, 103.4906° West

0 20 40ft

Coordinate System:
NAD 1983 StatePlane-
New Mexico East (US Feet)

Sample ID — SB-4 12/17/12 — Sample Date
Depth 10' — Sample Depth (ft)
Chloride 1,230 — Sample Result (mg/kg)

GHD

CEMC
LEA COUNTY, NEW MEXICO
CENTRAL VACUUM UNIT No. 47H

CHLORIDE ANALYTICAL RESULTS MAP

073821-00

May 3, 2018

FIGURE 6

CAD File: I:\CAD\Files\07----\073---\073821-Chevron-Central Vacuum Unit #47H\073821-00\073821-00(007)\073821-00(007)GN-DL001.dwg

Tables

TABLE 1

SUMMARY OF SOIL ANALYTICAL RESULTS
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
CENTRAL VACUUM UNIT 47H
LEA COUNTY, NEW MEXICO

Sample ID	Depth (feet)	Date	Chlorides mg/kg
NMOCD Recommended Remediation Action Levels			**250**
SB-1	0	8/19/15	75.7
	5	8/19/15	**421**
	10	8/19/15	17.8
	15	8/19/15	123
	20	8/19/15	97
	30	8/19/15	93.7
	40	8/19/15	68.9
	50	8/19/15	15.5
SB-2	0	8/19/15	**1540**
	5	8/19/15	**1470**
	10	8/19/15	**462**
	15	8/19/15	**611**
	20	8/19/15	**680**
	30	8/19/15	**306**
	40	8/19/15	**539**
	50	8/19/15	**554**
	60	8/19/15	**1090**
	80	8/19/15	101
SB-3	10	12/17/12	**1250**
	20	12/17/12	**906**
	30	12/17/12	**537**
	40	12/17/12	**1360**
	50	12/17/12	**1430**
SB-4	10	12/17/12	**1230**
	20	12/17/12	**754**
	30	12/17/12	**274**
	40	12/17/12	209
	50	12/17/12	87.3
SB-5	0.5-1	10/18/17	**3760**
	4-5	10/18/17	**585**
	9-10	10/18/17	167
	19-20	10/18/17	135
	29-30	10/18/17	17.4
SB-6	0.5-1	10/18/17	**1970**
	4-5	10/18/17	**384**
	9-10	10/18/17	229
	19-20	10/18/17	**542**
Dup	19-20	10/18/17	**536**
	29-30	10/18/17	**417**
	39-40	10/18/17	**507**
	49-50	10/18/17	**489**
	59-60	10/18/17	**541**
	69-70	10/18/17	**867**
	79-80	10/18/17	**1140**
	89-90	10/18/17	**1120**

TABLE 1

SUMMARY OF SOIL ANALYTICAL RESULTS
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
CENTRAL VACUUM UNIT 47H
LEA COUNTY, NEW MEXICO

Sample ID	Depth (feet)	Date	Chlorides mg/kg
NMOCD Recommended Remediation Action Levels			**250**
SB-7	0.5-1	10/18/17	**1180**
	4-5	10/18/17	**475**
	9-10	10/18/17	**966**
	19-20	10/18/17	**1940**
	29-30	10/18/17	**1020**
	39-40	10/18/17	**848**
	49-50	10/18/17	**625**
	59-60	10/18/17	114
	69-70	10/18/17	58.7
	79-80	10/18/17	58.5
	89-90	10/18/17	62.4
SB-8	0.5-1	10/18/17	11.7
	4-5	10/18/17	108
	9-10	10/18/17	**1570**
	19-20	10/18/17	28.8
	29-30	10/18/17	125
	39-40	10/18/17	41.5
SB-9	0.5-1	10/18/17	210
	4-5	10/18/17	**290**
	9-10	10/18/17	**495**
	19-20	10/18/17	227
	29-30	10/18/17	12.7
SB-10	0.5-1	10/18/17	39.8
	4-5	10/18/17	243
	9-10	10/18/17	**322**
	19-20	10/18/17	39.2
	29-30	10/18/17	108

Notes:

1. All analytical results reported in (mg/kg) milligrams per kilogram
2. Chloride analyses by EPA Method 300
3. Highlighted cells indicate concentrations exceeding guidance RRALs
4. bgs - below ground surface
5. Depth of samples reported in feet

Appendices

Appendix A
SB-5 though SB-10 Boring Logs

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: CVU-47H
PROJECT NUMBER: 73821
CLIENT: Chevron
LOCATION: Hobbs

HOLE DESIGNATION: SB-5
DATE COMPLETED: 18 October 2017
DRILLING METHOD: Air Rotary
FIELD PERSONNEL: Rebecca Jones

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	SAMPLE DEPTH (ft)	SAMPLE INTERVAL	SAMPLE REC (ft)	SAMPLE PP (tsf)	SAMPLE Chlorides (kg/mg)
	Caliche Pad	1.00					
	CALICHE, light brown, dry						
5	SILTY SAND (SM), light brown, some caliche, dry	5.00	4-5		1.0		166
10	SILTY SAND (SM), light brown, some caliche, dry	10.00	9-10		1.0		46
15							
20	SILTY SAND (SM), reddish brown, some caliche, dry	20.00	19-20		1.0		<28
25							
30	SILTY SAND (SM), reddish brown, some caliche, dry	30.00	29-30		1.0		<28
35							
40	SILTY SAND (SM), reddish brown, some caliche, dry	40.00	39-40		1.0		<28
45							
50	SILTY SAND (SM), reddish brown, some caliche, dry	50.00	49-50		1.0		<28
55							
60	SILTY SAND (SM), reddish brown, some caliche, dry	60.00	59-60		1.0		<28
65							
70	SILTY SAND (SM), reddish brown, some caliche, dry	70.00	69-70		1.0		<28
75							
80	SILTY SAND (SM), reddish brown, some caliche, damp	80.00	79-80		1.0		<28
85							
90	END OF BOREHOLE @ 90.0ft BGS	90.00	89-90		1.0		<28
95							

NOTES:

LABORATORY ANALYSIS ( )

OVERBURDEN LOG 073821.GPJ CRA_CORP.GDT 11/4/18

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: CVU-47H
PROJECT NUMBER: 73821
CLIENT: Chevron
LOCATION: Hobbs

HOLE DESIGNATION: SB-6
DATE COMPLETED: 18 October 2017
DRILLING METHOD: Air Rotary
FIELD PERSONNEL: Rebecca Jones

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	SAMPLE DEPTH (ft)	SAMPLE INTERVAL	SAMPLE REC (ft)	SAMPLE PP (tsf)	SAMPLE Chlorides (kg/mg)
	Caliche Pad	1.00					
	SANDY CLAY (SC), red						
5	SILTY SAND (SM), light brown, some caliche, dry	5.00	4-5		1.0		99
10	SILTY SAND (SM), light brown, some caliche, dry	10.00	9-10		1.0		74
15							
20	SILTY SAND (SM), light brown, some caliche, dry	20.00	19-20		1.0		141
25							
30	SILTY SAND (SM), light brown, some caliche, dry	30.00	29-30		1.0		119
35							
40	SILTY SAND (SM), light brown, some caliche, dry	40.00	39-40		1.0		141
45							
50	SILTY SAND (SM), light brown, some caliche, dry	50.00	49-50		1.0		130
55							
60	SILTY SAND (SM), reddish brown, some caliche, dry	60.00	59-60		1.0		141
65							
70	SILTY SAND (SM), reddish brown, some caliche, dry	70.00	69-70		1.0		210
75							
80	SILTY SAND (SM), reddish brown, some caliche, damp	80.00	79-80		1.0		210
85							
90	END OF BOREHOLE @ 90.0ft BGS	90.00	89-90		1.0		109
95							

NOTES:

LABORATORY ANALYSIS ( )

OVERBURDEN LOG 073821.GPJ CRA_CORP.GDT 11/4/18

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: CVU-47H
PROJECT NUMBER: 73821
CLIENT: Chevron
LOCATION: Hobbs

HOLE DESIGNATION: SB-7
DATE COMPLETED: 18 October 2017
DRILLING METHOD: Air Rotary
FIELD PERSONNEL: Rebecca Jones

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	SAMPLE DEPTH (ft)	SAMPLE INTERVAL	SAMPLE REC (ft)	SAMPLE PP (tsf)	SAMPLE Chlorides (kg/mg)
	Top soil	1.00					
	CALICHE, light brown, dry						
5	SILTY SAND (SM), light brown, some caliche, dry	5.00	4-5		1.0		32
10	SILTY SAND (SM), light brown, some caliche, dry	10.00	9-10		1.0		182
15							
20	SILTY SAND (SM), light brown, some caliche, dry	20.00	19-20		1.0		496
25							
30	SILTY SAND (SM), light reddish brown, some caliche, dry	30.00	29-30		1.0		229
35							
40	SILTY SAND (SM), light reddish brown, some caliche, dry	40.00	39-40		1.0		196
45							
50	SILTY SAND (SM), light reddish brown, some caliche, dry	50.00	49-50		1.0		143
55							
60	SILTY SAND (SM), light reddish brown, some caliche, dry	60.00	59-60		1.0		28
65							
70	SILTY SAND (SM), light reddish brown, some caliche, dry	70.00	69-70		1.0		<28
75							
80	SILTY SAND (SM), reddish brown, some caliche, damp	80.00	79-80		1.0		<28
85							
90	END OF BOREHOLE @ 90.0ft BGS	90.00	89-90		1.0		<28
95							

NOTES:

LABORATORY ANALYSIS ( )

OVERBURDEN LOG 073821.GPJ CRA_CORP.GDT 11/4/18

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: CVU-47H
PROJECT NUMBER: 73821
CLIENT: Chevron
LOCATION: Hobbs

HOLE DESIGNATION: SB-8
DATE COMPLETED: 18 October 2017
DRILLING METHOD: Air Rotary
FIELD PERSONNEL: Rebecca Jones

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	SAMPLE DEPTH (ft)	SAMPLE INTERVAL	SAMPLE REC (ft)	SAMPLE PP (tsf)	SAMPLE Chlorides (kg/mg)
	Top soil	1.00					
	CALICHE, light brown, dry						
5	SILTY SAND (SM), light brown, some caliche, damp	5.00	4-5		1.0		32
10	SILTY SAND (SM), light brown, some caliche, dry	10.00	9-10		1.0		634
15							
20	SILTY SAND (SM), light brown, some caliche, dry	20.00	19-20		1.0		496
25							
30	SILTY SAND (SM), light brown, some caliche, dry	30.00	29-30		1.0		49
35							
40	SILTY SAND (SM), light reddish brown, some caliche, dry	40.00	39-40		1.0		<28
45							
50	SILTY SAND (SM), reddish brown, some caliche, dry	50.00	49-50		1.0		<28
55							
60	SILTY SAND (SM), reddish brown, some caliche, dry	60.00	59-60		1.0		<28
65							
70	SILTY SAND (SM), reddish brown, some caliche, dry	70.00	69-70		1.0		<28
75							
80	SILTY SAND (SM), reddish brown, some caliche, damp	80.00	79-80		1.0		<28
85							
90	END OF BOREHOLE @ 90.0ft BGS	90.00	89-90		1.0		<28
95							

NOTES:

LABORATORY ANALYSIS ( )

OVERBURDEN LOG 073821.GPJ CRA_CORP.GDT 11/4/18

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: CVU-47H
PROJECT NUMBER: 73821
CLIENT: Chevron
LOCATION: Hobbs

HOLE DESIGNATION: SB-9
DATE COMPLETED: 18 October 2017
DRILLING METHOD: Air Rotary
FIELD PERSONNEL: Rebecca Jones

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	SAMPLE DEPTH (ft)	SAMPLE INTERVAL	SAMPLE REC (ft)	SAMPLE PP (tsf)
0	Top soil	1.00				
	CALICHE, reddish brown, dry					
5	SILTY SAND (SM), light brown, some caliche, damp	5.00	4-5		1.0	
10	SILTY SAND (SM), light brown, some caliche, damp	10.00	9-10		1.0	
15						
20	SILTY SAND (SM), reddish brown, some caliche, dry	20.00	19-20		1.0	
25						
30	SILTY SAND (SM), reddish brown, some caliche, dry	30.00	29-30		1.0	
35						
40	SILTY SAND (SM), reddish brown, some caliche, slightly damp	40.00	39-40		1.0	
45						
50	SILTY SAND (SM), reddish brown, some caliche, dry	50.00	49-50		1.0	
55						
60	SILTY SAND (SM), reddish brown, some caliche, dry	60.00	59-60		1.0	
65						
70	SILTY SAND (SM), reddish brown, some caliche, dry	70.00	69-70		1.0	
75						
80	SILTY SAND (SM), reddish brown, some caliche, damp	80.00	79-80		1.0	
85						
90	END OF BOREHOLE @ 90.0ft BGS	90.00	89-90		1.0	
95						

NOTES:

LABORATORY ANALYSIS ⬭

OVERBURDEN LOG 073821.GPJ CRA_CORP.GDT 11/4/18

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: CVU-47H
PROJECT NUMBER: 73821
CLIENT: Chevron
LOCATION: Hobbs

HOLE DESIGNATION: SB-10
DATE COMPLETED: 18 October 2017
DRILLING METHOD: Air Rotary
FIELD PERSONNEL: Rebecca Jones

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	SAMPLE DEPTH (ft)	SAMPLE INTERVAL	SAMPLE REC (ft)	SAMPLE PP (tsf)	SAMPLE Chlorides (kg/mg)
	Top Soil	1.00					
	CALICHE, light brown, dry						
5	SILTY SAND (SM), light brown, some caliche, dry	5.00	4-5		1.0		55
10	CALICHE, white, dry	10.00	9-10		1.0		76
15							
20	SILTY SAND (SM), reddish brown, some caliche, dry	20.00	19-20		1.0		<28
25							
30	SILTY SAND (SM), reddish brown, some caliche, dry	30.00	29-30		1.0		28
35							
40	SILTY SAND (SM), reddish brown, some caliche, dry	40.00	39-40		1.0		<28
45							
50	SILTY SAND (SM), reddish brown, some caliche, dry	50.00	49-50		1.0		<28
55							
60	SILTY SAND (SM), reddish brown, some caliche, dry	60.00	59-60		1.0		<28
65							
70	SILTY SAND (SM), reddish brown, some caliche, dry	70.00	69-70		1.0		<28
75							
80	SILTY SAND (SM), reddish brown, some caliche, damp	80.00	79-80		1.0		<28
85							
90	END OF BOREHOLE @ 90.0ft BGS	90.00	89-90		1.0		<28
95							

NOTES:

LABORATORY ANALYSIS ( )

OVERBURDEN LOG 073821.GPJ CRA_CORP.GDT 11/4/18

Appendix B
Soil Laboratory Analytical Report

Certificate of Analysis Summary 566200

GHD Services, INC- Midland, Midland, TX

Project Name: CVU-47H

Project Id: 073821
Contact: Scott Foord
Project Location: Lea County, NM

Date Received in Lab: Fri Oct-20-17 04:20 pm
Report Date: 20-NOV-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	566200-001		566200-002		566200-003		566200-004		566200-005		566200-012	
	Field Id:	SB-9-S-0.5-1-171018		SB-9-S-4-5-171018		SB-9-S-9-10-171018		SB-9-S-19-20-1-171018		SB-9-S-29-30-171018		SB-10-S-0.5-1-171018	
	Depth:	0.5-1		4-5		9-10		19-20		29-30		0.5-1	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Oct-18-17 09:40		Oct-18-17 09:45		Oct-18-17 09:50		Oct-18-17 09:55		Oct-18-17 10:00		Oct-18-17 11:30	
Chloride by EPA 300	***Extracted:***	Oct-31-17 12:30		Oct-31-17 12:30		Oct-31-17 12:30		Oct-31-17 12:30		Nov-07-17 09:00		Oct-31-17 12:30	
	Analyzed:	Oct-31-17 17:13		Oct-31-17 17:32		Oct-31-17 17:39		Oct-31-17 17:58		Nov-07-17 11:08		Oct-31-17 18:04	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		210	4.99	290	4.96	495	5.00	227	4.94	12.7	5.00	39.8	4.90
Percent Moisture	***Extracted:***												
	Analyzed:	Oct-25-17 09:50		Oct-25-17 09:50		Oct-25-17 09:50		Oct-25-17 09:50		Nov-06-17 08:50		Oct-25-17 09:50	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		5.63	1.00	4.08	1.00	5.94	1.00	8.91	1.00	5.63	1.00	7.82	1.00

Mike Kimmel
Client Services Manager

Certificate of Analysis Summary 566200

GHD Services, INC- Midland, Midland, TX

Project Name: CVU-47H

Project Id: 073821
Contact: Scott Foord
Project Location: Lea County, NM

Date Received in Lab: Fri Oct-20-17 04:20 pm
Report Date: 20-NOV-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	566200-013		566200-014		566200-015		566200-016		566200-023		566200-024	
	Field Id:	SB-10-S-4-5-171018		SB-10-S-9-10-171018		SB-10-S-19-20-171018		SB-10-S-29-30-171018		SB-8-S-0.5-1-171018		SB-8-S-4-5-171018	
	Depth:	4-5		9-10		19-20		29-30		0.5-1		4-5	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Oct-18-17 11:35		Oct-18-17 11:40		Oct-18-17 11:45		Oct-18-17 11:50		Oct-18-17 10:35		Oct-18-17 10:40	
Chloride by EPA 300	***Extracted:***	Oct-31-17 12:30		Oct-31-17 12:30		Oct-31-17 12:30		Nov-07-17 09:00		Oct-31-17 12:30		Oct-31-17 12:30	
	Analyzed:	Oct-31-17 18:10		Oct-31-17 18:17		Oct-31-17 18:23		Nov-07-17 11:15		Oct-31-17 18:30		Oct-31-17 18:36	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		243	4.92	322	4.98	39.2	4.92	108	4.90	11.7	4.93	108	4.93
Percent Moisture	***Extracted:***												
	Analyzed:	Oct-25-17 09:50		Oct-25-17 09:50		Oct-25-17 09:50		Nov-06-17 08:50		Oct-25-17 09:50		Oct-25-17 09:50	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		5.06	1.00	6.11	1.00	1.42	1.00	5.19	1.00	12.3	1.00	5.49	1.00

Mike Kimmel
Client Services Manager

Certificate of Analysis Summary 566200

GHD Services, INC- Midland, Midland, TX

Project Name: CVU-47H

Project Id: 073821
Contact: Scott Foord
Project Location: Lea County, NM

Date Received in Lab: Fri Oct-20-17 04:20 pm
Report Date: 20-NOV-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	566200-025		566200-026		566200-027		566200-028		566200-034		566200-035	
	Field Id:	SB-8-S-9-10-70-171018		SB-8-S-19-20-171018		SB-8-S-29-30-171018		SB-8-S-39-40-171018		SB-7-S-0.5-1-171018		SB-7-S-4-5-171018	
	Depth:	9-10		19-20		29-30		39-40		0.5-1		4-5	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Oct-18-17 10:45		Oct-18-17 10:50		Oct-18-17 10:55		Oct-18-17 11:00		Oct-18-17 12:25		Oct-18-17 12:30	
Chloride by EPA 300	***Extracted:***	Oct-31-17 13:30		Oct-31-17 13:30		Oct-31-17 13:30		Oct-31-17 13:30		Oct-31-17 13:30		Oct-31-17 13:30	
	Analyzed:	Oct-31-17 19:33		Oct-31-17 19:14		Oct-31-17 19:40		Oct-31-17 19:46		Oct-31-17 19:52		Oct-31-17 20:12	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		1570	24.6	28.8	4.90	125	4.96	41.5	4.92	1180	25.0	475	5.00
Percent Moisture	***Extracted:***												
	Analyzed:	Oct-25-17 09:50		Oct-25-17 09:50		Oct-23-17 12:00		Oct-23-17 12:00		Oct-23-17 12:00		Oct-23-17 12:00	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		13.1	1.00	5.39	1.00	4.56	1.00	5.46	1.00	2.86	1.00	8.07	1.00

Mike Kimmel
Client Services Manager

Certificate of Analysis Summary 566200

GHD Services, INC- Midland, Midland, TX

Project Name: CVU-47H

Project Id: 073821
Contact: Scott Foord
Project Location: Lea County, NM

Date Received in Lab: Fri Oct-20-17 04:20 pm
Report Date: 20-NOV-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	566200-036		566200-037		566200-038		566200-039		566200-040		566200-041	
	Field Id:	SB-7-S-9-10-171018		SB-7-S-19-20-171018		SB-7-S-29-30-171018		SB-7-S-39-40-171018		SB-7-S-49-50-171018		SB-7-S-59-60-171018	
	Depth:	9-10		19-20		29-30		39-40		49-50		59-60	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Oct-18-17 12:35		Oct-18-17 12:40		Oct-18-17 12:45		Oct-18-17 12:50		Oct-18-17 12:55		Oct-18-17 13:00	
Chloride by EPA 300	***Extracted:***	Oct-31-17 13:30		Oct-31-17 13:30		Oct-31-17 13:30		Oct-31-17 13:30		Oct-31-17 13:30		Nov-07-17 09:00	
	Analyzed:	Oct-31-17 20:18		Oct-31-17 20:24		Oct-31-17 20:31		Oct-31-17 20:37		Oct-31-17 20:43		Nov-07-17 11:21	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		966	24.5	1940	25.0	1020	4.96	848	4.93	625	4.98	114	4.91
Percent Moisture	***Extracted:***												
	Analyzed:	Oct-23-17 12:00		Oct-23-17 12:00		Oct-23-17 12:00		Oct-23-17 12:00		Oct-23-17 12:00		Nov-06-17 08:50	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		10.1	1.00	10.9	1.00	5.88	1.00	5.92	1.00	5.42	1.00	5.15	1.00

Mike Kimmel
Client Services Manager

Certificate of Analysis Summary 566200

GHD Services, INC- Midland, Midland, TX

Project Name: CVU-47H

Project Id: 073821
Contact: Scott Foord
Project Location: Lea County, NM

Date Received in Lab: Fri Oct-20-17 04:20 pm
Report Date: 20-NOV-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	566200-042		566200-043		566200-044		566200-045		566200-046		566200-047	
	Field Id:	SB-7-S-69-70-171018		SB-7-S-79-80-171018		SB-7-S-89-90-171018		SB-6-S-0.5-1-171018		SB-6-S-4-5-171018		SB-6-S-9-10-171018	
	Depth:	69-70		79-80		89-90		0.5-1		4-5		9-10	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Oct-18-17 13:05		Oct-18-17 13:10		Oct-18-17 13:15		Oct-18-17 13:20		Oct-18-17 13:25		Oct-18-17 13:30	
Chloride by EPA 300	***Extracted:***	Nov-07-17 09:00		Nov-07-17 09:00		Nov-07-17 09:00		Oct-31-17 13:30		Oct-31-17 13:30		Oct-31-17 13:30	
	Analyzed:	Nov-07-17 11:40		Nov-07-17 11:46		Nov-07-17 12:06		Oct-31-17 21:03		Oct-31-17 21:09		Oct-31-17 21:28	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		58.7	4.98	58.5	4.99	62.4	4.92	1970	24.6	384	49.2	229	24.7
Percent Moisture	***Extracted:***												
	Analyzed:	Nov-06-17 08:50		Nov-06-17 08:50		Nov-06-17 08:50		Oct-23-17 12:00		Oct-23-17 12:00		Oct-23-17 12:00	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		4.99	1.00	4.76	1.00	4.22	1.00	3.41	1.00	28.3	1.00	8.72	1.00

Mike Kimmel
Client Services Manager

Certificate of Analysis Summary 566200

GHD Services, INC- Midland, Midland, TX

Project Name: CVU-47H

Project Id: 073821
Contact: Scott Foord
Project Location: Lea County, NM

Date Received in Lab: Fri Oct-20-17 04:20 pm
Report Date: 20-NOV-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	566200-048		566200-049		566200-050		566200-051		566200-052		566200-053	
	Field Id:	SB-6-S-19-20-171018		SB-6-S-29-30-171018		SB-6-S-39-40-171018		SB-6-S-49-50-171018		SB-6-S-59-60-171018		SB-6-S-69-70-171018	
	Depth:	19-20		29-30		39-40		49-50		59-60		69-70	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Oct-18-17 13:35		Oct-18-17 13:40		Oct-18-17 13:45		Oct-18-17 13:50		Oct-18-17 13:55		Oct-18-17 14:00	
Chloride by EPA 300	***Extracted:***	Oct-31-17 13:30		Nov-07-17 09:00		Nov-07-17 09:00		Nov-07-17 09:00		Nov-09-17 16:00		Nov-09-17 16:00	
	Analyzed:	Oct-31-17 21:34		Nov-07-17 12:12		Nov-07-17 12:18		Nov-07-17 12:25		Nov-09-17 23:11		Nov-10-17 00:02	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		542	4.95	417	4.99	507	4.98	489	4.95	541	4.98	867	24.9
Percent Moisture	***Extracted:***												
	Analyzed:	Oct-23-17 12:00		Nov-06-17 08:50		Nov-06-17 08:50		Nov-06-17 08:50		Nov-10-17 17:04		Nov-10-17 17:04	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		8.52	1.00	6.33	1.00	6.63	1.00	6.02	1.00	6.28	1.00	6.00	1.00

Mike Kimmel
Client Services Manager

Certificate of Analysis Summary 566200

GHD Services, INC- Midland, Midland, TX

Project Name: CVU-47H

Project Id: 073821
Contact: Scott Foord
Project Location: Lea County, NM

Date Received in Lab: Fri Oct-20-17 04:20 pm
Report Date: 20-NOV-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	566200-054		566200-055		566200-056		566200-057		566200-058		566200-059	
	Field Id:	SB-6-S-79-80-171018		SB-6-S-89-90-171018		SB-5-S-0.5-1-171018		SB-5-S-4-5-171018		SB-5-S-9-10-171018		SB-5-S-19-20-171018	
	Depth:	79-80		89-90		0.5-1		4-5		9-10		19-20	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Oct-18-17 14:05		Oct-18-17 14:10		Oct-18-17 14:15		Oct-18-17 14:20		Oct-18-17 14:25		Oct-18-17 14:30	
Chloride by EPA 300	***Extracted:***	Nov-10-17 09:00		Nov-15-17 14:00		Oct-31-17 13:30		Oct-31-17 13:30		Oct-31-17 13:30		Nov-01-17 15:00	
	Analyzed:	Nov-10-17 12:04		Nov-15-17 20:56		Oct-31-17 21:41		Oct-31-17 21:47		Oct-31-17 21:54		Nov-01-17 16:25	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		1140	24.9	1120	24.7	3760	49.9	585	4.97	167	4.97	135	4.92
Percent Moisture	***Extracted:***												
	Analyzed:	Nov-10-17 17:04		Nov-16-17 15:30		Oct-23-17 12:00		Oct-23-17 12:00		Oct-23-17 12:00		Oct-23-17 12:00	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		6.00	1.00	4.87	1.00	7.91	1.00	5.11	1.00	2.29	1.00	5.81	1.00

Mike Kimmel
Client Services Manager

Certificate of Analysis Summary 566200

GHD Services, INC- Midland, Midland, TX

Project Name: CVU-47H

Project Id: 073821
Contact: Scott Foord
Project Location: Lea County, NM

Date Received in Lab: Fri Oct-20-17 04:20 pm
Report Date: 20-NOV-17
Project Manager: Kelsey Brooks

Analysis Requested									
	Lab Id:	566200-060		566200-067					
	Field Id:	SB-5-S-29-30-171018		DUP-1-171018					
	Depth:	29-30							
	Matrix:	SOIL		SOIL					
	Sampled:	Oct-18-17 14:35		Oct-18-17 00:00					
Chloride by EPA 300	***Extracted:***	Nov-07-17 09:00		Nov-01-17 15:00					
	Analyzed:	Nov-07-17 12:31		Nov-01-17 16:34					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Chloride		17.4	4.98	536	4.98				
Percent Moisture	***Extracted:***								
	Analyzed:	Nov-06-17 08:50		Oct-23-17 12:00					
	Units/RL:	%	RL	%	RL				
Percent Moisture		5.63	1.00	8.19	1.00				

Mike Kimmel
Client Services Manager

Analytical Report 566200

for

GHD Services, INC- Midland

Project Manager: Scott Foord

CVU-47H

073821

20-NOV-17

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-17-23), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab code: TX01468):
Texas (T104704295-17-15), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab code: TX00127): Texas (T104704221-17-12)
Xenco-Lubbock (EPA Lab code: TX00139): Texas (T104704219-17-16)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-17-13)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

20-NOV-17

Project Manager: **Scott Foord**
GHD Services, INC- Midland
2135 S Loop 250 W
Midland, TX 79703

Reference: XENCO Report No(s): **566200**
CVU-47H
Project Address: Lea County, NM

Scott Foord:

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) 566200. 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. 566200 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,

Mike Kimmel
Client Services Manager

Sample Cross Reference 566200

GHD Services, INC- Midland, Midland, TX

CVU-47H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SB-9-S-0.5-1-171018	S	10-18-17 09:40	0.5 - 1	566200-001
SB-9-S-4-5-171018	S	10-18-17 09:45	4 - 5	566200-002
SB-9-S-9-10-171018	S	10-18-17 09:50	9 - 10	566200-003
SB-9-S-19-20-1-171018	S	10-18-17 09:55	19 - 20	566200-004
SB-9-S-29-30-171018	S	10-18-17 10:00	29 - 30	566200-005
SB-10-S-0.5-1-171018	S	10-18-17 11:30	0.5 - 1	566200-012
SB-10-S-4-5-171018	S	10-18-17 11:35	4 - 5	566200-013
SB-10-S-9-10-171018	S	10-18-17 11:40	9 - 10	566200-014
SB-10-S-19-20-171018	S	10-18-17 11:45	19 - 20	566200-015
SB-10-S-29-30-171018	S	10-18-17 11:50	29 - 30	566200-016
SB-8-S-0.5-1-171018	S	10-18-17 10:35	0.5 - 1	566200-023
SB-8-S-4-5-171018	S	10-18-17 10:40	4 - 5	566200-024
SB-8-S-9-10-70-171018	S	10-18-17 10:45	9 - 10	566200-025
SB-8-S-19-20-171018	S	10-18-17 10:50	19 - 20	566200-026
SB-8-S-29-30-171018	S	10-18-17 10:55	29 - 30	566200-027
SB-8-S-39-40-171018	S	10-18-17 11:00	39 - 40	566200-028
SB-7-S-0.5-1-171018	S	10-18-17 12:25	0.5 - 1	566200-034
SB-7-S-4-5-171018	S	10-18-17 12:30	4 - 5	566200-035
SB-7-S-9-10-171018	S	10-18-17 12:35	9 - 10	566200-036
SB-7-S-19-20-171018	S	10-18-17 12:40	19 - 20	566200-037
SB-7-S-29-30-171018	S	10-18-17 12:45	29 - 30	566200-038
SB-7-S-39-40-171018	S	10-18-17 12:50	39 - 40	566200-039
SB-7-S-49-50-171018	S	10-18-17 12:55	49 - 50	566200-040
SB-7-S-59-60-171018	S	10-18-17 13:00	59 - 60	566200-041
SB-7-S-69-70-171018	S	10-18-17 13:05	69 - 70	566200-042
SB-7-S-79-80-171018	S	10-18-17 13:10	79 - 80	566200-043
SB-7-S-89-90-171018	S	10-18-17 13:15	89 - 90	566200-044
SB-6-S-0.5-1-171018	S	10-18-17 13:20	0.5 - 1	566200-045
SB-6-S-4-5-171018	S	10-18-17 13:25	4 - 5	566200-046
SB-6-S-9-10-171018	S	10-18-17 13:30	9 - 10	566200-047
SB-6-S-19-20-171018	S	10-18-17 13:35	19 - 20	566200-048
SB-6-S-29-30-171018	S	10-18-17 13:40	29 - 30	566200-049
SB-6-S-39-40-171018	S	10-18-17 13:45	39 - 40	566200-050
SB-6-S-49-50-171018	S	10-18-17 13:50	49 - 50	566200-051
SB-6-S-59-60-171018	S	10-18-17 13:55	59 - 60	566200-052
SB-6-S-69-70-171018	S	10-18-17 14:00	69 - 70	566200-053
SB-6-S-79-80-171018	S	10-18-17 14:05	79 - 80	566200-054
SB-6-S-89-90-171018	S	10-18-17 14:10	89 - 90	566200-055
SB-5-S-0.5-1-171018	S	10-18-17 14:15	0.5 - 1	566200-056
SB-5-S-4-5-171018	S	10-18-17 14:20	4 - 5	566200-057
SB-5-S-9-10-171018	S	10-18-17 14:25	9 - 10	566200-058
SB-5-S-19-20-171018	S	10-18-17 14:30	19 - 20	566200-059
SB-5-S-29-30-171018	S	10-18-17 14:35	29 - 30	566200-060

DUP-1-171018	S	10-18-17 00:00		566200-067
SB-9-S-39-40-171018	S	10-18-17 10:05	39 - 40	Not Analyzed
SB-9-S-49-50-171018	S	10-18-17 10:10	49 - 50	Not Analyzed
SB-9-S-59-60-171018	S	10-18-17 10:15	59 - 60	Not Analyzed
SB-9-S-69-70-171018	S	10-18-17 10:20	69 - 70	Not Analyzed
SB-9-S-79-80-171018	S	10-18-17 10:25	79 - 80	Not Analyzed
SB-9-S-89-90-171018	S	10-18-17 10:30	89 - 90	Not Analyzed
SB-10-S-39-40-171018	S	10-18-17 11:55	39 - 40	Not Analyzed
SB-10-S-49-50-171018	S	10-18-17 12:00	49 - 50	Not Analyzed
SB-10-S-59-60-171018	S	10-18-17 12:05	59 - 60	Not Analyzed
SB-10-S-69-70-171018	S	10-18-17 12:10	69 - 70	Not Analyzed
SB-10-S-79-80-171018	S	10-18-17 12:15	79 - 80	Not Analyzed
SB-10-S-89-90-171018	S	10-18-17 12:20	89 - 90	Not Analyzed
SB-8-S-49-50-171018	S	10-18-17 11:05	49 - 50	Not Analyzed
SB-8-S-59-60-171018	S	10-18-17 11:10	59 - 60	Not Analyzed
SB-8-S-69-70-171018	S	10-18-17 11:15	69 - 70	Not Analyzed
SB-8-S-79-80-171018	S	10-18-17 11:20	79 - 80	Not Analyzed
SB-8-S-89-90-171018	S	10-18-17 11:25	89 - 90	Not Analyzed
SB-5-S-39-40-171018	S	10-18-17 14:40	39 - 40	Not Analyzed
SB-5-S-49-50-171018	S	10-18-17 14:45	49 - 50	Not Analyzed
SB-5-S-59-60-171018	S	10-18-17 14:50	59 - 60	Not Analyzed
SB-5-S-69-70-171018	S	10-18-17 14:55	69 - 70	Not Analyzed
SB-5-S-79-80-171018	S	10-18-17 15:00	79 - 80	Not Analyzed
SB-5-S-89-90-171018	S	10-18-17 15:05	89 - 90	Not Analyzed

Sample receipt non conformances and comments:

SB-5 (29-30);SB-6 (29-30), (39-40), (49-50); SB-7 (59-60), (69-70), (79-80), (89-90); SB-9 (29-30); SB-10 (29-30)- Released from hold per Scott Foord e-mail 11/02/17-- KB
11/09/17: SB-6(59-60)/(69-70), and (79-80) removed from hold to analyze by Scott Foord.
11/13/17: Revised report to incorporate additional samples taken off of hold to analyze per client.
11/14/17: Add SB-6(89-90) Per Scott Foord.

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3032046 Chloride by EPA 300
Lab Sample ID 566200-040 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 566200-025, -026, -027, -028, -034, -035, -036, -037, -038, -039, -040, -045, -046, -047, -048, -056, -057, -058.
The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3032955 Inorganic Anions by EPA 300
Lab Sample ID 567942-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 566200-052, -053.
The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Certificate of Analytical Results 566200

GHD Services, INC- Midland, Midland, TX

CVU-47H

Sample Id:	**SB-9-S-0.5-1-171018**	Matrix:	Soil	Date Received:	10.20.17 16.20
Lab Sample Id:	566200-001	Date Collected:	10.18.17 09.40	Sample Depth:	0.5 - 1
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	10.31.17 12.30	Basis:	Wet Weight
Seq Number:	3032042				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**210**	4.99	mg/kg	10.31.17 17.13		1

Certificate of Analytical Results 566200

GHD Services, INC- Midland, Midland, TX

CVU-47H

Sample Id:	**SB-9-S-4-5-171018**	Matrix:	Soil	Date Received:	10.20.17 16.20
Lab Sample Id:	566200-002	Date Collected:	10.18.17 09.45	Sample Depth:	4 - 5
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	10.31.17 12.30	Basis:	Wet Weight
Seq Number:	3032042				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**290**	4.96	mg/kg	10.31.17 17.32		1

Certificate of Analytical Results 566200

GHD Services, INC- Midland, Midland, TX

CVU-47H

Sample Id:	**SB-9-S-9-10-171018**	Matrix:	Soil	Date Received:	10.20.17 16.20
Lab Sample Id:	566200-003	Date Collected:	10.18.17 09.50	Sample Depth:	9 - 10
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	10.31.17 12.30	Basis:	Wet Weight
Seq Number:	3032042				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**495**	5.00	mg/kg	10.31.17 17.39		1

Certificate of Analytical Results 566200

GHD Services, INC- Midland, Midland, TX

CVU-47H

Sample Id:	**SB-9-S-19-20-1-171018**	Matrix:	Soil	Date Received:	10.20.17 16.20
Lab Sample Id:	566200-004	Date Collected:	10.18.17 09.55	Sample Depth:	19 - 20
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	10.31.17 12.30	Basis:	Wet Weight
Seq Number:	3032042				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**227**	4.94	mg/kg	10.31.17 17.58		1

Certificate of Analytical Results 566200

GHD Services, INC- Midland, Midland, TX

CVU-47H

Sample Id:	**SB-9-S-29-30-171018**	Matrix:	Soil	Date Received:	10.20.17 16.20
Lab Sample Id:	566200-005	Date Collected:	10.18.17 10.00	Sample Depth:	29 - 30
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.07.17 09.00	Basis:	Wet Weight
Seq Number:	3032684				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**12.7**	5.00	mg/kg	11.07.17 11.08		1

Certificate of Analytical Results 566200

GHD Services, INC- Midland, Midland, TX

CVU-47H

Sample Id:	**SB-10-S-0.5-1-171018**	Matrix:	Soil	Date Received:	10.20.17 16.20
Lab Sample Id:	566200-012	Date Collected:	10.18.17 11.30	Sample Depth:	0.5 - 1
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	10.31.17 12.30	Basis:	Wet Weight
Seq Number:	3032042				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**39.8**	4.90	mg/kg	10.31.17 18.04		1

Certificate of Analytical Results 566200

GHD Services, INC- Midland, Midland, TX

CVU-47H

Sample Id:	**SB-10-S-4-5-171018**	Matrix:	Soil	Date Received:	10.20.17 16.20
Lab Sample Id:	566200-013	Date Collected:	10.18.17 11.35	Sample Depth:	4 - 5
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	10.31.17 12.30	Basis:	Wet Weight
Seq Number:	3032042				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**243**	4.92	mg/kg	10.31.17 18.10		1

Certificate of Analytical Results 566200

GHD Services, INC- Midland, Midland, TX

CVU-47H

Sample Id:	**SB-10-S-9-10-171018**	Matrix:	Soil	Date Received:	10.20.17 16.20
Lab Sample Id:	566200-014	Date Collected:	10.18.17 11.40	Sample Depth:	9 - 10
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	10.31.17 12.30	Basis:	Wet Weight
Seq Number:	3032042				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**322**	4.98	mg/kg	10.31.17 18.17		1

Certificate of Analytical Results 566200

GHD Services, INC- Midland, Midland, TX

CVU-47H

Sample Id:	**SB-10-S-19-20-171018**	Matrix:	Soil	Date Received:	10.20.17 16.20
Lab Sample Id:	566200-015	Date Collected:	10.18.17 11.45	Sample Depth:	19 - 20
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	10.31.17 12.30	Basis:	Wet Weight
Seq Number:	3032042				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**39.2**	4.92	mg/kg	10.31.17 18.23		1

Certificate of Analytical Results 566200

GHD Services, INC- Midland, Midland, TX

CVU-47H

Sample Id:	**SB-10-S-29-30-171018**	Matrix:	Soil	Date Received:	10.20.17 16.20
Lab Sample Id:	566200-016	Date Collected:	10.18.17 11.50	Sample Depth:	29 - 30
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.07.17 09.00	Basis:	Wet Weight
Seq Number:	3032684				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**108**	4.90	mg/kg	11.07.17 11.15		1

Certificate of Analytical Results 566200

GHD Services, INC- Midland, Midland, TX

CVU-47H

Sample Id:	**SB-8-S-0.5-1-171018**	Matrix:	Soil	Date Received:	10.20.17 16.20
Lab Sample Id:	566200-023	Date Collected:	10.18.17 10.35	Sample Depth:	0.5 - 1
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	10.31.17 12.30	Basis:	Wet Weight
Seq Number:	3032042				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**11.7**	4.93	mg/kg	10.31.17 18.30		1

Certificate of Analytical Results 566200

GHD Services, INC- Midland, Midland, TX

CVU-47H

Sample Id:	**SB-8-S-4-5-171018**	Matrix:	Soil	Date Received:	10.20.17 16.20
Lab Sample Id:	566200-024	Date Collected:	10.18.17 10.40	Sample Depth:	4 - 5
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	10.31.17 12.30	Basis:	Wet Weight
Seq Number:	3032042				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**108**	4.93	mg/kg	10.31.17 18.36		1

Certificate of Analytical Results 566200

GHD Services, INC- Midland, Midland, TX

CVU-47H

Sample Id:	**SB-8-S-9-10-70-171018**	Matrix:	Soil	Date Received:	10.20.17 16.20
Lab Sample Id:	566200-025	Date Collected:	10.18.17 10.45	Sample Depth:	9 - 10
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	10.31.17 13.30	Basis:	Wet Weight
Seq Number:	3032046				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1570**	24.6	mg/kg	10.31.17 19.33		5

Certificate of Analytical Results 566200

GHD Services, INC- Midland, Midland, TX

CVU-47H

Sample Id:	**SB-8-S-19-20-171018**	Matrix:	Soil	Date Received:	10.20.17 16.20
Lab Sample Id:	566200-026	Date Collected:	10.18.17 10.50	Sample Depth:	19 - 20
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	10.31.17 13.30	Basis:	Wet Weight
Seq Number:	3032046				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**28.8**	4.90	mg/kg	10.31.17 19.14		1

Certificate of Analytical Results 566200

GHD Services, INC- Midland, Midland, TX

CVU-47H

Sample Id:	**SB-8-S-29-30-171018**	Matrix:	Soil	Date Received:	10.20.17 16.20
Lab Sample Id:	566200-027	Date Collected:	10.18.17 10.55	Sample Depth:	29 - 30
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	10.31.17 13.30	Basis:	Wet Weight
Seq Number:	3032046				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**125**	4.96	mg/kg	10.31.17 19.40		1

Certificate of Analytical Results 566200

GHD Services, INC- Midland, Midland, TX

CVU-47H

Sample Id:	**SB-8-S-39-40-171018**	Matrix:	Soil	Date Received:	10.20.17 16.20
Lab Sample Id:	566200-028	Date Collected:	10.18.17 11.00	Sample Depth:	39 - 40
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	10.31.17 13.30	Basis:	Wet Weight
Seq Number:	3032046				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**41.5**	4.92	mg/kg	10.31.17 19.46		1

Certificate of Analytical Results 566200

GHD Services, INC- Midland, Midland, TX

CVU-47H

Sample Id:	**SB-7-S-0.5-1-171018**	Matrix:	Soil	Date Received:	10.20.17 16.20
Lab Sample Id:	566200-034	Date Collected:	10.18.17 12.25	Sample Depth:	0.5 - 1
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	10.31.17 13.30	Basis:	Wet Weight
Seq Number:	3032046				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1180**	25.0	mg/kg	10.31.17 19.52		5

Certificate of Analytical Results 566200

GHD Services, INC- Midland, Midland, TX

CVU-47H

Sample Id:	**SB-7-S-4-5-171018**	Matrix:	Soil	Date Received:	10.20.17 16.20
Lab Sample Id:	566200-035	Date Collected:	10.18.17 12.30	Sample Depth:	4 - 5
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	10.31.17 13.30	Basis:	Wet Weight
Seq Number:	3032046				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**475**	5.00	mg/kg	10.31.17 20.12		1

Certificate of Analytical Results 566200

GHD Services, INC- Midland, Midland, TX

CVU-47H

Sample Id:	**SB-7-S-9-10-171018**	Matrix:	Soil	Date Received:	10.20.17 16.20
Lab Sample Id:	566200-036	Date Collected:	10.18.17 12.35	Sample Depth:	9 - 10
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	10.31.17 13.30	Basis:	Wet Weight
Seq Number:	3032046				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**966**	24.5	mg/kg	10.31.17 20.18		5

Certificate of Analytical Results 566200

GHD Services, INC- Midland, Midland, TX

CVU-47H

Sample Id:	**SB-7-S-19-20-171018**	Matrix:	Soil	Date Received:	10.20.17 16.20
Lab Sample Id:	566200-037	Date Collected:	10.18.17 12.40	Sample Depth:	19 - 20
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	10.31.17 13.30	Basis:	Wet Weight
Seq Number:	3032046				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1940**	25.0	mg/kg	10.31.17 20.24		5

Certificate of Analytical Results 566200

GHD Services, INC- Midland, Midland, TX

CVU-47H

Sample Id:	**SB-7-S-29-30-171018**	Matrix:	Soil	Date Received:	10.20.17 16.20
Lab Sample Id:	566200-038	Date Collected:	10.18.17 12.45	Sample Depth:	29 - 30
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	10.31.17 13.30	Basis:	Wet Weight
Seq Number:	3032046				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1020**	4.96	mg/kg	10.31.17 20.31		1

Certificate of Analytical Results 566200

GHD Services, INC- Midland, Midland, TX

CVU-47H

Sample Id:	**SB-7-S-39-40-171018**	Matrix:	Soil	Date Received:	10.20.17 16.20
Lab Sample Id:	566200-039	Date Collected:	10.18.17 12.50	Sample Depth:	39 - 40
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	10.31.17 13.30	Basis:	Wet Weight
Seq Number:	3032046				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**848**	4.93	mg/kg	10.31.17 20.37		1

Certificate of Analytical Results 566200

GHD Services, INC- Midland, Midland, TX

CVU-47H

Sample Id:	**SB-7-S-49-50-171018**	Matrix:	Soil	Date Received:	10.20.17 16.20
Lab Sample Id:	566200-040	Date Collected:	10.18.17 12.55	Sample Depth:	49 - 50
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	10.31.17 13.30	Basis:	Wet Weight
Seq Number:	3032046				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**625**	4.98	mg/kg	10.31.17 20.43		1

Certificate of Analytical Results 566200

GHD Services, INC- Midland, Midland, TX

CVU-47H

Sample Id:	**SB-7-S-59-60-171018**	Matrix:	Soil	Date Received:	10.20.17 16.20
Lab Sample Id:	566200-041	Date Collected:	10.18.17 13.00	Sample Depth:	59 - 60
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.07.17 09.00	Basis:	Wet Weight
Seq Number:	3032684				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**114**	4.91	mg/kg	11.07.17 11.21		1

Certificate of Analytical Results 566200

GHD Services, INC- Midland, Midland, TX

CVU-47H

Sample Id:	**SB-7-S-69-70-171018**	Matrix:	Soil	Date Received:	10.20.17 16.20
Lab Sample Id:	566200-042	Date Collected:	10.18.17 13.05	Sample Depth:	69 - 70
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.07.17 09.00	Basis:	Wet Weight
Seq Number:	3032684				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**58.7**	4.98	mg/kg	11.07.17 11.40		1

Certificate of Analytical Results 566200

GHD Services, INC- Midland, Midland, TX

CVU-47H

Sample Id:	**SB-7-S-79-80-171018**	Matrix:	Soil	Date Received:	10.20.17 16.20
Lab Sample Id:	566200-043	Date Collected:	10.18.17 13.10	Sample Depth:	79 - 80
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.07.17 09.00	Basis:	Wet Weight
Seq Number:	3032684				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**58.5**	4.99	mg/kg	11.07.17 11.46		1

Certificate of Analytical Results 566200

GHD Services, INC- Midland, Midland, TX

CVU-47H

Sample Id:	**SB-7-S-89-90-171018**	Matrix:	Soil	Date Received:	10.20.17 16.20
Lab Sample Id:	566200-044	Date Collected:	10.18.17 13.15	Sample Depth:	89 - 90
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.07.17 09.00	Basis:	Wet Weight
Seq Number:	3032684				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**62.4**	4.92	mg/kg	11.07.17 12.06		1

Certificate of Analytical Results 566200

GHD Services, INC- Midland, Midland, TX

CVU-47H

Sample Id:	**SB-6-S-0.5-1-171018**	Matrix:	Soil	Date Received:	10.20.17 16.20
Lab Sample Id:	566200-045	Date Collected:	10.18.17 13.20	Sample Depth:	0.5 - 1
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	10.31.17 13.30	Basis:	Wet Weight
Seq Number:	3032046				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1970**	24.6	mg/kg	10.31.17 21.03		5

Certificate of Analytical Results 566200

GHD Services, INC- Midland, Midland, TX

CVU-47H

Sample Id:	**SB-6-S-4-5-171018**	Matrix:	Soil	Date Received:	10.20.17 16.20
Lab Sample Id:	566200-046	Date Collected:	10.18.17 13.25	Sample Depth:	4 - 5
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	10.31.17 13.30	Basis:	Wet Weight
Seq Number:	3032046				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**384**	49.2	mg/kg	10.31.17 21.09		10

Certificate of Analytical Results 566200

GHD Services, INC- Midland, Midland, TX

CVU-47H

Sample Id:	**SB-6-S-9-10-171018**	Matrix:	Soil	Date Received:	10.20.17 16.20
Lab Sample Id:	566200-047	Date Collected:	10.18.17 13.30	Sample Depth:	9 - 10
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	10.31.17 13.30	Basis:	Wet Weight
Seq Number:	3032046				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**229**	24.7	mg/kg	10.31.17 21.28		5

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GHD Services, INC- Midland, Midland, TX

CVU-47H

Sample Id:	**SB-6-S-19-20-171018**	Matrix:	Soil	Date Received:	10.20.17 16.20
Lab Sample Id:	566200-048	Date Collected:	10.18.17 13.35	Sample Depth:	19 - 20
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	10.31.17 13.30	Basis:	Wet Weight
Seq Number:	3032046				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**542**	4.95	mg/kg	10.31.17 21.34		1

Certificate of Analytical Results 566200

GHD Services, INC- Midland, Midland, TX

CVU-47H

Sample Id:	**SB-6-S-29-30-171018**	Matrix:	Soil	Date Received:	10.20.17 16.20
Lab Sample Id:	566200-049	Date Collected:	10.18.17 13.40	Sample Depth:	29 - 30
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.07.17 09.00	Basis:	Wet Weight
Seq Number:	3032684				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**417**	4.99	mg/kg	11.07.17 12.12		1

Certificate of Analytical Results 566200

GHD Services, INC- Midland, Midland, TX

CVU-47H

Sample Id:	**SB-6-S-39-40-171018**	Matrix:	Soil	Date Received:	10.20.17 16.20
Lab Sample Id:	566200-050	Date Collected:	10.18.17 13.45	Sample Depth:	39 - 40
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.07.17 09.00	Basis:	Wet Weight
Seq Number:	3032684				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**507**	4.98	mg/kg	11.07.17 12.18		1

Certificate of Analytical Results 566200

GHD Services, INC- Midland, Midland, TX

CVU-47H

Sample Id:	**SB-6-S-49-50-171018**	Matrix:	Soil	Date Received:	10.20.17 16.20
Lab Sample Id:	566200-051	Date Collected:	10.18.17 13.50	Sample Depth:	49 - 50
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.07.17 09.00	Basis:	Wet Weight
Seq Number:	3032684				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**489**	4.95	mg/kg	11.07.17 12.25		1

Certificate of Analytical Results 566200

GHD Services, INC- Midland, Midland, TX

CVU-47H

Sample Id:	**SB-6-S-59-60-171018**	Matrix:	Soil	Date Received:	10.20.17 16.20
Lab Sample Id:	566200-052	Date Collected:	10.18.17 13.55	Sample Depth:	59 - 60
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.09.17 16.00	Basis:	Wet Weight
Seq Number:	3032955				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**541**	4.98	mg/kg	11.09.17 23.11		1

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GHD Services, INC- Midland, Midland, TX

CVU-47H

Sample Id:	**SB-6-S-69-70-171018**	Matrix:	Soil	Date Received:	10.20.17 16.20
Lab Sample Id:	566200-053	Date Collected:	10.18.17 14.00	Sample Depth:	69 - 70
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.09.17 16.00	Basis:	Wet Weight
Seq Number:	3032955				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**867**	24.9	mg/kg	11.10.17 00.02		5

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GHD Services, INC- Midland, Midland, TX

CVU-47H

Sample Id:	**SB-6-S-79-80-171018**	Matrix:	Soil	Date Received:	10.20.17 16.20
Lab Sample Id:	566200-054	Date Collected:	10.18.17 14.05	Sample Depth:	79 - 80
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.10.17 09.00	Basis:	Wet Weight
Seq Number:	3032985				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1140**	24.9	mg/kg	11.10.17 12.04		5

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GHD Services, INC- Midland, Midland, TX

CVU-47H

Sample Id:	**SB-6-S-89-90-171018**	Matrix:	Soil	Date Received:	10.20.17 16.20
Lab Sample Id:	566200-055	Date Collected:	10.18.17 14.10	Sample Depth:	89 - 90
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.15.17 14.00	Basis:	Wet Weight
Seq Number:	3033477				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1120**	24.7	mg/kg	11.15.17 20.56		5

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GHD Services, INC- Midland, Midland, TX

CVU-47H

Sample Id:	**SB-5-S-0.5-1-171018**	Matrix:	Soil	Date Received:	10.20.17 16.20
Lab Sample Id:	566200-056	Date Collected:	10.18.17 14.15	Sample Depth:	0.5 - 1
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	10.31.17 13.30	Basis:	Wet Weight
Seq Number:	3032046				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**3760**	49.9	mg/kg	10.31.17 21.41		10

Certificate of Analytical Results 566200

GHD Services, INC- Midland, Midland, TX

CVU-47H

Sample Id:	**SB-5-S-4-5-171018**	Matrix:	Soil	Date Received:	10.20.17 16.20
Lab Sample Id:	566200-057	Date Collected:	10.18.17 14.20	Sample Depth:	4 - 5
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	10.31.17 13.30	Basis:	Wet Weight
Seq Number:	3032046				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**585**	4.97	mg/kg	10.31.17 21.47		1

Certificate of Analytical Results 566200

GHD Services, INC- Midland, Midland, TX

CVU-47H

Sample Id:	**SB-5-S-9-10-171018**	Matrix:	Soil	Date Received:	10.20.17 16.20
Lab Sample Id:	566200-058	Date Collected:	10.18.17 14.25	Sample Depth:	9 - 10
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	10.31.17 13.30	Basis:	Wet Weight
Seq Number:	3032046				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**167**	4.97	mg/kg	10.31.17 21.54		1

Certificate of Analytical Results 566200

GHD Services, INC- Midland, Midland, TX

CVU-47H

Sample Id:	**SB-5-S-19-20-171018**	Matrix:	Soil	Date Received:	10.20.17 16.20
Lab Sample Id:	566200-059	Date Collected:	10.18.17 14.30	Sample Depth:	19 - 20
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.01.17 15.00	Basis:	Wet Weight
Seq Number:	3032120				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**135**	4.92	mg/kg	11.01.17 16.25		1

Certificate of Analytical Results 566200

GHD Services, INC- Midland, Midland, TX

CVU-47H

Sample Id:	**SB-5-S-29-30-171018**	Matrix:	Soil	Date Received:	10.20.17 16.20
Lab Sample Id:	566200-060	Date Collected:	10.18.17 14.35	Sample Depth:	29 - 30
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.07.17 09.00	Basis:	Wet Weight
Seq Number:	3032684				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**17.4**	4.98	mg/kg	11.07.17 12.31		1

Certificate of Analytical Results 566200

GHD Services, INC- Midland, Midland, TX

CVU-47H

Sample Id:	**DUP-1-171018**	Matrix:	Soil	Date Received:	10.20.17 16.20
Lab Sample Id:	566200-067	Date Collected:	10.18.17 00.00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.01.17 15.00	Basis:	Wet Weight
Seq Number:	3032120				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**536**	4.98	mg/kg	11.01.17 16.34		1

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

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

QC Summary 566200

GHD Services, INC- Midland

CVU-47H

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3032042 Matrix: Solid Date Prep: 10.31.17
MB Sample Id: 7633545-1-BLK LCS Sample Id: 7633545-1-BKS LCSD Sample Id: 7633545-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	239	96	238	95	90-110	0	20	mg/kg	10.31.17 15:31	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3032046 Matrix: Solid Date Prep: 10.31.17
MB Sample Id: 7633547-1-BLK LCS Sample Id: 7633547-1-BKS LCSD Sample Id: 7633547-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	242	97	241	96	90-110	0	20	mg/kg	10.31.17 19:01	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3032120 Matrix: Solid Date Prep: 11.01.17
MB Sample Id: 7633554-1-BLK LCS Sample Id: 7633554-1-BKS LCSD Sample Id: 7633554-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	236	94	237	95	90-110	0	20	mg/kg	11.01.17 14:11	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3032684 Matrix: Solid Date Prep: 11.07.17
MB Sample Id: 7633932-1-BLK LCS Sample Id: 7633932-1-BKS LCSD Sample Id: 7633932-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	249	100	257	103	90-110	3	20	mg/kg	11.07.17 09:39	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3032955 Matrix: Solid Date Prep: 11.09.17
MB Sample Id: 7634136-1-BLK LCS Sample Id: 7634136-1-BKS LCSD Sample Id: 7634136-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	255	102	252	101	90-110	1	20	mg/kg	11.09.17 21:29	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3032985 Matrix: Solid Date Prep: 11.10.17
MB Sample Id: 7634159-1-BLK LCS Sample Id: 7634159-1-BKS LCSD Sample Id: 7634159-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	250	100	251	100	90-110	0	20	mg/kg	11.10.17 10:09	

QC Summary 566200

GHD Services, INC- Midland

CVU-47H

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3033477 Matrix: Solid Date Prep: 11.15.17
MB Sample Id: 7634451-1-BLK LCS Sample Id: 7634451-1-BKS LCSD Sample Id: 7634451-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	250	100	250	100	90-110	0	20	mg/kg	11.15.17 19:39	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3032042 Matrix: Soil Date Prep: 10.31.17
Parent Sample Id: 566199-046 MS Sample Id: 566199-046 S MSD Sample Id: 566199-046 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	9.97	249	250	96	252	97	90-110	1	20	mg/kg	10.31.17 15:50	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3032042 Matrix: Soil Date Prep: 10.31.17
Parent Sample Id: 566200-001 MS Sample Id: 566200-001 S MSD Sample Id: 566200-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	210	250	454	98	453	97	90-110	0	20	mg/kg	10.31.17 17:19	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3032046 Matrix: Soil Date Prep: 10.31.17
Parent Sample Id: 566200-026 MS Sample Id: 566200-026 S MSD Sample Id: 566200-026 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	28.8	245	269	98	269	98	90-110	0	20	mg/kg	10.31.17 19:21	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3032046 Matrix: Soil Date Prep: 10.31.17
Parent Sample Id: 566200-040 MS Sample Id: 566200-040 S MSD Sample Id: 566200-040 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	625	249	831	83	843	88	90-110	1	20	mg/kg	10.31.17 20:50	X

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3032120 Matrix: Soil Date Prep: 11.01.17
Parent Sample Id: 566321-005 MS Sample Id: 566321-005 S MSD Sample Id: 566321-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1410	248	1620	85	1620	85	90-110	0	20	mg/kg	11.01.17 18:11	X

QC Summary 566200

GHD Services, INC- Midland

CVU-47H

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3032120 Matrix: Soil Date Prep: 11.01.17
Parent Sample Id: 566976-001 MS Sample Id: 566976-001 S MSD Sample Id: 566976-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	335	248	586	101	585	101	90-110	0	20	mg/kg	11.01.17 16:07	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3032684 Matrix: Soil Date Prep: 11.07.17
Parent Sample Id: 566200-041 MS Sample Id: 566200-041 S MSD Sample Id: 566200-041 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	114	246	368	103	370	104	90-110	1	20	mg/kg	11.07.17 11:27	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3032684 Matrix: Soil Date Prep: 11.07.17
Parent Sample Id: 566954-008 MS Sample Id: 566954-008 S MSD Sample Id: 566954-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	212	246	454	98	454	98	90-110	0	20	mg/kg	11.07.17 09:58	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3032955 Matrix: Soil Date Prep: 11.09.17
Parent Sample Id: 566200-052 MS Sample Id: 566200-052 S MSD Sample Id: 566200-052 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	541	249	763	89	795	102	90-110	4	20	mg/kg	11.09.17 23:17	X

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3032955 Matrix: Soil Date Prep: 11.09.17
Parent Sample Id: 567942-001 MS Sample Id: 567942-001 S MSD Sample Id: 567942-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	90.5	250	346	102	345	102	90-110	0	20	mg/kg	11.09.17 21:48	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3032985 Matrix: Soil Date Prep: 11.10.17
Parent Sample Id: 567962-001 MS Sample Id: 567962-001 S MSD Sample Id: 567962-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	352	249	591	96	587	94	90-110	1	20	mg/kg	11.10.17 11:32	

QC Summary 566200

GHD Services, INC- Midland

CVU-47H

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3032985 Matrix: Soil Date Prep: 11.10.17
Parent Sample Id: 568052-002 MS Sample Id: 568052-002 S MSD Sample Id: 568052-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	7.10	248	265	104	267	105	90-110	1	20	mg/kg	11.10.17 13:02	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3033477 Matrix: Soil Date Prep: 11.15.17
Parent Sample Id: 568380-001 MS Sample Id: 568380-001 S MSD Sample Id: 568380-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	5.24	247	260	103	256	102	90-110	2	20	mg/kg	11.15.17 19:58	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3033477 Matrix: Soil Date Prep: 11.15.17
Parent Sample Id: 568429-004 MS Sample Id: 568429-004 S MSD Sample Id: 568429-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	435	246	654	89	649	87	90-110	1	20	mg/kg	11.15.17 21:27	X

Analytical Method: **Percent Moisture**
Seq Number: 3031257 Matrix: Solid
MB Sample Id: 3031257-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Percent Moisture	<1.00	%	10.23.17 12:00	

Analytical Method: **Percent Moisture**
Seq Number: 3031376 Matrix: Solid
MB Sample Id: 3031376-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Percent Moisture	<1.00	%	10.25.17 09:50	

Analytical Method: **Percent Moisture**
Seq Number: 3032453 Matrix: Solid
MB Sample Id: 3032453-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Percent Moisture	<1.00	%	11.06.17 08:50	

QC Summary 566200

GHD Services, INC- Midland

CVU-47H

Analytical Method: **Percent Moisture**
Seq Number: 3033007 Matrix: Solid
MB Sample Id: 3033007-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Percent Moisture	<1.00	%	11.10.17 17:04	

Analytical Method: **Percent Moisture**
Seq Number: 3033594 Matrix: Solid
MB Sample Id: 3033594-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Percent Moisture	<1.00	%	11.16.17 15:30	

Analytical Method: **Percent Moisture**
Seq Number: 3031257 Matrix: Soil
Parent Sample Id: 566200-038 MD Sample Id: 566200-038 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Percent Moisture	5.88	5.88	0	20	%	10.23.17 12:00	

Analytical Method: **Percent Moisture**
Seq Number: 3031257 Matrix: Soil
Parent Sample Id: 566200-067 MD Sample Id: 566200-067 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Percent Moisture	8.19	7.64	7	20	%	10.23.17 12:00	

Analytical Method: **Percent Moisture**
Seq Number: 3031376 Matrix: Soil
Parent Sample Id: 566200-001 MD Sample Id: 566200-001 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Percent Moisture	5.63	5.65	0	20	%	10.25.17 09:50	

Analytical Method: **Percent Moisture**
Seq Number: 3032453 Matrix: Soil
Parent Sample Id: 566200-005 MD Sample Id: 566200-005 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Percent Moisture	5.63	5.74	2	20	%	11.06.17 08:50	

QC Summary 566200

GHD Services, INC- Midland

CVU-47H

Analytical Method: **Percent Moisture**
Seq Number: 3033007 Matrix: Soil
Parent Sample Id: 566503-053 MD Sample Id: 566503-053 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Percent Moisture	6.07	5.97	2	20	%	11.10.17 17:04	

Analytical Method: **Percent Moisture**
Seq Number: 3033007 Matrix: Soil
Parent Sample Id: 566621-008 MD Sample Id: 566621-008 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Percent Moisture	5.59	5.43	3	20	%	11.10.17 17:04	

Analytical Method: **Percent Moisture**
Seq Number: 3033594 Matrix: Soil
Parent Sample Id: 568558-001 MD Sample Id: 568558-001 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Percent Moisture	23.3	23.1	1	20	%	11.16.17 15:30	

CHAIN OF CUSTODY

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Dallas Texas (214-902-0300)
San Antonio, Texas (210-509-3334)
Midland, Texas (432-704-5251)
Phoenix, Arizona (480-355-0900)
www.xenco.com

Xenco Quote #
Xenco Job # 516200

Client / Reporting Information

Company Name / Branch: GHD/ Houston
Company Address: 6320 Rothway St. #100, Houston TX 77040
Email: Chris.Knight@ghd.com
Phone No: 512-506-8803
Project Contact: Scott.Foord@ghd.com
Samplers's Name Rebecca Jones

Project Information

Project Name/Number: CVU-47H / 073821
Project Location: Lea County, NM
Invoice To:
PO Number:

Analytical Information

Matrix Codes

W = Water
S = Soil/Sed/Solid
GW =Ground Water
DW = Drinking Water
P = Product
SW = Surface water
SL = Sludge
OW =Ocean/Sea Water
WI = Wipe
O = Oil
WW= Waste Water
A = Air

No.	Field ID / Point of Collection	Collection: Sample Depth	Date	Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Chloride	Moisture	Field Comments
1	SB-9-S-0.5-1-171018	0.5-1	10/18/17	940	S	1								1			
2	SB-9-S-4-5-171018	4-5	10/18/17	945	S	1								1			
3	SB-9-S-9-10-171018	9-10	10/18/17	950	S	1								1			
4	SB-9-S-19-20-171018	19-20	10/18/17	955	S	1								1			
5	SB-9-S-29-30-171018	29-30	10/18/17	1000	S	1								1			Hold
6	SB-9-S-39-40-171018	39-40	10/18/17	10005	S	1								1			Hold
7	SB-9-S-49-50-171018	49-50	10/18/17	1010	S	1								1			Hold
8	SB-9-S-59-60-171018	59-60	10/18/17	1015	S	1								1			Hold
9	SB-9-S-69-70-171018	69-70	10/18/17	1020	S	1								1			Hold
10	SB-9-S-79-80-171018	79-80	10/18/17	1025	S	1								1			Hold

Turnaround Time (Business days)

- [ ] Same Day TAT
- [ ] 5 Day TAT
- [ ] Next Day EMERGENCY
- [ ] 7 Day TAT
- [ ] 2 Day EMERGENCY
- [x] Contract TAT
- [ ] 3 Day EMERGENCY

TAT Starts Day received by Lab, if received by 5:00 pm

Data Deliverable Information

- [ ] Level II Std QC
- [ ] Level IV (Full Data Pkg /raw data)
- [ ] Level III Std QC+ Forms
- [ ] TRRP Level IV
- [ ] Level 3 (CLP Forms)
- [ ] UST / RG -411
- [ ] TRRP Checklist

Notes:

FED-EX / UPS: Tracking #

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	Rebecca Jones	10/20/17-0800	Xenco			
2					10/20/17 1620	
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
4						
5	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable	On Ice / Cooler Temp. / Thermo. Corr. Factor
						X

Notice: Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service expenses incurred by the Client if such loses are due to circumstances beyond the control of Xenco. A minimum charge of $75 will be applied to each project. Xenco's liabil previously negotiated under a fully executed client contract.

list of samples and shall not assume any responsibility for any losses or ed will be invoiced at $5 per sample. These terms will be enforced unless

Temp: 5.8 IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 5.6

Final 1.003

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CHAIN OF CUSTODY

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Phoenix, Arizona (480-355-0900)
www.xenco.com

Xenco Quote # | Xenco Job # 510200

Client / Reporting Information

Company Name / Branch: GHD/ Houston
Company Address: 6320 Rothway St. #100, Houston TX 77040
Email: Chris.Knight@ghd.com | Phone No: 512-506-8803
Project Contact: Scott.Foord@ghd.com
Samplers's Name Rebecca Jones

Project Information

Project Name/Number: CVU-47H / 073821
Project Location: Lea County, NM
Invoice To:
PO Number:

Matrix Codes

W = Water
S = Soil/Sed/Solid
GW =Ground Water
DW = Drinking Water
P = Product
SW = Surface water
SL = Sludge
OW =Ocean/Sea Water
WI = Wipe
O = Oil
WW= Waste Water
A = Air

No.	Field ID / Point of Collection	Collection: Sample Depth	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Analytical Information: Chloride	Analytical Information: Moisture	Field Comments
1	SB-9-S-89-90-171018	89-90	10/18/17	1030	S	1								1			Hold
2	SB-10-S-0.5-1-171018	0.5-1	10/18/17	1130	S	1								1			
3	SB-10-S-4-5-171018	4-5	10/18/17	1135	S	1								1			
4	SB-10-S-9-10-171018	9-10	10/18/17	1140	S	1								1			
5	SB-10-S-19-20-171018	19-20	10/18/17	1145	S	1								1			
6	SB-10-S-29-30-171018	29-30	10/18/17	1150	S	1								1			Hold
7	SB-10-S-39-40-171018	39-40	10/18/17	1155	S	1								1			Hold
8	SB-10-S-49-50-171018	49-50	10/18/17	1200	S	1								1			Hold
9	SB-10-S-59-60-171018	59-60	10/18/17	1205	S	1								1			Hold
10	SB-10-S-69-70-171018	69-70	10/18/17	1210	S	1								1			Hold

Turnaround Time (Business days)

- [ ] Same Day TAT
- [ ] 5 Day TAT
- [ ] Next Day EMERGENCY
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TAT Starts Day received by Lab, if received by 5:00 pm

Data Deliverable Information

- [ ] Level II Std QC
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- [ ] Level III Std QC+ Forms
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- [ ] Level 3 (CLP Forms)
- [ ] UST / RG -411
- [ ] TRRP Checklist

Notes:

FED-EX / UPS: Tracking #

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	Rebecca Jones	10/20/17-0800	Xenco			
2					10/21/17	
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
4						
5	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable	On Ice / Cooler Temp. / Thermo. Corr. Factor
						[x]

Notice: Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service, Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the Client if such loses are due to circumstances beyond the control of Xenco. A minimum charge of $75 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by [illegible] not analyzed will be invoiced at $5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.

Temp: 5.8 IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 5.6

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Midland, Texas (432-704-5251)
Phoenix, Arizona (480-355-0900)
www.xenco.com

Xenco Quote # | Xenco Job # 576200

Client / Reporting Information

Company Name / Branch: GHD/ Houston
Company Address: 6320 Rothway St. #100, Houston TX 77040
Email: Chris.Knight@ghd.com | Phone No: 512-506-8803
Project Contact: Scott.Foord@ghd.com
Samplers's Name Rebecca Jones

Project Information

Project Name/Number: CVU-47H / 073821
Project Location: Lea County, NM
Invoice To:
PO Number:

Matrix Codes

W = Water
S = Soil/Sed/Solid
GW =Ground Water
DW = Drinking Water
P = Product
SW = Surface water
SL = Sludge
OW =Ocean/Sea Water
WI = Wipe
O = Oil
WW= Waste Water
A = Air

No.	Field ID / Point of Collection	Collection: Sample Depth	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Analytical Information: Chloride	Moisture	Field Comments
1	SB-10-S-79-80-171018	79-80	10/18/17	1215	S	1								1			Hold
2	SB-10-S-89-90-171018	89-90	10/18/17	1220	S	1								1			Hold
3	SB-8-S-0.5-1-171018	0.5-1	10/18/17	1035	S	1								1			
4	SB-8-S-4-5-171018	4-5	10/18/17	1040	S	1								1			
5	SB-8-S-9-10-171018	9-10	10/18/17	1045	S	1								1			
6	SB-8-S-19-20-171018	19-20	10/18/17	1050	S	1								1			
7	SB-8-S-29-30-171018	29-30	10/18/17	1055	S	1								1			
8	SB-8-S-39-40-171018	39-40	10/18/17	1100	S	1								1			
9	SB-8-S-49-50-171018	49-50	10/18/17	1105	S	1								1			
10	SB-8-S-59-60-171018	59-60	10/18/17	1110	S	1								1			Hold

Turnaround Time (Business days)

- ☐ Same Day TAT
- ☐ 5 Day TAT
- ☐ Next Day EMERGENCY
- ☐ 7 Day TAT
- ☐ 2 Day EMERGENCY
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- ☐ Level III Std QC+ Forms
- ☐ TRRP Level IV
- ☐ Level 3 (CLP Forms)
- ☐ UST / RG -411
- ☐ TRRP Checklist

Notes:

FED-EX / UPS: Tracking #

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	Rebecca Jones	10/20/17 0800	Xenco			
2					10/20/17 1620	
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
4						
5	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable ☐	On Ice ☒ Cooler Temp. Thermo. Corr. Factor

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Temp: 5.8 IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 5.6

CHAIN OF CUSTODY

Page 4 Of 7

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Phoenix, Arizona (480-355-0900)
www.xenco.com

Xenco Quote # | Xenco Job # 5L6200

Client / Reporting Information

Company Name / Branch: GHD/ Houston
Company Address: 6320 Rothway St. #100, Houston TX 77040
Email: Chris.Knight@ghd.com | Phone No: 512-506-8803
Project Contact: Scott.Foord@ghd.com
Samplers's Name Rebecca Jones

Project Information

Project Name/Number: CVU-47H / 073821
Project Location: Lea County, NM
Invoice To:
PO Number:

Analytical Information

Matrix Codes

W = Water
S = Soil/Sed/Solid
GW =Ground Water
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SW = Surface water
SL = Sludge
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1	SB-8-S-69-70-171018	69-70	10/18/17	1115	S	1								1			Hold
2	SB-8-S-79-80-171018	79-80	10/18/17	1120	S	1								1			Hold
3	SB-8-S-89-90-171018	89-90	10/18/17	1125	S	1								1			Hold
4	SB-7-S-0.5-1-171018	0.5-1	10/18/17	1225	S	1								1			
5	SB-7-S-4-5-171018	4-5	10/18/17	1230	S	1								1			
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9	SB-7-S-39-40-171018	39-40	10/18/17	1250	S	1								1			
10	SB-7-S-49-50-171018	49-50	10/18/17	1255	S	1								1			

Turnaround Time (Business days)

- [ ] Same Day TAT
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5	Relinquished by:	Date Time:	Received By: 5	Custody Seal #	Preserved where applicable	On Ice: X — Cooler Temp. — Thermo. Corr. Factor

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CHAIN OF CUSTODY

Page 5 Of 7

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www.xenco.com

Xenco Quote # | Xenco Job # 576200

Client / Reporting Information

Company Name / Branch: GHD/ Houston
Company Address: 6320 Rothway St. #100, Houston TX 77040
Email: Chris.Knight@ghd.com | Phone No: 512-506-8803
Project Contact: Scott.Foord@ghd.com
Samplers's Name Rebecca Jones

Project Information

Project Name/Number: CVU-47H / 073821
Project Location: Lea County, NM
Invoice To:
PO Number:

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3	SB-7-S-79-80-171018	79-80	10/18/17	1310	S	1								1			Hold
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7	SB-6-S-9-10-171018	9-10	10/18/17	1330	S	1								1			
8	SB-6-S-19-20-171018	19-20	10/18/17	1335	S	1								1			
9	SB-6-S-29-30-171018	29-30	10/18/17	1340	S	1								1			
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3	Relinquished by:	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
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CHAIN OF CUSTODY

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www.xenco.com

Xenco Quote #

Xenco Job # 576620

Client / Reporting Information

Company Name / Branch: GHD/ Houston

Company Address: 6320 Rothway St. #100, Houston TX 77040

Email: Chris.Knight@ghd.com

Phone No: 512-506-8803

Project Contact: Scott.Foord@ghd.com

Samplers's Name Rebecca Jones

Project Information

Project Name/Number: CVU-47H / 073821

Project Location: Lea County, NM

Invoice To:

PO Number:

Analytical Information

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8	SB-5-S-9-10-171018	9-10	10/18/17	1425	S	1								1			
9	SB-5-S-19-20-171018	19-20	10/18/17	1430	S	1								1			
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1 Relinquished by Sampler: Rebecca Jones	Date Time: 10/20/17-0800	Received By: 1	Relinquished By: 2	Date Time: 10/20/17 1620	Received By: 2
3 Relinquished by:	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
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CHAIN OF CUSTODY

Page 7 Of 7

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Xenco Quote #

Xenco Job # 576620D

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Email: Chris.Knight@ghd.com

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5	SB-5-S-79-80-171018	79-80	10/18/17	1500	S	1								1			Hold
6	SB-5-S-89-90-171018	89-90	10/18/17	1505	S	1								1			Hold
7	DUP-1-171018	---	10/18/17	----	S	1								1			
8																	
9																	
10																	

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XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: GHD Services, INC- Midland

Date/ Time Received: 10/20/2017 04:20:00 PM

Work Order #: 566200

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)?	5.6
#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)?	**No**
#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: Shawnee Smith Date: 10/23/2017
Shawnee Smith

Checklist reviewed by: Kelsey Brooks Date: 10/23/2017
Kelsey Brooks

Appendix C
2018 Work Plan

July 24, 2018 Reference No. 073821-1

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

Re: 2018 Scope of Work
CVU No. 47H – Produced Water Release (RP-1483)
Lea County, New Mexico

Dear Ms. Yu,

1. Project Information

The Site is located in Unit E, Section 31, Township 16 South, Range 37 East, approximately 5 miles southeast of Lovington in eastern Lea County, New Mexico.

Soil

Information available from various sources including the Petroleum Recovery Research Center (PRRC) Mapping Portal, GHD currently managed groundwater site(s) data, and the United States Geological Survey (USGS) Current Water Database for the Nation, concludes:

a) The depth to groundwater from the deepest impacted soil at the Site is less than 50-feet bgs.

b) The nearest private domestic water source is greater than 200-feet from the release site.

c) The nearest public/municipal water source is greater than 1,000-feet from the release site.

d) The release site lies more than 1,000 horizontal feet from the nearest surface water body.

The NMOCD provides guidance for remediation of contaminants of oil field wastes or products in Guidelines for Remediation of Leaks, Spills, and Releases (August 13, 1993). Consequently, the NMOCD total ranking criteria score is twenty (20) for the Site. The site-specific Recommended Remedial Action Levels (RRALs) applied to this location by the NMOCD are 10 milligrams per kilogram (mg/kg) for benzene; 50 mg/kg for total benzene, toluene, ethylbenzene, and xylenes (BTEX); 100 mg/kg for total petroleum hydrocarbons (TPH); and an NMOCD accepted 600 mg/kg for horizontal and 250 mg/kg for vertical delineation of chlorides.

In an August 28, 2017 telephone conversation between Bernard Bockisch (GHD) and Jim Griswold (NMOCD Environmental Bureau Chief), GHD was informed that the NMOCD is accepting chloride concentrations of 600 mg/kg for the horizontal delineation assessment clean up levels.

GHD
6320 Rothway Street Suite 100 Houston Texas 77040 USA
T 713 734 3090 F 713 734 3391 W http://www.ghd.com/

Groundwater

The NMOCD provides guidance for remediation of contaminants of oil field wastes or products in Guidelines for Remediation of Leaks, Spills, and Releases (August 13, 1993). The guidance requires remediation of groundwater to the human health standards of the NMWQCC set forth in New Mexico Administrative Code 20.6.2.3103. Standards for chloride and total dissolved solids (TDS) are listed below.

Analyte	NMWQCC Standard for Groundwater (mg/L)
Chloride	250
TDS	1,000

In order to further define the horizontal extent of chloride impact, six (6) additional soils borings (SB-5 though SB-10) were advanced to 90 feet below ground surface (bgs) in October 2017 and soil samples were submitted for chloride analysis by EPA Method 300.0. Analytical results associated with assessment activities conducted in 2017 indicated the horizontal and vertical extents of the chloride impact in soil had not been fully delineated to the south and east of the former pit.

2. 2018 Scope of Work

2.1 Task I - Soil Boring and Monitoring Well Installation Activities

Six (6) additional soil borings (SB-11 through SB-16) will be installed to approximately 90 feet bgs to further horizontal and vertical delineation of the chloride impact to soil. Field screening of soil cuttings for chlorides will be performed to guide drilling activities and soil samples will be collected for laboratory analysis. Additionally, GHD is proposing the installation of one 4-inch diameter monitoring well (MW-1) southeast of the impacted area (assumed downgradient) to screen groundwater for chloride impact (see Figure 1). Preparation of a permit application and associated fees for the required NMOSE monitoring well permit will be submitted prior to drilling activities.

Prior to mobilizing drilling equipment to the Site, a utility notification will be made at least 48-hours prior to mobilization. In addition to the utility locate, a geophysical survey will be completed for each of the proposed boring locations.

A hydroexcavator or similar borehole clearance equipment will be used to clear the boring locations with a diameter at least 2 inches greater than the size of the largest drilling tool. The boring will be cleared to 5-feet bgs or refusal. Initially, each boring will be drilled with air-rotary and switched to mud-rotary (monitoring well only) toward the bottom portion of each boring (if necessary). The rig will be operated by a New Mexico licensed water well driller.

Soil samples will be collected at 10-foot intervals. Soil samples will be field screened for chloride concentrations using Hach Chloride Titration strips and evaluated by the field geologist during the sampling event. Selected soil samples will be submitted for laboratory analysis of chloride by EPA Method 300. The total depth and nature of any sampling of soils will be based on results of the chloride field

screening and the professional judgment of the GHD geologist with the intent to establish the depth at which soil concentrations are below the NMOCD accepted 600 mg/kg for horizontal and 250 mg/kg for vertical delineation of chloride. The soil borings will then be backfilled with cuttings up to 10 feet bgs and then filled to the ground surface with hydrated bentonite chips.

One additional soil boring will be installed approximately 20 to 25 feet into the Ogallala Formation (i.e., approximately 125 feet bgs) and completed as the proposed 4 inch monitoring well. A GHD geologist will record the subsurface lithology and any sample data on the well construction diagram/soil boring logs. The total depth and construction of the well and nature of any soil sampling will be based on the professional judgment of the GHD geologist.

Following monitoring well installation activities, the newly installed well (MW-1) will be developed by the driller. Roll off/mud boxes will be located proximate to the proposed well location and drilling and formation fluids, along with drill cuttings, will be containerized. Following waste characterization (estimated at one month), drill cuttings (non-hazardous) will be removed and transported to CEMC-approved Sundance Services, Inc. for disposal.

2.2 Task II – 2018 Groundwater Sampling Event

Following installation and development of MW-1, and prior to purging the well, the static fluid level will be measured with an electric interface probe to the nearest hundredth of a foot. After recording the fluid level, the monitoring well will be profiled using a conductivity meter. Subsequent to well gauging, the monitoring well will be purged using EPA-approved low-flow methodology.

Groundwater sample will be placed on ice in insulated coolers and chilled to a temperature of approximately 4°C (40°F). The coolers will then be sealed for shipment and proper chain-of-custody documentation will accompany the laboratory for analysis of chloride by EPA Method 300 and total dissolved solids (TDS) by Method 2540C.

2.3 Task III - Reporting

Following completion of the field activities detailed above, a report summarizing the results of the additional assessment will be prepared for submittal to NMOCD. The report will include a Site description, project history, description of field events, a discussion of results, and recommendations (if any). Soil and groundwater analytical results collected will be tabulated in data tables and presented graphically using concentration maps. Boring logs and a monitor well construction log for the Site will also be completed.

If you have any questions, please contact me at 713-734-3090.

Sincerely,

GHD

Scott Foord, P.G.
Project Manager

SF/ag/1

Encl.

Attachment: Figure 1 – Proposed Soil Boring and Monitoring Well Location Map

Figure

NOTES:

1. All analytical results reported in (mg/kg) milligrams per kilogram.
2. Yellow shaded cells indicate exceedance.
3. Floor Sample-031015 indicates a 5-point composite sample of excavation floor.
4. Depicted remedial closure activity boundaries pretain to previously submitted pit closure report under NMOCD C-144 Form.

Floor Sample-031015[3]	
Date	03/15/15
Depth	Surface
BTEX	<0.00128
TPH (GRO & DRO)	<19.2
Chloride	4.38

NE-47H-031915	
Date	03/19/15
Depth	5'
Chloride	15.4

E-47H-031915	
Date	03/19/15
Depth	5'
Chloride	15.7

SE-47H-031915	
Date	03/19/15
Depth	5'
Chloride	13.6

NE-47H

E-47H

SE-47H

SB-7 10/18/17											
Depth	0.5-1'	4-5'	9-10'	19-20'	29-30'	39-40'	49-50'	59-60'	69-70'	79-80'	89-90'
Chloride	1,180	475	966	1,940	1,020	848	625	114	58.7	58.5	62.4

SB-7

SB-4 12/17/12					
Depth	10'	20'	30'	40'	50'
Chloride	1,230	754	274	209	87.3

SB-4

SB-5 10/18/17					
Depth	0.5-1'	4-5'	9-10'	19-20'	29-30'
Chloride	3,760	585	167	135	17.4

SB-5

SB-6

SB-6 10/18/17												
Depth	0.5-1'	4-5'	9-10'	19-20'	19-20'*	29-30'	39-40'	49-50'	59-60'	69-70'	79-80'	89-90'
Chloride	1,970	384	229	542	536*	417	507	489	541	867	1,140	1,120

SB-3

SB-2 08/19/15										
Depth	0'	5'	10'	15'	20'	30'	40'	50'	60'	80'
Chloride	1,540	1,470	462	611	680	306	539	554	1,090	101

SB-2

SB-3 12/17/12					
Depth	10'	20'	30'	40'	50'
Chloride	1,250	906	537	1,360	1,430

SB-9

SB-1

SB-10

SB-8 10/18/17						
Depth	0.5-1'	4-5'	9-10'	19-20'	29-30'	39-40'
Chloride	11.7	108	1,570	28.8	125	41.5

SB-8

SB-9 10/18/17					
Depth	0.5-1'	4-5'	9-10'	19-20'	29-30'
Chloride	210	290	495	227	12.7

SB-1 08/19/15								
Depth	0'	5'	10'	15'	20'	30'	40'	50'
Chloride	75.7	421	17.8	123	97.0	93.7	68.9	15.5

SB-10 10/18/17					
Depth	0.5-1'	4-5'	9-10'	19-20'	29-30'
Chloride	39.8	243	322	39.2	108

LEGEND

- Proposed Soil Boring Location
- Proposed Monitoring Well Location
- Soil Boring Location - 2012
- Soil Boring Location - 2015
- Soil Boring Location - 2017
- Excavated Sidewall Sample Location
- 5-point Composite Sample Location
- Approximate Boundary of Remedial Closure Activities
- Approximate Excavated Area
- Backfill and Remediated Area
- Depth — Depth of Sample (ft)
- BTEX — Benzene, Toluene, Ethylbenzene and Xylenes Concentration
- TPH — Total Petroleum Hydrocarbons Concentration
- DRO — TPH as Diesel Range Organics
- GRO — TPH as Gasoline Range Organics
- * — Indicates Duplicate Sample

Source: UDSA FSA Imagery, May 10, 2014

Lat/Long: 32.7970° North, 103.4906° West

0 20 40ft

Coordinate System:
NAD 1983 StatePlane-
New Mexico East (US Feet)

Sample ID — SB-4 12/17/12 — Sample Date
Depth 10' — Sample Depth (ft)
Chloride 1230 — Sample Result (mg/kg)

CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
LEA COUNTY, NEW MEXICO
CENTRAL VACUUM UNIT No. 47H

PROPOSED SOILBORING AND MONITORING WELL LOCATION MAP

073821-00

May 14, 2018

FIGURE 1

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