District I 1625 N. French Dr., Hobbs, NM 88240 District II 811 S. First St., Artesia, NM 88210 District III 1000 Rio Brazos Road, Aztec, NM 87410 District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505 State of New Mexico Energy Minerals and Natural Resources Department

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Page 1 of 204

Incident ID	NPAC0721134644
District RP	1RP-1498
Facility ID	30-025-03831
Application ID	pPAC0721134710

# **Release Notification**

## **Responsible Party**

Responsible Party: Chevron USA Inc.	OGRID 4323
Contact Name: Jason Michelson	Contact Telephone 832.854.5601
Contact email: jmichelson@chevron.com	Incident # (assigned by OCD) NPAC0721134644
Contact mailing address: 1500 Louisiana St. Houston, TX 77002	

### **Location of Release Source**

Latitude <u>32.865882885</u>

Longitude <u>-103.309097904</u>

(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Lovington Paddock Unit 60	Site Type: Injection Well	
Date Release Discovered: 7/13/2007	API# ( <i>if applicable</i> ): 30-025-03831	

Unit Letter	Section	Township	Range	County
F	1	17S	36E	Lea

Surface Owner: State Federal Tribal Private (Name: City of Lovington)

## Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
Produced Water	Volume Released (bbls): 50 bbls	Volume Recovered (bbls): 0 bbls
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	Yes No
Condensate	Volume Released (bbls)	Volume Recovered (bbls)
Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)
	water injection trunkline and cement lined nipple failed	

produced water shortly before midnight. Low pressure alarm activated resulting in call out of lease operator. Leak was isolated and determined no recovery of fluid was possible. Release impacted sandy soil with heavy grass vegetation. City of Lovington personnel were notified Saturday July 14. Emergency one call and excavation of immediate impacted area was conducted Saturday July 14. Initial site assessment has been conducted and delineation plan has been approved.

Chlorides 38,000 Oil Gravity 38

Page	2
1 age	4

#### **Oil Conservation Division**

Incident ID	NPAC0721134644
District RP	1RP-1498
Facility ID	30-025-03831
Application ID	pPAC0721134710

Was this a major release as defined by 19.15.29.7(A) NMAC?	If YES, for what reason(s) does the responsible party consider this a major release? Release was greater than 25 bbls
🛛 Yes 🗌 No	
If YES, was immediate n	otice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?
Yes, Gary Wink was cont	tacted on 7/14/2007

## **Initial Response**

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

 $\boxtimes$  The source of the release has been stopped.

The impacted area has been secured to protect human health and the environment.

Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.

 $\boxtimes$  All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

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

Printed Name: \_\_Jason Michelson\_\_\_\_\_\_ Title: \_\_Operations Lead\_\_\_\_\_

Signature: \_\_\_\_ Clann Milt

email: jmichelson@chevron.com Telephone: 832.854.5601

\_\_\_\_\_ Date: \_9/15/22\_\_\_\_\_

**OCD Only** 

Received by: Date:

Received by OCD: 9/22/2022 6:41:47 AM Form C-141 State of New Mexico

Page 3

Oil Conservation Division

Incident ID	NPAC0721134644
District RP	1RP-1498
Facility ID	30-025-03831
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# Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	<u>107</u> (ft bgs)
Did this release impact groundwater or surface water?	🗌 Yes 🛛 No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	🗌 Yes 🛛 No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	🗌 Yes 🛛 No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	🗌 Yes 🛛 No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	🗌 Yes 🛛 No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	🗌 Yes 🛛 No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	🗌 Yes 🛛 No
Are the lateral extents of the release within 300 feet of a wetland?	🗌 Yes 🛛 No
Are the lateral extents of the release overlying a subsurface mine?	🗌 Yes 🛛 No
Are the lateral extents of the release overlying an unstable area such as karst geology?	🗌 Yes 🛛 No
Are the lateral extents of the release within a 100-year floodplain?	🗌 Yes 🛛 No
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	🗌 Yes 🛛 No

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

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

- Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- Field data
- Data table of soil contaminant concentration data
- Depth to water determination
- Determination of water sources and significant watercourses within <sup>1</sup>/<sub>2</sub>-mile of the lateral extents of the release
- Boring or excavation logs
- Photographs including date and GIS information
- Topographic/Aerial maps
- Laboratory data including chain of custody

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

Received by OCD: 9/22	/2022 6:41:47 AM State of New Mexico			Page 4 of 204
	Oil Conservation Division		Incident ID	NPAC0721134644
Page 4			District RP	1RP-1498
			Facility ID	30-025-03831
			Application ID	pPAC0721134710
regulations all operators public health or the envir failed to adequately inve addition, OCD acceptand and/or regulations. Printed Name:Jaso Signature: email:jmichelson	information given above is true and complete to the l are required to report and/or file certain release noti- ronment. The acceptance of a C-141 report by the C estigate and remediate contamination that pose a three ce of a C-141 report does not relieve the operator of n Michelson	fications and perform co OCD does not relieve the eat to groundwater, surfa responsibility for compl Title:Operatio	prrective actions for rele e operator of liability sh ce water, human health iance with any other fe ons Lead	eases which may endanger ould their operations have or the environment. In deral, state, or local laws
OCD Only Received by:JO	celyn Harimon	Date: 09/2	2/2022	

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**Oil Conservation Division** 

Incident ID	NPAC0721134644
District RP	1RP-1498
Facility ID	30-025-03831
Application ID	pPAC0721134710

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# **Remediation Plan**

<u>Remediation Plan Checklist</u>: Each of the following items must be included in the plan. Detailed description of proposed remediation technique Scaled sitemap with GPS coordinates showing delineation points Estimated volume of material to be remediated Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required) Deferral Requests Only: Each of the following items must be confirmed as part of any request for deferral of remediation. Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction. Extents of contamination must be fully delineated. Contamination does not cause an imminent risk to human health, the environment, or groundwater. I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. Printed Name: \_\_Jason Michelson\_\_\_\_\_ Title: \_\_Operations Lead\_\_\_\_\_ Signature: \_\_\_\_ Aun Min-\_\_\_\_\_ Date: \_\_\_\_9/15/22\_\_\_\_\_ email: \_\_\_\_jmichelson@chevron.com\_\_\_\_\_\_ Telephone: \_\_\_\_\_832.854.5601\_\_\_\_\_\_ OCD Only 09/22/2022 Jocelyn Harimon Received by: \_\_\_\_ Date: Approved Approved with Attached Conditions of Approval Denied Deferral Approved Signature: Date:



Jason Michelson Project Manager Chevron Environmental Management Company 1500 Louisiana Street, #38116 Houston, Texas 77002 Work: 832-854-5601 Cell: 281-660-8564 jmichelson@chevron.com

January 10, 2020

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

#### Re: Lovington Paddock Unit No. 60 Well Site Case No. 1RP-1498 2018 Site Assessment Report Lea County, New Mexico

Dear whom it concerns,

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

Lovington Paddock Unit No. 60 Well Site 1RP-1498 2018 Site Assessment Report

The submittal was prepared by GHD Services, Inc. (GHD) on behalf of Chevron Environmental Management Company (CEMC).

Please do not hesitate to call Scott Foord with Arcadis U.S., Inc., the current consultant, at 713-953-4853 or myself at 832-854-5601, should you have any questions.

Sincerely, la

(Jason Michelson

Encl. Lovington Paddock Unit No. 60 Well Site 1RP-1498 2018 Site Assessment Report

C.C. Amy Barnhill, Chevron/MCBU

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# 2018 Site Assessment Report

Lovington Paddock Unit 60 Produced Water Release RP-1498 Lea County, New Mexico

# Chevron Environmental Management Company





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Figure 2	Site Aerial Map
Figure 3	Site Details Map
Figure 4	Chloride Analytical Results Map

# Table Index

Table 1	Summary of Soil Analytical Results
Table 2	Summary of Groundwater Analytical Results

# **Appendix Index**

Appendix A	SB-11 through SB-16 Soil Boring Logs
Appendix B	Soil and Groundwater Laboratory Analytical Reports
Appendix C	2019 Remediation Work Plan

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# 1. Introduction

On behalf of Chevron Environmental Management Company (CEMC), GHD Services Inc. (GHD) has prepared this report summarizing site assessment activities conducted at the Lovington Paddock Unit (LPU) 60 site (hereafter referred to as the "Site"). The Site is located in Unit F, Section 1, Township 17 South, Range 36 East, approximately 5 miles southeast of the City of Lovington (COL) in Lea County, New Mexico. The land surface is owned by the COL, and the minerals are managed by the State of New Mexico. The location of the Site is identified on the vicinity map on Figure 1 and on the aerial map on Figure 2.

# 2. Regulatory Criteria

#### 2.1 Soil

Historical subsurface investigation activities were completed in accordance with the Guidelines for Remediation of Leaks, Spills, and Releases Rule 19.15.29 New Mexico Administrative Code (NMAC) from the New Mexico Oil Conservation Division (NMOCD) dated August 13, 1993. The former the site-specific Recommended Remedial Action Levels (RRALs) previously applied to this location by the NMOCD were 10 milligrams per kilogram (mg/kg) for benzene, 50 mg/kg for total BTEX, 100 mg/kg for total TPH, and ranging from 250 to 600 mg/kg historically for chloride.

Rule 19.15.29 was revised and reissued on August 14, 2018. The following criteria (below) from Table 1 within NMAC 19.15.29.12 were utilized to determine site-specific screening limits.

Minimum depth below any point within the horizontal boundary of the release to ground water less than 10,000 mg/l TDS	Constituent	Limit*
>100 feet	Chloride**	20,000 mg/kg
	TPH (GRO+DRO+MRO)	2,500 mg/kg
	GRO+DRO	1,000 mg/kg
	BTEX	50 mg/kg
	Benzene	10 mg/kg

\* Numerical limits or natural background level, whichever is greater.

\*\* This applies to release of produced water or other fluids which may contain chloride.

Localized depth to groundwater was confirmed to be approximately 107 feet below ground surface (bgs) in 2018 based on the gauging data collected from site monitoring wells MW-1 and MW-2. The boring log for recently installed MW-2 is included in Appendix A. Additionally, information available from various sources including the Petroleum Recovery Research Center (PRRC) Mapping Portal, currently managed groundwater site(s) data by GHD, and the United States Geological Survey (USGS) Current Water Database for the Nation, concludes:

- 1. the depth to groundwater at the Site is greater than 100-feet bgs;
- 2. the site is not within 300 feet of any continuously flowing watercourse;



- 3. the site is not within 200 feet of any lakebed, sinkhole or playa lake;
- 4. the site is not within 300 feet of an occupied permanent residence, school, etc.;
- 5. the site is not within 500 feet of a spring or private, domestic fresh water well;
- 6. the site is not within 1,000 feet of any fresh water well or spring;
- 7. the site is not within incorporated municipal boundaries or within a defined municipal fresh water well field;
- 8. the site is not within 300 feet of a wetland;
- 9. the site is not within an area overlying a subsurface mine;
- 10. the site is not within an unstable area; and
- 11. the site is not within a 100-year floodplain.

Consequently, the anticipated site-specific screening limits to be applied to this location by the NMOCD based on the revised Rule are <u>10 mg/kg for benzene</u>, <u>50 mg/kg for total BTEX</u>, <u>2,500 mg/kg for total TPH</u>, and <u>20,000 mg/kg for chloride</u>.

Per 19.15.29.13, Restoration, Reclamation, and Re-vegetation, the impacted area must be remediated a minimum of 4-feet bgs with non-waste containing, uncontaminated, earthen material with chloride concentrations less than 600 mg/kg. Soil cover must consist of topsoil at a thickness comparable to background topsoil thicknesses, or one foot of suitable earthen material capable of establishing and maintaining vegetation at the site. Reclamation is considered complete when all disturbed areas have established vegetative cover with a life-form ratio of plus or minus 50 percent of pre-remedial levels, and plant cover of a minimum of 70 percent of previous levels, excluding noxious weeds.

#### 2.2 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 New Mexico Water Quality Control Commission (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

# 3. Background

CEMC submitted a C-141 Form to the NMOCD dated July 24, 2007 reporting a release of approximately 50 barrels of produced brine from the failure of a water injection trunkline. The approximate affected area was estimated at 2,950 square feet. NMOCD incident number RP-1498 was assigned by the NMOCD Hobbs office.



Shallow soil samples were collected in August 2010 from two locations (T-1 & T-2) in the affected area at depths of approximately 2.5 feet bgs. Sample analyses included total petroleum hydrocarbons (TPH); benzene, toluene, ethylbenzene, and xylenes (BTEX); and chloride. TPH and BTEX concentrations were below laboratory detection limits in the upper sample intervals of T-1 and T-2 (0-1 feet and 0-0.5 feet, respectively), and therefore were not analyzed at the deeper interval. However, chloride results at location T-1 exceeded the historic RRAL of 250 mg/kg at both intervals.

In May 2011, Harrison Cooper, Inc. (HCI) advanced five soil borings (SB-1 through SB-5) utilizing an air-rotary drilling rig to depths of approximately 40 feet bgs. Soil samples were collected at five-foot intervals at depths ranging from 20 to 40 feet bgs (pending chloride field screening results) within each of the five soil borings. Soil samples were submitted for analysis of chloride by EPA Method 300. Laboratory analytical results for chloride indicated that the vertical extent of impact was not yet defined to the historic RRALs in borings SB-2, SB-3, and SB-5. On June 27, 2012, GHD and CEMC met at the NMOCD District 1 Hobbs office to discuss the path forward for the Site. The NMOCD requested additional assessment be completed to further assess the vertical extent of chloride impacts.

In December 2012, under the supervision of GHD, HCI advanced two additional borings (SB-2b and SB-5b) to depths of 70 feet bgs utilizing an air-rotary drilling rig. Soil samples were collected at 10-foot intervals from depths of 40 to 70 feet bgs and submitted for analysis of chloride by EPA Method 300 in an effort to delineate the vertical extent of chloride impacts. Chloride concentrations above the historic RRAL were reported in both soil borings. Groundwater was not encountered in either boring. Soil analytical results are included in Table 1 and soil boring locations are depicted on Figure 3.

Monitoring well MW-1 was installed in October 2016 to assess potential groundwater impact in follow-up to soil analytical results reported during previous assessment activities. No soil samples were collected during MW-1 installation activities. The depth to groundwater was confirmed at the Site at 101 feet bgs. Chloride concentrations reported for the groundwater sample collected from MW-1 in October 2016 were below the NMWQCC standard of 250 milligrams per liter (mg/L).

In May 2017, MW-1 was re-sampled and results were again below the NMWQCC standard of 250 mg/L. In October 2017, six additional soil borings (SB-6 through SB-11) were advanced at the Site and analytical analyses performed in an attempt to fully delineate the horizontal extents of chloride impact to soil.

Analytical results associated with assessment activities conducted from 2011 through 2017 indicated that the horizontal and vertical extent of chloride impact in soil had not been fully delineated to the historic RRALs. In September 2018, nine additional soil borings (SB-12 through SB-20) were advanced at the Site and analytical analyses performed in an attempt to fully delineate the horizontal extent of chloride impact to soil. One monitoring well (MW-2) was also installed in September 2018 per NMOCD request in order to further asses groundwater conditions present at the site. Groundwater samples were collected from MW-1 and MW-2 in October 2018. Results from the 2018 assessment activities are summarized in the following sections.



# 4. Soil Assessment

In order to further define the horizontal extent of chloride impact, nine additional soils borings (SB-12 though SB-20) were installed in September 2018, 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, HCI, a New Mexico-licensed water well driller, and GHD mobilized to the Site to begin drilling activities on September 7, 2018. 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-12 though SB-20 were advanced to 90 feet bgs. Site details and boring locations are shown on Figure 3.

Soil samples were collected at 3-4 feet bgs, and then at ten-foot intervals starting at 9-10 feet bgs within each of the nine 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.

Chloride screening was accomplished in the field by mixing soil samples with distilled water, then testing the rinsate using Hach<sup>®</sup> chloride test strips. The soil types observed during drilling of SB-12 through SB-20 consisted primarily of silty sands and caliche. The soils were logged in accordance with the Unified Soil Classification System, and soil boring logs are provided in Appendix A.

#### 4.1 Soil Sampling Analytical Results - 2018

A soil analytical summary of results from September 2018 is presented in Table 1. A Site Details and Analytical Results Map is presented as Figure 4.

• All samples analyzed were <u>below</u> the NMOCD 19.15.29 Restoration Requirements (600 mg/kg within the first 4 feet bgs, and below 20,000 mg/kg within the deeper sample intervals).

# 5. Groundwater Assessment

#### 5.1 Monitoring Well Installation

MW-2 was completed with four-inch diameter, schedule 40 polyvinyl chloride (PVC) casing, 30 feet of 0.010-inch PVC machine-slotted screen, a 20/40 sand filter pack overlain by a bentonite seal extending up to 10 feet bgs, and riser casing extending above the ground surface. The well was completed at the surface with a stick-up protective casing set in an approximate 2 feet by 2 feet concrete pad. The well was developed by bailing and pumping.

Preliminary gauging data indicated that groundwater was present at approximately 107 feet below the top of casing. The well was developed by removal of sufficient volumes of water to clear the well casing and annulus of sediment. Very turbid water was removed with a 3-inch diameter bailer. Following bailing, well development was completed by pumping at 9 gallons per minute with a submersible pump. Approximately 300 gallons of water were removed during well development.



The boring log, well construction diagram, and the State Well Report are provided in Appendix A.

#### 5.2 Groundwater Sampling

Depth to groundwater was measured in MW-1 and MW-2 to the nearest hundredth of a foot (107.10 feet) and (107.32 feet), respectively, from the top of casing using an electronic water level meter on October 31, 2018. Field equipment was decontaminated with an Alconox <sup>™</sup> wash and distilled water rinse before beginning field activities and between gauging of each monitoring well.

MW-1 and MW-2 were sampled using a bladder pump and low-flow sampling methodology. The samples were placed in laboratory-supplied containers and chilled on ice in an insulated cooler. The samples were delivered under chain-of-custody documentation to Xenco Laboratories of Midland, Texas for analysis of chloride by EPA method 300 and total dissolved solids (TDS) by method SM 2540C.

#### 5.3 Groundwater Analytical Results

Chloride was reported at a concentration of 59.5 mg/L from the groundwater sample collected from MW-1, and 39.2 mg/L from MW-2, which are both below the 250 mg/L standard. TDS was reported at a concentration of 429 mg/L from the sample collected from MW-1, and 386 mg/L from MW-2, which are both below the 1,000 mg/L standard.

Groundwater analytical results for chloride and TDS are summarized in Table 2 in reference to NMWQCC standards. The laboratory analytical report is provided in Appendix B.

# 6. Summary of Findings

Evaluation of the analytical data obtained from soil assessment and delineation activities performed from 2012 through 2018 indicate horizontal and vertical delineation of chloride impacts has been achieved at the Site to support remediation activities (excavation). The depth to groundwater was determined to be 107.10 feet below top of casing at MW-1 and 107.32 feet below top of casing at MW-2, confirming that depth to groundwater at the Site is greater than 100 feet bgs. Chloride and TDS concentrations were not detected in groundwater above NMWQCC standards for either monitoring well (MW-1 or MW-2).

# 7. 2019 Assessment Activities

Lateral and horizontal delineation have been completed at the Site. Soil remediation activities (excavation) per NMAC 19.15.29.13 will be conducted to remove chloride-impacted soil within upper 4 feet bgs at the Site following NMOCD approval of the 2019 Remediation Work Plan attached as Appendix C of this report. Additionally, GHD would like to request permission to plug and abandon monitoring wells MW-1 and MW-2.

Received by OCD: 9/22/2022 6:41:47 AM



All of Which is Respectfully Submitted,

GHD

Paige Hall Project Manager Raaj U. Patel, P.G. Program Manager

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# **Figures**

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Source: ESRI 1999 Aerial Photograph





CEMC LEA COUNTY, NEW MEXICO LPU-60 RELEASE

Lat/Long: 32.866167° North, 103.309028° West

073817-2018 Dec 4, 2018

## SITE LOCATION MAP

#### CAD File: H/CAD/Files/07\_073-073917-CEMC-LPU #60073817-2018/073817-2018(006)GN-DL002.dwg Released to Imaging: 3/8/2024 3:23:25 PM

FIGURE 2

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CEMC LEA COUNTY, NEW MEXICO LPU-60 RELEASE

SITE DETAILS MAP

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A STATE	At a start of the
14 14 1	
	LEGEND Boring Location (May 2011 / December 2012)
	Boring Location (October 2017) Boring Location (2018)

LEGEND
Boring Location (May 2011 / December 2012)
Boring Location (October 2017)
Boring Location (2018)
Sample Trench (August 2010)
Monitoring Well Location

Lat/Long: 32.866167° North, 103.309028° West

073817-2018 Dec 4, 2018

# 3:23:25 PM

# FIGURE 3



AM

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70' 80' 90' 138 49.40 85.90	
34-35'         39-40'           465         531           SB-17         09/11/18           30'         40'         50'           19.40         20.20         19.20	60'         70'         80'         90'           19.60         20.10         19.40         19.70
SB-11         10/24/17           29-30'         39-40'         49-50'           530         496         477           10'         20'         30'           3         433         116         40.1	59-60'         69-70'         79-80'         89-90'           398         283         223         352           SB-16         09/11/18         40'         50'         60'         70'         80'         90'           0         22.30         37         19.60         37.40         23         22.80
17 7' 49-50' 59-60' 69-70 178 119 163	· 79-80' 89-90' 200 129
10' 20' 30' 545 296 102	SB-15 09/11/18 40' 50' 60' 70' 80' 90' <8.12 8.20 <7.97 9.32 10.60 8.74
10'         20'         30'           119         49.50         29.40           SB-13         09/08/1	
SB-13 09/08/1 20' 30' 40' 92.20 178 107	8         90'           50'         60'         70'         80'         90'           <6.60
	Jan 2, 2019

## FIGURE 4

•

#### Summary of Soil Analytical Results Chevron Environmental Management Company Lovington Paddock Unit 60 Unit F, Section 1-T17S-R36E, Lea County, New Mexico

				Total	Total BTEX	ТРН			Chloride		
Sample ID	Depth (feet)	Date	Delizerie	Toluelle	benzene	Xylenes		DRO	GRO	GRO/DRO	Chionde
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		NM	OCD Recomm 10	ended Remed	iation Action I	evels (Total F	Ranking Score : 50	= 20)		1000	20,000
				MOCD Resto						1000	600
T-1	0-1	8/18/10	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00	<50.0	1110
	2-2.5	8/18/10									1620
T-2	0-0.5	8/18/10	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00	<50.0	<200
	0.5-1	8/18/10									<200
SB-1	4-5	5/27/11									93
	9-10	5/27/11									166
	14-15	5/27/11									155
	19-20	5/27/11									99
SB-2	4-5	5/27/11									541
	9-10	5/27/11									357
	14-15	5/27/11									289
	19-20	5/27/11									565
	24-25	5/27/11									231
	29-30	5/27/11									411
	34-35	5/27/11									465
	39-40	5/27/11									531
SB-2b	49-50	12/18/12									800
	59-60	12/18/12									780
	69-70	12/18/12									940
SB-3	4-5	5/27/11									245
	9-10	5/27/11									324
	14-15	5/27/11									498
	19-20	5/27/11									497
SB-4	4-5	5/27/11									326
	9-10	5/27/11									446
	14-15	5/27/11									260
	19-20	5/27/11									239
SB-5	4-5	5/27/11									151
	9-10	5/27/11									747
	14-15	5/27/11									1260
	19-20	5/27/11									1140
	24-25	5/27/11									1180
	29-30	5/27/11									1530
	34-35	5/27/11									1860
	39-40	5/27/11									1570
SB-5b	49-50	12/18/12									3740
	59-60	12/18/12									3720
	69-70	12/18/12									1520
SB-6	0.5-1	10/23/17									155
	4-5	10/23/17									48
	9-10	10/23/17									138
	19-20	10/23/17									67
	29-30	10/23/17									189
	39-40	10/23/17									766
	49-50	10/23/17									1300
	59-60	10/23/17									1300
	69-70	10/23/17									1220
	79-80	10/23/17									873
	89-90	10/23/17									622
	99-100	10/23/17									168

#### Summary of Soil Analytical Results Chevron Environmental Management Company Lovington Paddock Unit 60 Unit F, Section 1-T17S-R36E, Lea County, New Mexico

			Demonstra	Taluana	Ethyl-	Total		ТРН			Chloride
Sample ID	Depth (feet)	Date	Benzene	Toluene	benzene	Xylenes	Total BTEX	DRO	GRO	GRO/DRO	Chioride
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		NM	OCD Recomm 10	ended Remed	iation Action I	evels (Total F	Ranking Score : 50	= 20)		1000	20,000
SB-7	0.5-1	10/23/17									31
	4-5	10/23/17									30
	9-10	10/23/17									167
	19-20	10/23/17									208
SB-8	0.5-1	10/23/17									49
	4-5	10/23/17									1070
	9-10	10/23/17									1380
	19-20	10/23/17									2290
	29-30	10/23/17									5270
	39-40	10/23/17									5570
	49-50	10/23/17									3760
	59-60	10/23/17									3010
	69-70	10/23/17									2000
	79-80	10/23/17									854
	89-90	10/23/17									1010
00.0	99-100	10/23/17									1920
SB-9	0.5-1 4-5	10/24/17 10/24/17									37 131
	4-5 9-10	10/24/17									409
	9-10 19-20	10/24/17									352
	29-30	10/24/17									360
	39-40	10/24/17									308
	49-50	10/24/17									178
	59-60	10/24/17									119
	69-70	10/24/17									163
	79-80	10/24/17									200
	89-90	10/24/17									129
SB-10	0.5-1	10/23/17									1190
	4-5	10/23/17									703
	9-10	10/23/17									673
	19-20	10/23/17									154
Dup.	19-20	10/23/17									142
	29-30	10/23/17									50
SB-11	0.5-1	10/24/17									7
	4-5	10/24/17									1040
	9-10	10/24/17									673
	19-20	10/24/17									336
	29-30	10/24/17									530
	39-40	10/24/17									496
	49-50	10/24/17									477
	59-60	10/24/17									398
	69-70 79-80	10/24/17 10/24/17									283 223
	79-80 89-90	10/24/17									352
SB-12	4	9/8/18									11
00.12	4 10	9/8/18									<6.86
	20	9/8/18									<8.05
	30	9/8/18									7
	40	9/8/18									18
	50	9/8/18									73
	60	9/8/18									169
	70	9/8/18									374
	80	9/8/18									458
	90	9/8/18									555

#### Summary of Soil Analytical Results Chevron Environmental Management Company Lovington Paddock Unit 60 Unit F, Section 1-T17S-R36E, Lea County, New Mexico

			Barrono Toluono Ethyl- Total		ТРН			Obleside			
Sample ID	Depth (feet)	Date	Benzene	Toluene	benzene	Xylenes	Total BTEX	DRO	GRO	GRO/DRO	Chloride
10			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		NM					Ranking Score	= 20) 		1000	20,000
SB-13	4	9/8/18	10 				50 				76
30-13	4 10	9/8/18									40
	20	9/8/18									92
	30	9/8/18									178
	40	9/8/18									107
	50	9/8/18									<6.60
	60	9/8/18									<5.35
	70	9/8/18									<5.44
	80	9/8/18									<8.94
	90	9/8/18									<5.29
SB-14	4	10/24/17									578
	10	10/24/17									119
	20	10/24/17									50
	30	10/24/17									29 26
	40 50	10/24/17 10/24/17									26 22
	60	10/24/17									22
	70	10/24/17									25
	80	10/24/17									23
	90	10/24/17									22
SB-15	4	9/11/18									208
	10	9/11/18									545
	20	9/11/18									296
	30	9/11/18									102
	40	9/11/18									<8.12
	50	9/11/18									8
	60	9/11/18									<7.97
	70	9/11/18									9
	80	9/11/18									11
SB-16	90 4	9/11/18									9 133
30-10	4 10	9/11/18 9/11/18									433
	20	9/11/18									116
	30	9/11/18									40
	40	9/11/18									22
	50	9/11/18									37
	60	9/11/18									20
	70	9/11/18									37
	80	9/11/18									23
	90	9/11/18									23
SB-17	4	9/11/18									69
	10	9/11/18									22
	20	9/11/18									24
	30	9/11/18									19
	40	9/11/18									20
	50 60	9/11/18 9/11/18									19 20
	60 70	9/11/18 9/11/18									20 20
	80	9/11/18									20 19
	90	9/11/18									20
SB-18	4	9/11/18									64
	10	9/11/18									586
	20	9/11/18									271
	30	9/11/18									230
	40	9/11/18									381
	50	9/11/18									361
	60	9/11/18									175
	70	9/11/18									138

#### Summary of Soil Analytical Results Chevron Environmental Management Company Lovington Paddock Unit 60 Unit F, Section 1-T17S-R36E, Lea County, New Mexico

Depth (feet)         Date         Total and a set of the s				Demonstra	Talaana	Ethyl-	Total			TPH		Chloride
Image         mage         mage <t< th=""><th>Sample</th><th>Depth (feet)</th><th>Date</th><th>Benzene</th><th>Toluene</th><th>benzene</th><th>Xylenes</th><th>Total BTEX</th><th>DRO</th><th>GRO</th><th>GRO/DRO</th><th>Chioride</th></t<>	Sample	Depth (feet)	Date	Benzene	Toluene	benzene	Xylenes	Total BTEX	DRO	GRO	GRO/DRO	Chioride
HMOCD Recommendation Action Levels (Total Ranking Score = 20)         10         1118         1         1         1         1         1         1         1         1         1         10         1118         1<	10			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
80         911118   102         911118			NM				evels (Total F		= 20)			
90         9/11/18                    10          10         9/11/18          10         9/11/18                       10         9/1         10         9/11/18                  291           30         9/11/18                291           30         9/11/18                  66           50         9/11/18		1		10				50			1000	20,000
SB-19         4         9/11/18                   102           20         9/11/18                 125           20         9/11/18                 20         211           30         9/11/18                64           40         9/11/18               65           50         9/11/18               62           60         9/11/18               20         21         24         29         29         9         9/11/18              29         29         20         9/11/18												49
10         9/11/18                 20         9/11/18               21         221           30         9/11/18                 64           40         9/11/18                52           60         9/11/18                64           70         9/11/18                46           70         9/11/18               29           90         9/11/18                29           58-20         4         9/11/18               29           10         9/1		90	9/11/18									86
20         9/11/18 <t< td=""><td>SB-19</td><td>4</td><td>9/11/18</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>102</td></t<>	SB-19	4	9/11/18									102
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		10	9/11/18									125
40         9/11/18                55           50         9/11/18		20	9/11/18									291
50         9/11/18                52           60         9/11/18                46           70         9/11/18                36           80         9/11/18                220           90         9/11/18                220           91         9/11/18                220           20         9/11/18		30	9/11/18									64
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		40	9/11/18									56
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		50	9/11/18									52
80         9/11/18                    29           90         9/11/18                 26           SB-20         4         9/11/18                294           10         9/11/18                 59           20         9/11/18                 59           20         9/11/18                114           40         9/11/18                291           50         9/11/18               2040           80         9/11/18 <td< td=""><td></td><td>60</td><td>9/11/18</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>46</td></td<>		60	9/11/18									46
90         9/11/18                26           SB-20         4         9/11/18               294           10         9/11/18                59           20         9/11/18                85           30         9/11/18                114           40         9/11/18               291           50         9/11/18               2040           80         9/11/18               2040           80         9/11/18               2040           80         9/8/18		70	9/11/18									36
SB-20         4         9/11/18  <		80	9/11/18									29
10         9/11/18                59           20         9/11/18                85           30         9/11/18                114           40         9/11/18                291           50         9/11/18                291           50         9/11/18                1020           60         9/11/18               2040           80         9/11/18               240           80         9/8/18               25           20         9/8/18		90	9/11/18									26
20         9/11/18                 85           30         9/11/18                114           40         9/11/18               291           50         9/11/18                291           50         9/11/18                90         9/10/18          1020           70         9/11/18               1020           70         9/11/18               2040           80         9/11/18              2500           90         9/11/18               290           MW-2         4	SB-20	4	9/11/18									294
30         9/11/18                 114           40         9/11/18               291           50         9/11/18                90           60         9/11/18               1020           70         9/11/18               1020           80         9/11/18               1020           70         9/11/18               2040           80         9/11/18               2500           90         9/11/18               290           MW-2         4         9/8/18		10	9/11/18									59
40         9/11/18                21           50         9/11/18                590           60         9/11/18               1020           70         9/11/18               2040           80         9/11/18               2040           80         9/11/18               2040           90         9/11/18               2040           90         9/11/18              2300           MW-2         4         9/8/18              24           10         9/8/18              25		20	9/11/18									85
50         9/11/18                 590           60         9/11/18               1020           70         9/11/18               2040           80         9/11/18               2040           80         9/11/18               2040           90         9/11/18               2500           90         9/11/18               2500           90         9/11/18               2300           MW-2         4         9/8/18              24           10         9/8/18		30	9/11/18									114
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		40	9/11/18									291
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		50	9/11/18									590
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		60	9/11/18									1020
90         9/11/18               2390           MW-2         4         9/8/18               24           10         9/8/18               25           20         9/8/18              25           30         9/8/18              15           30         9/8/18                           15           30         9/8/18                                    <		70	9/11/18									2040
MW-2         4         9/8/18                24           10         9/8/18               25           20         9/8/18               25           30         9/8/18               15           30         9/8/18               46.97           40         9/8/18  15		80	9/11/18									2500
10         9/8/18               25           20         9/8/18               15           30         9/8/18               15           40         9/8/18                6.97           40         9/8/18 <td></td> <td>90</td> <td>9/11/18</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>2390</td>		90	9/11/18									2390
20         9/8/18               15           30         9/8/18	MW-2	4	9/8/18									24
30         9/8/18                <-6.97           40         9/8/18               <-		10	9/8/18									25
40         9/8/18		20	9/8/18									15
50         9/8/18               15           60         9/8/18               15           60         9/8/18		30	9/8/18									<6.97
60         9/8/18                <-5.28           70         9/8/18               <-		40	9/8/18									<7.10
70         9/8/18                <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <-         <- <th< td=""><td></td><td>50</td><td>9/8/18</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>15</td></th<>		50	9/8/18									15
80 9/8/18 <5.68		60	9/8/18									<5.28
		70	9/8/18									<7.72
90 9/8/18		80	9/8/18									<5.68
		90	9/8/18									<5.30

 Notes:

 Bold concentrations above lab reporting limits.

 Highlighted cells indicated concentrations exceeding regulatory limits.

 "---" indicates not analyzed or not applicable.

 BTEX analyses by EPA Method 8021B.

 TPH analyzed by EPA Method SW8015B Mod.

 Chloride analyzed by EPA Method 300.

#### Summary of Groundwater Analytical Results Chevron Environmental Management Company Lovington Paddock Unit 60 Unit F, Section 1-T17S-R36E, Lea County, New Mexico

Well ID	Date	Benzene	Toluene	Ethylbenzene	Total Xylenes	TPH GRO	TPH DRO	Chloride	Total Dissolved Solids
NMWQCC	Standards	0.01	0.75	0.75	0.62			250	1000
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW-1	10/19/16	<0.002	<0.002	<0.002	<0.002	<1.50	<1.50	206	
MW-1	5/26/17	<0.002	<0.002	<0.002	<0.002	<1.50	<1.50	83.9	432
MW-1	10/31/18							59.5	429
MW-2	10/31/18							39.2	386
DUP-1	10/31/18							59.9	449

#### NOTES:

NMWQCC - New Mexico Water Quality Control Commission

'mg/L' indicates milligrams per liter

- BTEX analysis by EPA Method 8021B.

- TPH analysis by Method SW8015B.

- Chlorides analyzed by EPA Method 300.

-- indicates not analyzed

# Appendices

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# Appendix A SB-11 through SB-16 Soil Boring Logs

GHD	STRATIGRAPHIC / (O	VERBUR						Page	1 of 2
ROJEC	TNAME: LPU 60	HC	OLE DES	IGNATION:	MW-2				
ROJEC	T NUMBER: 073817	DA	ATE COM	IPLETED: 7 S	September 20	)18			
CLIENT:	Chevron			METHOD: Hy			ary, Mu	d Rot	ary
	N: Lovington			SONNEL: Se					-
	G COMPANY: HCI								
EPTH t BGS	STRATIGRAPHIC DESCRIPTION & REMARKS		PTH BGS	Monitoring	g Well	SAMPLE			
						DEPTH (ft)	REC (ft)	PP (tsf)	Chlorides (mg/kg)
	SAND (SW): fine, very light brown, dry, contains caliche								
5						4 G	1.0		23.7
<b>.</b>									
10	CAND (CD), find your light brown dry	10.0	00			10 G	1.0		25.3
	SAND (SP): fine, very light brown, dry								
15									
20						20 G	1.0		15.4
25									
30	- yellowish orange, dry					30 G	1.0		<6.97
50	- yenowish orange, dry						_ I.U		~0.97
35									
40						40 G	1.0		<7.10
45									
				∕∕	- Cement Bentonite Mix				
50					4-inch SCH 40 PVC riser	50 G	1.0		14.9
55									
60	- yellowish orange, moist					60 G	1.0		<5.28
	yenowen orange, molet						- 1.0		-0.20
65									
70						70 G	1.0		<7.72
75									
80						(80 G	1.0		<5.68
85									
90						90 G	1.0		<5.30
95									
	OTES: Stratigraphy descriptions are based on drill c								

Released to This 19872024 3:23:23 PM ot be used separately from the original report.

GHD	STRATIGRAPHIC AND (OVER	) INSTRI RBURDE					Pag	e 2 of 2
PROJEC	T NAME: LPU 60	HOLE	DESIGNATION: MW-2					
PROJEC	T NUMBER: 073817	DATE	COMPLETED: 7 September 2	018				
CLIENT:	Chevron	DRILL	NG METHOD: Hydro Excavat	ion, Ai	r Rota	ry, Mı	ud Ro	tary
LOCATIO	DN: Lovington	FIELD	PERSONNEL: Sean Parry					
DRILLIN	G COMPANY: HCI							
DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Monitoring Well			SAM		
11 803		11 003	-	H (ft)	<b>SVAL</b>	(Ħ	tsf)	ides kg)
				DEPTH	INTERVAL	REC	PP (tsf)	Chlorides (mg/kg)
	- light brown, wet		¥ [·.··]=[·.··]		_ ≤			
- 105 - 110 - 115			Filter pack 8/16 sieve 4-inch SCH 40 PVC screen 0.010 slot					
- 120 - 125	SAND (SWG): light brown, wet, contains							
- 130 -	END OF BOREHOLE @ 130.0ft BGS	130.00	WELL DETAILS Screened interval:					
- 135			100.00 to 130.00ft BGS Length: 30ft					
- 140			Slot Size: 0.01 Material: PVC					
			Seal: 0.00 to 95.00ft BGS					
- 145			Material: Cement Bentonite Mix					
			Sand Pack: 95.00 to 130.00ft BGS					
- 150			Material: 8/16 Silica Sand					
- 155			BOREHOLE DIAMETER 8 Inch					
- 160								
- 165 - 170								
- 170								
- 175								
_ 190								
- 180								
- 185								
- 190								
- 180 - 185 - 190 - 195								
- 195								
				1				

GHD		GRAPHIC LOG						
GHL	(OVE	ERBURDEN)					Pag	e 1 of 1
PROJEC	CT NAME: LPU 60	HOLE DESIGNATION:	SB-12					
PROJEC	CT NUMBER: 073817	DATE COMPLETED: 8 Se	ptember 20	018				
CLIENT	: Chevron	DRILLING METHOD: Hydi	o Excavati	on, Aiı	<sup>-</sup> Rota	ry		
LOCATI	ON: Lovington	FIELD PERSONNEL: Sea	n Parry					
DRILLIN	IG COMPANY: HCI		-					
DEPTH	STRATIGRAPHIC DESCRIPTION &	& REMARKS	DEPTH		SAM			
ft BGS			ft BGS	DEPTH (ft)	VAL	(#	sf)	Chlorides (mg/kg)
				L T T	INTERVAL	REC (ft)	PP (tsf)	hlori mg/
				ä	Ľ	Ľ		00
Ē	CALICHE: light grey, dry		C			L		
5			Ľ	4	G	1.0		11.4
E.			Ц					
<u> </u>	SILTY SAND (SM): very light brown, dry		10.00		G	1.0		<6.86
- 15								
E								
20				20	G	1.0		<8.05
-								
25								
Ē								
- 30	- light brown, moist			30	G	1.0		7.26
- 35								
-40				40	G	1.0		18
E								
45								
50 	SAND (SP): fine, light brown, moist		50.00	50	) Gi	1.0		72.6
55								
60				60	G	1.0		169
E								
65								
118								
70				70	G	1.0		374
10 10 10 10 10 10 10 10 10 10 10 10 10 1								
80				80	G	1.0		458
85 9								
XLPU6			00.00					
2	END OF BOREHOLE @ 90.0ft BGS	[*,**,	90.00	90	j G	1.0		555
<sup>8</sup> 2− 20−95								
9								
OVERBURDEN LOG 073817-CVX LPU60.GPJ CRA_CORP.GDT 28/11/18 66 06 98 08 52 02 111111111111111111111111111111111111	NOTES: Stratigraphy departmentions are based as drill suffici	ac						
RUR	NOTES: Stratigraphy descriptions are based on drill cutting	yə.						
OVE	LABORATORY ANALYSIS							

	STRATIGRA	APHIC LOG						
GH	(OVERB	URDEN)					Page	e 1 of 1
PROJE	CT NAME: LPU 60		B-13					
	CT NUMBER: 073817	DATE COMPLETED: 9 Ser		)18				
	T: Chevron	DRILLING METHOD: Hydro			Rota	v		
	ION: Lovington	FIELD PERSONNEL: Sean		,		J		
	NG COMPANY: HCI		i uny					
DEPTH			DEPTH			SAMF	PLE	
ft BGS	STRATIGRAPHIC DESCRIPTION & REM	MARKS	ft BGS	(ft)	'AL	(ft)	f)	es a)
				DEPTH (ft)	INTERVAL	REC (	PP (tsf)	Chlorides (mg/kg)
				DEI	INT	R	Ē	년 <sub>년</sub>
-	CALICHE: light grey-brown, dry, contians sand (f)							
5				$\begin{pmatrix} 4 \end{pmatrix}$	G	1.0		75.6
Ē								
- 10	SILTY SAND (SM): very light brown, dry		10.00	10	G	1.0		39.5
F								
- 15								
Ē								
20				20	G	1.0		92.2
25								
-25								
- 30	- moist			30	G	1.0		178
E				$\sim$				
- 35								
E								
- 40				40	G	1.0		107
E								
- 45								
Ē								
50 				50	G	1.0		<6.60
55								
- 55								
60				60	G	1.0		<5.35
E				$\sim$				
65								
1/18								
1287 187	- light brown, moist			(70)	G	1.0		<5.44
0-H202								
ŏ⊢ ► on				on		10		-9.04
08			1	80	L G	1.0		<8.94
G								
006 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	END OF BOREHOLE @ 90.0ft BGS		90.00	90	G	1.0		<5.29
3817-								
<sup>20</sup> / <sub>95</sub>								
NLOC								
OVERBURDEN LOG 073817-CVX LPU60.GPJ CRA_CORP.GDT 28/11/18 06 05 08 08 07 08 07 08 07 01 01 01 01 01 01 01 01 01 01 01 01 01	<u>NOTES:</u> Stratigraphy descriptions are based on drill cuttings.		I	I		I		
<u>الا</u>								

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	STRA	TIGRAPHIC LOG							
GH	(O'	VERBURDEN)						Page	e 1 of 1
PROJE	CT NAME: LPU 60	HOLE DESIGNATIO	N: S	B-14					
	CT NUMBER: 073817	DATE COMPLETED			2018				
	: Chevron	DRILLING METHOD		•		Rota	ſV		
	ION: Lovington	FIELD PERSONNEL			on, 7 ai	rtota	y		
	NG COMPANY: HCI		. ocan	Tany					
DEPTH				DEPTH			SAMF	PLE	
ft BGS	STRATIGRAPHIC DESCRIPTIC	ON & REMARKS		ft BGS	(Ħ)	AL	f)	6	es 1)
					DEPTH (ft)	INTERVAL	REC (ft)	PP (tsf)	Chlorides (mg/kg)
					DEI	IN	R		55
_	CALICHE: light grey, dry								
5					4	G	<b>1</b> .0		578
10	SANDY SILT (MLS): very light grey, dry			10.00	10	G	<b>1</b> .0		119
-									
15									
20	- brownish-grey, moist				20	G	<b>■</b> 1.0		49.5
- 25									
_ 23									
- 30				30.00	30	G	<b>1</b> .0		29.4
	SILTY SAND (MS): very light brown, moist				$\sim$				
35									
-									
40					40	G	<b>1</b> .0		26.4
45									
50	- light brown, moist				50		1.0		22.2
- 50	- light blown, moist				30		<b>1.0</b>		22.2
55									
E									
60					60	G	<b>1</b> .0		23.1
-									
65									
1/18									
10 10 10 10 10 10 10 10 10 10 10 10 10 1					70	G	1.0		25.2
5									
08					80	G	1.0		23.3
					$\square$				
9.00 000 85									
§  90	END OF BOREHOLE @ 90.0ft BGS			90.00	90	G	<b>1</b> .0		21.9
7381									
° <b>⊢95</b> 8⊢									
OVERBURDEN LOG 073817-CVX LPUG0.GPJ CRA_CORP.GDT 2811/18 6 06 92 08 22 22 6 06 93 08 22 22 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	NOTES: Stratigraphy descriptions are based on drill cu	uttings.				_	_	_	
VERE									
óL									

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GHD	STRATIGRA						_	
	(OVERB						Page	e 1 of 1
			B-15	010				
	CT NUMBER: 073817 : Chevron	DATE COMPLETED: 11 Se DRILLING METHOD: Hydro			Potar	~		
	ON: Lovington	FIELD PERSONNEL: Sean		JII, AII	Notal	у		
	IG COMPANY: HCI		i uny					
DEPTH			DEPTH			SAMF	PLE	
ft BGS	STRATIGRAPHIC DESCRIPTION & REM	IARKS	ft BGS	(ft)	/AL	ft)	ŝf)	des g)
				DEPTH (ft)	INTERVAL	REC (ft)	PP (tsf)	Chlorides (mg/kg)
	SILTY SAND (SM): light grey brown, dry, contains caliche			ā	Z	-		0-
				4	G	1.0		208
— 5 _								
- 10	- very light grey, dry			10	G	1.0		545
-								
- 15								
				00				200
20 	- brownish grey, moist			20		1.0		296
25								
E								
- 30	- light brown, moist			(30)	G	<b>1</b> .0		102
_ 35								
40	- yellowish orange, dry			40	G	<b>1</b> .0		<8.12
45 								
50				50	G	<b>1</b> .0		8.20
55								
60 				60	G	1.0		<7.97
- 65								
/18								
70				(70)	G	<b>1</b> .0		9.32
109.4 75								
ANOX 1								
80 80				80	G	<b>1</b> .0		10.6
0.00 0.00 0.00 0.00								
90			90.00	90	G	<b>1</b> .0		8.74
817-C	END OF BOREHOLE @ 90.0ft BGS							
20 ປີ 1 - 95								
OVERBURDEN LOG 073817-CVX LPU60.GPJ CRA_CORP.GDT 28/11/18 66 66 98 98 92 00 66 06 98 08 92 00 66 06 98 08 08 02 71 11 11 11 11 11 11 11 11 11 11 11 11 1	NOTES: Stratigraphy descriptions are based on drill cuttings.						I	
VERE								
oL								

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GHD		IGRAPHIC LOG ERBURDEN)						Page	- 1 of '
			-	<b>D</b> 40				Page	e 1 of
	NAME: LPU 60	HOLE DESIGNATIC							
	NUMBER: 073817	DATE COMPLETED							
CLIENT: 0		DRILLING METHOD			ion, Air	Rota	Ъ		
	N: Lovington	FIELD PERSONNEL	_: Sean	Parry					
DRILLING	COMPANY: HCI								
DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION	& REMARKS		DEPTH ft BGS	(H)	-	SAMF ⊋		les
					DEPTH (ft)	INTERVAL	REC (ft)	PP (tsf)	Chlorides
	SILTY SAND (SM): grey, dry, contains caliche								
-5					4	G	<b>1</b> .0		133
5									
-10				10.00	10	G	<b>1</b> .0		433
	SANDY SILT (MLS): very light grey, dry								
- 15				1					
-20 -	SILTY SAND (SM): orange yellow, dry			20.00	20	G	<b>1</b> .0		110
	SILTT SAND (SM). Utalige yellow, dry								
- 25									
- 30	- light brown, moist				30	G	<b>1</b> .0		40.
- 35									
-40	- orangish yellow, dry				40	G	<b>■</b> 1.0		22.
-45									
-45									
- 50					50	G	<b>1</b> .0		37.
00									011
- 55									
- 60					60	G	<b>1</b> .0		19.
-65									
- 70					70	G	<b>1</b> .0		37.
-75									
- 80					80		<b>1</b> .0		23.
00									23.
- 85									
-90				90.00	90	G	1.0		22.
	END OF BOREHOLE @ 90.0ft BGS				$\square$				
-95									
	TEQ: Stratigraphy descriptions are based as dell with	200							
<u>INC</u>	<u>DTES:</u> Stratigraphy descriptions are based on drill cutting	nys.							

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GHI		STRATIGRAPHIC LOG (OVERBURDEN)			Pa	ige 1 of 1
PROJE	CT NAME: LPU 60	HOLE DESIGNATION: SB-	-17			
PROJE	CT NUMBER: 073817	DATE COMPLETED: 11 Septe	ember 2018			
CLIENT	: Chevron	DRILLING METHOD: Hydro Ex		ir Rotary	/	
LOCATI	ON: Lovington	FIELD PERSONNEL: Sean Pa	arry			
DRILLIN	NG COMPANY: HCI					
DEPTH	STRATIGRAPHIC D		EPTH	5	SAMPLE	
ft BGS			t BGS €	VAL	sf)	(g)
				INTERVAL	REC (ft) PP (tsf)	Chlorides (mg/kg)
-	SILTY SAND (SM): light grey, dry					
- 5			4	G	1.0	69.4
10			10	G	1.0	21.5
E						
15						
20	- light brown, dry		20	G	. 1.0	23.6
= 20	- light brown, dry		20		1.0	23.0
25						
30			30	G	1.0	19.4
35 						
40			40	G	∎ 1 0	20.2
_ +0					1.0	20.2
45						
-						
50			50	G	1.0	19.2
55 						
60			60	G	1.0	19.6
F						
65						
1/18						
70			70	G	1.0	20.1
19: 						
TITITITIE CORP.						
A 20 20 20 20 20 20 20 20 20 20 20 20 20			80	G	1.0	19.4
85 00 00 00 00 00 00 00 00 00 00 00 00 00						
			0.00 90	G	10	19.7
°5⊢00	END OF BOREHOLE @ 90.0ft BGS		0.00			19./
<sup>82</sup> 95						
501						
OVERBURDENLOG 073817-CVXLPU60.GPJ CRA CORP.GDT 28/11/18 29 00 29 08 22 00 20 00 29 08 22 00 20 00 09 09 00 20 00 00 20 00 00 20 00 00 20 00 00 20 00	NOTES: Stratigraphy descriptions are base	d on drill cuttings.				
ILLE		<b>v</b> -				
OVE		)				

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PROJECT NAME: LPU 60 PROJECT NUMBER: 073817 CLIENT: Chevron LOCATION: Lovington DEPTH tt BGS STRATIGRAPHIC DESCRIPTION & REMARKS DEPTH tt BGS SILTY SAND (SM): very light grey, dry, contains caliche 5 10 - light grey, dry - 25 - grey brown, dry - 25 grey brown, dry 	1	Page 1 of					PHIC LOG IRDEN)	OVERB	GHD
CLIENT: Chevron     DRILLING METHOD: Hydro Excavation, Air Rotary       LOCATION: Lovington     FIELD PERSONNEL: Sean Parry       DRILLING COMPANY: HCI       DEPTH     STRATIGRAPHIC DESCRIPTION & REMARKS       DEPTH     SILTY SAND (SM): very light grey, dry, contains calliche       -5     -10       -15     -20       - grey brown, dry     -20						B-18	-		PROJEC
LOCATION: Lovington     FIELD PERSONNEL: Sean Pary:       DRILLING COMPANY: HCI       DEPTH     STRATIGRAPHIC DESCRIPTION & REMARKS       DEPTH     SAMPLE       V     V       U     V <tr< td=""><td></td><td></td><td></td><td></td><td>018</td><td>ptember 2</td><td>DATE COMPLETED: 11 Se</td><td>CT NUMBER: 073817</td><td>PROJEC</td></tr<>					018	ptember 2	DATE COMPLETED: 11 Se	CT NUMBER: 073817	PROJEC
DRILLING COMPANY: HCI         DEPTH ft BGS       STRATIGRAPHIC DESCRIPTION & REMARKS       DEPTH ft BGS       SAMPLE         Image: Strate in the strate in th			у	Rotar	on, Air	Excavati	DRILLING METHOD: Hydro	T: Chevron	CLIENT:
DEPTH ft BGS       STRATIGRAPHIC DESCRIPTION & REMARKS       DEPTH ft BGS       Image: Comparison of the comparison						Parry	FIELD PERSONNEL: Sean	ION: Lovington	LOCATI
DELTITI It BGS     STRATIGRAPHIC DESCRIPTION & REMARKS       Image: Strate in the strate in th	_		0 4 4 4 5					NG COMPANY: HCI	DRILLIN
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	_				t)		RKS	STRATIGRAPHIC DESCRIPTION & REM	
SILTY SAND (SM): very light grey, dry, contains caliche       4       6       1.0       64.1         10       - light grey, dry       10       6       1.0       586         15       -       20       - grey brown, dry       20       6       1.0       271	ואייאו	P (tsf)	EC (ft)	ERVA	РТН (1				
5       4       G       1.0       64.1         10       - light grey, dry       10       G       1.0       586         15       -       -       -       -       1.0       586         20       -       -       -       -       1.0       271	-	<u>م</u> ک	R	IN	DE			SILTY SAND (SM): very light grev, drv, contains caliche	_
10     - light grey, dry       15       20     - grey brown, dry		64	1.0	G	4				
20 - grey brown, dry									5
20 - grey brown, dry	;	58	1.0	G	10			- light grey, dry	10
20 - grey brown, dry					)				
									15
		27	1.0	G	20			- grey brown, dry	20
								3.27 2.2, 2.7	
									25
- 30 - light brown, moist 30 - G 1.0 230			- 4.0						
-30 - light brown, moist $30$ $G$ $1.0$ 230		23	<b>1</b> .0		30			- light brown, moist	
									35
					$\left( \right)$				
-40 - yellow orange, dry $40$ $-381$		38	1.0	G	40			- yellow orange, dry	<u>40</u>
									-45
					(				
		36	<b>1</b> .0	G	50				50
									55
	;	17	1.0	G	60				60
									F 1
	;	13	1.0	G	70				70
					)				
									75
	↓	49	1.0	G	80				ŭ⊢ ∦—80
			-						
									85 - 85
		95	10	G	an	90.00			
O         SU         SU </td <td>·  </td> <td>00</td> <td></td> <td>u</td> <td>3</td> <td>50.00</td> <td></td> <td>END OF BOREHOLE @ 90.0ft BGS</td> <td>817-C</td>	·	00		u	3	50.00		END OF BOREHOLE @ 90.0ft BGS	817-C
									<sup>20</sup> 95
TO       TO <td< td=""><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td>1</td><td><u>الــــــــــــــــــــــــــــــــــــ</u></td></td<>	1							1	<u>الــــــــــــــــــــــــــــــــــــ</u>
								<u>NOTES:</u> Stratigraphy descriptions are based on drill cuttings.	

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GHE		IGRAPHIC LOG ERBURDEN)		Pa	age 1 of 1
PROJE	CT NAME: LPU 60	HOLE DESIGNATION:	SB-19		
PROJE	CT NUMBER: 073817	DATE COMPLETED: 1	1 September 2	2018	
CLIENT	: Chevron	DRILLING METHOD: 1	Hydro Excavatio	on, Air Rotary	
LOCATI	ON: Lovington	FIELD PERSONNEL: \$	Sean Parry		
DRILLIN	NG COMPANY: HCI			1	
DEPTH	STRATIGRAPHIC DESCRIPTION	& REMARKS	DEPTH	SAMPLE	
ft BGS			ft BGS	(ff) / (ff)	(g) des
				DEPTH (ft) INTERVAL REC (ft) PP (tsf)	Chlorides (mg/kg)
					. 55
E	CALICHE: very light grey, dry				
-5				4 G 1.0	102
F					
- 10	- increased clay content			10 G 1.0	125
Ē.					
15 					
20				20 G 1.0	291
- 20	SANDY SILT (MLS): light grey, dry		20.00		231
-25					
E					
- 30	SILTY SAND (SM): light brown, dry		30.00	30 G 1.0	63.5
E	SILT F SAND (SIV). light brown, dry				
- 35					
E					
-40				40 G 1.0	55.5
E .c					
45 					
50				50 G 1.0	52.1
50					52.1
55					
E					
60				60 G 1.0	45.5
E					
65					
1/18					
70 <u>-</u>				70 G 1.0	36.0
≨⊢80				80 G 1.0	28.6
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0					
S – 90	END OF BOREHOLE @ 90.0ft BGS		90.00	90 G 1.0	26.2
7381					
o⊢95 g_					
OVERBURDEN LOG 073817-CVX LPU60.GPJ CRA CORP GDT 28/11/18 66 06 92 08 12 11 11 11 11 11 11 11 11 11 11 11 11	NOTES: Stratigraphy descriptions are based on drill cutt	ings.			
/ERB					
óL	LABORATORY ANALYSIS				

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	STRATIGR	APHIC LOG									
GHD	(OVERB	BURDEN) Page 1									
PROJE	CT NAME: LPU 60	HOLE DESIGNATION: S	B-20								
	CT NUMBER: 073817	DATE COMPLETED: 11 Se	-	2018							
	: Chevron	DRILLING METHOD: Hydro			Rota	rv					
	ON: Lovington	FIELD PERSONNEL: Sean		ori, 7 ai	riota	.,					
	IG COMPANY: HCI		i uny								
DEPTH			DEPTH			SAM					
ft BGS	STRATIGRAPHIC DESCRIPTION & REN	/ARKS	ft BGS	(ŧ)	AL	£	<u>_</u>	s (			
				DEPTH	INTERVAL	REC (ft)	PP (tsf)	Chlorides (mg/kg)			
				DEF	I		뷥	Щ Э.			
-	CALICHE: brownish grey, dry, contains sand (f)										
5			-	4	G	1.0		294			
- 5			-								
- 10			10.00	10	G	1.0		58.7			
	SILTY SAND (SM): brownish grey, dry			$\sim$							
- 15											
-											
20	- yellowish orange, dry			20	G	<b>1</b> .0		84.8			
25											
				30		1.0					
- 30				30		1.0		114			
- 35											
40				40	G	1.0		291			
-											
45											
-											
50				50	G	1.0		590			
55 											
60				60	G	1.0		1020			
								1020			
65											
111											
11/8/1				70	G	1.0		2040			
0. 22 75											
08			1	80	G	1.0		2500			
Gap.082			1								
ZL 200			90.00	90	G	1.0		2390			
817-0	END OF BOREHOLE @ 90.0ft BGS			$\left \right $							
<sup>8</sup> 20 95											
OVERBURDEN LOG 073817-CVX LPU60.GPJ CRA_CORP.GDT 28/11/18 66 06 58 08 52 0.0 67 00 58 08 02 00 00 08 00 02 00 00 00 00 00 00 00 00 00 00 00	<u>NOTES:</u> Stratigraphy descriptions are based on drill cuttings.					1					
RBU											
OVE	LABORATORY ANALYSIS										

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# Appendix B Soil and Groundwater Laboratory Analytical Reports

# Analytical Report 598984

for GHD Services, INC- Midland

**Project Manager: Scott Foord** 

CEMC LPU-60

073817-2018-001

27-SEP-18

Collected By: Client





1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-18-27), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054) Oklahoma (2017-142)

> Xenco-Dallas (EPA Lab Code: TX01468): Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-13) Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-17) Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-16) Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4) Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757) Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757) Xenco-Atlanta (LELAP Lab ID #04176) Xenco-Tampa: Florida (E87429) Xenco-Lakeland: Florida (E84098)



27-SEP-18

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

Reference: XENCO Report No(s): **598984 CEMC LPU-60** Project Address: Lovington, 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) 598984. 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. 598984 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,

Debbie Sems

**Debbie Simmons** Project Manager

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994. Certified and approved by numerous States and Agencies. A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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





# Sample Cross Reference 598984



#### GHD Services, INC- Midland, Midland, TX

CEMC LPU-60

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW2-4-080918	S	09-08-18 07:05	4	598984-001
MW2-10-080918	S	09-08-18 07:06	10	598984-002
MW2-20-080918	S	09-08-18 07:07	20	598984-003
MW2-30-080918	S	09-08-18 07:10	30	598984-004
MW2-40-080918	S	09-08-18 07:15	40	598984-005
MW2-50-080918	S	09-08-18 07:25	50	598984-006
MW2-60-080918	S	09-08-18 07:40	60	598984-007
MW2-70-080918	S	09-08-18 07:45	70	598984-008
MW2-80-080918	S	09-08-18 07:50	80	598984-009
MW2-90-080918	S	09-08-18 07:55	90	598984-010
SB12-4-080918	S	09-08-18 08:55	4	598984-011
SB12-10-080918	S	09-08-18 09:00	10	598984-012
SB12-20-080918	S	09-08-18 09:05	20	598984-013
SB12-30-080918	S	09-08-18 09:10	30	598984-014
SB12-40-080918	S	09-08-18 09:15	40	598984-015
SB12-50-080918	S	09-08-18 09:20	50	598984-016
SB12-60-080918	S	09-08-18 09:25	60	598984-017
SB12-70-080918	S	09-08-18 09:30	70	598984-018
SB12-80-080918	S	09-08-18 09:35	80	598984-019
SB12-90-080918	S	09-08-18 09:40	90	598984-020
SB13-4-080918	S	09-08-18 10:00	4	598984-021
SB13-10-080918	S	09-08-18 10:05	10	598984-022
SB13-20-080918	S	09-08-18 10:10	20	598984-023
SB13-30-080918	S	09-08-18 10:15	30	598984-024
SB13-40-080918	S	09-08-18 10:20	40	598984-025
SB13-50-080918	S	09-08-18 10:25	50	598984-026
SB13-60-080918	S	09-08-18 10:30	60	598984-027
SB13-70-080918	S	09-08-18 10:32	70	598984-028
SB13-80-080918	S	09-08-18 10:35	80	598984-029
SB13-90-080918	S	09-08-18 10:37	90	598984-030
SB15-4-110918	S	09-11-18 08:55	4	598984-031
SB15-10-110918	S	09-11-18 08:57	10	598984-032
SB15-20-110918	S	09-11-18 09:00	20	598984-033
SB15-30-110918	S	09-11-18 09:02	30	598984-034
SB15-40-110918	S	09-11-18 09:05	40	598984-035
SB15-50-110918	S	09-11-18 09:07	50	598984-036
SB15-60-110918	S	09-11-18 09:10	60	598984-037
SB15-70-110918	S	09-11-18 09:12	70	598984-038
SB15-80-110918	S	09-11-18 09:15	80	598984-039
SB15-90-110918	S	09-11-18 09:17	90	598984-040
SB16-4-110918	S	09-11-18 09:40	4	598984-041
SB16-10-110918	S	09-11-18 09:50	10	598984-042
SB16-20-110918	S	09-11-18 09:52	20	598984-043



#### Sample Cross Reference 598984



#### GHD Services, INC- Midland, Midland, TX

CEMC LPU-60

SB16-30-110918	S	09-11-18 09:55	30	598984-044
SB16-40-110918	S	09-11-18 09:57	40	598984-045
SB16-50-110918	S	09-11-18 10:00	50	598984-046
SB16-60-110918	S	09-11-18 10:02	60	598984-047
SB16-70-110918	S	09-11-18 10:05	70	598984-048
SB16-80-110918	S	09-11-18 10:07	80	598984-049
SB16-90-110918	S	09-11-18 10:10	90	598984-050
SB17-4-110918	S	09-11-18 10:17	4	598984-051
SB17-10-110918	S	09-11-18 10:20	10	598984-052
SB17-20-110918	S	09-11-18 10:22	20	598984-053
SB17-30-110918	S	09-11-18 10:25	30	598984-054
SB17-40-110918	S	09-11-18 10:27	40	598984-055
SB17-50-110918	S	09-11-18 10:30	50	598984-056
SB17-60-110918	S	09-11-18 10:32	60	598984-057
SB17-70-110918	S	09-11-18 10:35	70	598984-058
SB17-80-110918	S	09-11-18 10:37	80	598984-059
SB17-90-110918	S	09-11-18 10:40	90	598984-060
SB18-4-110918	S	09-11-18 10:45	4	598984-061
SB18-10-110918	S	09-11-18 10:47	10	598984-062
SB18-20-110918	S	09-11-18 10:50	20	598984-063
SB18-30-110918	S	09-11-18 10:52	30	598984-064
SB18-40-110918	S	09-11-18 10:55	40	598984-065
SB18-50-110918	S	09-11-18 10:57	50	598984-066
SB18-60-110918	S	09-11-18 11:00	60	598984-067
SB18-70-110918	S	09-11-18 11:02	70	598984-068
SB18-80-110918	S	09-11-18 11:05	80	598984-069
SB18-90-110918	S	09-11-18 11:07	90	598984-070
SB19-4-110918	S	09-11-18 11:05	4	598984-071
SB19-10-110918	S	09-11-18 11:07	10	598984-072
SB19-20-110918	S	09-11-18 11:10	20	598984-073
SB19-30-110918	S	09-11-18 11:12	30	598984-074
SB19-40-110918	S	09-11-18 11:15	40	598984-075
SB19-50-110918	S	09-11-18 11:17	50	598984-076
SB19-60-110918	S	09-11-18 11:20	60	598984-077
SB19-70-110918	S	09-11-18 11:22	70	598984-078
SB19-80-110918	S	09-11-18 11:25	80	598984-079
SB19-90-110918	S	09-11-18 11:27	90	598984-080
SB20-4-110918	S	09-11-18 11:42	4	598984-081
SB20-10-110918	S	09-11-18 11:45	10	598984-082
SB20-20-110918	S	09-11-18 11:47	20	598984-083
SB20-30-110918	S	09-11-18 11:50	30	598984-084
SB20-40-110918	S	09-11-18 11:52	40	598984-085
SB20-50-110918	S	09-11-18 11:57	50	598984-086
SB20-60-110918	S	09-11-18 12:00	60	598984-087

.



# Sample Cross Reference 598984



#### GHD Services, INC- Midland, Midland, TX

CEMC LPU-60

S	09-11-18 12:02	70	598984-088
S	09-11-18 12:05	80	598984-089
S	09-11-18 12:07	90	598984-090
S	09-11-18 07:52	4	598984-091
S	09-11-18 07:55	10	598984-092
S	09-11-18 07:57	20	598984-093
S	09-11-18 08:00	30	598984-094
S	09-11-18 08:02	40	598984-095
S	09-11-18 08:05	50	598984-096
S	09-11-18 08:07	60	598984-097
S	09-11-18 08:10	70	598984-098
S	09-11-18 08:12	80	598984-099
S	09-11-18 08:15	90	598984-100

SB20-70-110918
SB20-80-110918
SB20-90-110918
SB14-4-110918
SB14-10-110918
SB14-20-110918
SB14-30-110918
SB14-40-110918
SB14-50-110918
SB14-60-110918
SB14-70-110918
SB14-80-110918
SB14-90-110918



# CASE NARRATIVE

Client Name: GHD Services, INC- Midland Project Name: CEMC LPU-60

Project ID: 073817-2018-001 Work Order Number(s): 598984 Report Date:27-SEP-18Date Received:09/13/2018

#### Sample receipt non conformances and comments:

None

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

None

#### Analytical non conformances and comments:

Batch: LBA-3063540 Inorganic Anions by EPA 300

Lab Sample ID 598984-001 and 598984-002 were 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: 598984-001, -002.

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

Batch: LBA-3063560 Chloride by EPA 300

Lab Sample ID 598984-053 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: 598984-043, -044, -045, -046, -047, -048, -049, -050, -051, -052, -053, -054, -055, -056, -057, -058, -059, -060, -061, -062. The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.



### Certificate of Analysis Summary 598984

GHD Services, INC- Midland, Midland, TX

Project Name: CEMC LPU-60



Date Received in Lab:Thu Sep-13-18 01:00 pmReport Date:27-SEP-18Project Manager:Debbie Simmons

	Lab Id:	598984-0	001	598984-0	002	598984-0	03	598984-0	04	598984-0	05	598984-0	06
Analysis Requested	Field Id:	MW2-4-08	0918	MW2-10-080918		MW2-20-080918		MW2-30-080918		MW2-40-080918		MW2-50-080918	
Anulysis Kequesieu	Depth:	4-		10-		20-		30-		40-		50-	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Sep-08-18	Sep-08-18 07:05		07:06	Sep-08-18 0	07:07	Sep-08-18 0	07:10	Sep-08-18 0	07:15	Sep-08-18 (	07:25
Chloride by EPA 300	Extracted:	Sep-15-18	Sep-15-18 10:40		10:40	Sep-16-18 17:00		Sep-16-18 17:00		Sep-16-18 17:00		Sep-16-18 1	7:00
	Analyzed:	Sep-15-18	11:22	Sep-15-18 13:47		Sep-16-18 20:38		Sep-16-18 21:01		Sep-16-18 21:08		Sep-16-18 21:15	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		23.7	6.23	25.3	5.33	15.4	5.31	<6.97	6.97	<7.10	7.10	14.9	9.92
Percent Moisture	Extracted:												
	Analyzed:	Sep-13-18	Sep-13-18 18:30		18:30	Sep-13-18 1	8:30						
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		19.8		7.08		4.90		27.6		30.3		49.4	

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Debbie Simmons Project Manager

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### Certificate of Analysis Summary 598984

GHD Services, INC- Midland, Midland, TX

Project Name: CEMC LPU-60



Date Received in Lab:Thu Sep-13-18 01:00 pmReport Date:27-SEP-18Project Manager:Debbie Simmons

	Lab Id:	598984-0	07	598984-0	08	598984-0	09	598984-0	10	598984-0	011	598984-0	12
Analysis Requested	Field Id:	MW2-60-08	30918	MW2-70-080918		MW2-80-080918		MW2-90-080918		SB12-4-080918		SB12-10-08	0918
Analysis Kequesiea	Depth:	60-		70-		80-		90-		4-		10-	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Sep-08-18 (	Sep-08-18 07:40		Sep-08-18 07:45		Sep-08-18 07:50		)7:55	Sep-08-18 (	08:55	Sep-08-18 0	9:00
Chloride by EPA 300	Extracted:	Sep-16-18	Sep-16-18 17:00		7:00	Sep-16-18 17:00		Sep-16-18 17:00		Sep-16-18	17:00	Sep-16-18 1	7:00
	Analyzed:	Sep-16-18 2	21:23	Sep-16-18 21:45		Sep-16-18 21:53		Sep-16-18 22:00		Sep-16-18 22:07		Sep-16-18 22:15	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		<5.28	5.28	<7.72	7.72	<5.68	5.68	<5.30	5.30	11.4	6.10	<6.86	6.86
Percent Moisture	Extracted:												
	Analyzed:	Sep-13-18	Sep-13-18 18:30		8:30	Sep-13-18 1	8:30	Sep-13-18 1	8:30	Sep-13-18	18:30	Sep-13-18 1	8:30
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		6.09		35.8		11.4		5.73		18.9		27.6	

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### Certificate of Analysis Summary 598984

GHD Services, INC- Midland, Midland, TX

Project Name: CEMC LPU-60



Date Received in Lab:Thu Sep-13-18 01:00 pmReport Date:27-SEP-18Project Manager:Debbie Simmons

	Lab Id:	598984-0	13	598984-0	014	598984-0	15	598984-0	)16	598984-0	17	598984-0	18
Analysis Requested	Field Id:	SB12-20-08	0918	SB12-30-080918		SB12-40-080918		SB12-50-080918		SB12-60-080918		SB12-70-08	0918
Analysis Kequestea	Depth:	20-		30-		40-		50-		60-		70-	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Sep-08-18 (	Sep-08-18 09:05		09:10	Sep-08-18 0	9:15	Sep-08-18 09:20		Sep-08-18 (	)9:25	Sep-08-18 (	9:30
Chloride by EPA 300	Extracted:	Sep-16-18	Sep-16-18 17:00		17:00	Sep-16-18 17:00		Sep-16-18 17:00		Sep-16-18 1	7:00	Sep-16-18 1	7:00
	Analyzed:	Sep-16-18 2	22:22	Sep-16-18 22:45		Sep-16-18 22:52		Sep-16-18 23:14		Sep-16-18 23:22		Sep-16-18 23:29	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		<8.05	8.05	7.26	5.29	18.0	5.27	72.6	5.33	169	8.61	374	5.38
Percent Moisture	Extracted:												
	Analyzed:	Sep-13-18 1	Sep-13-18 18:30		18:30	Sep-13-18 1	8:30	Sep-13-18	18:30	Sep-13-18 1	8:30	Sep-13-18 1	8:30
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		38.3		5.68		6.06		6.14		42.1		7.78	

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### Certificate of Analysis Summary 598984

GHD Services, INC- Midland, Midland, TX

Project Name: CEMC LPU-60



Date Received in Lab:Thu Sep-13-18 01:00 pmReport Date:27-SEP-18Project Manager:Debbie Simmons

	Lab Id:	598984-0	)19	598984-0	020	598984-0	21	598984-0	022	598984-0	23	598984-0	24
Analysis Requested	Field Id:	SB12-80-08	30918	SB12-90-080918		SB13-4-080918		SB13-10-080918		SB13-20-080918		SB13-30-08	0918
Anulysis Kequesieu	Depth:	80-		90-		4-		10-		20-		30-	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Sep-08-18	Sep-08-18 09:35		09:40	Sep-08-18 10:00		Sep-08-18	10:05	Sep-08-18	10:10	Sep-08-18 1	0:15
Chloride by EPA 300	Extracted:	Sep-16-18	Sep-16-18 17:00		17:00	Sep-16-18 17:00		Sep-16-18 17:00		Sep-16-18	17:30	Sep-16-18 1	7:30
	Analyzed:	Sep-16-18	23:37	Sep-16-18 23:44		Sep-16-18 23:52		Sep-16-18 23:59		Sep-17-18 00:51		Sep-17-18 01:13	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		458	9.46	555	5.30	75.6	5.28	39.5	5.44	92.2	8.83	178	7.81
Percent Moisture	Extracted:												
	Analyzed:	Sep-13-18	Sep-13-18 18:30		18:30	Sep-13-18 1	8:30	Sep-13-18 1	18:30	Sep-13-18	18:30	Sep-13-18 1	8:30
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		47.1		6.66		5.55		8.23		43.5		36.1	

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### Certificate of Analysis Summary 598984

GHD Services, INC- Midland, Midland, TX

Project Name: CEMC LPU-60



Date Received in Lab:Thu Sep-13-18 01:00 pmReport Date:27-SEP-18Project Manager:Debbie Simmons

	Lab Id:	598984-0	)25	598984-0	26	598984-02	27	598984-0	28	598984-0	29	598984-0	30
Analysis Requested	Field Id:	SB13-40-08	30918	SB13-50-080918		SB13-60-080918		SB13-70-080918		SB13-80-080918		SB13-90-08	0918
Analysis Kequesica	Depth:	40-		50-		60-		70-		80-		90-	
	Matrix:	SOIL	SOIL		SOIL		SOIL			SOIL		SOIL	
	Sampled:	Sep-08-18	Sep-08-18 10:20		0:25	Sep-08-18 10:30		Sep-08-18 10:32		Sep-08-18 1	0:35	Sep-08-18 1	0:37
Chloride by EPA 300	Extracted:	Sep-16-18	Sep-16-18 17:30		7:30	Sep-16-18 17:30		Sep-16-18 17:30		Sep-16-18 1	7:30	Sep-16-18 1	7:30
	Analyzed:	Sep-17-18	01:21	Sep-17-18 01:28		Sep-17-18 01:36		Sep-17-18 01:58		Sep-17-18 02:05		Sep-17-18 02:13	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		107	5.36	<6.60	6.60	<5.35	5.35	<5.44	5.44	<8.94	8.94	<5.29	5.29
Percent Moisture	Extracted:												
	Analyzed:	Sep-13-18	Sep-13-18 18:30		8:30	Sep-13-18 1	8:30						
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		6.85		24.2		6.47		8.09		44.7		6.05	

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### Certificate of Analysis Summary 598984

GHD Services, INC- Midland, Midland, TX

Project Name: CEMC LPU-60



Date Received in Lab:Thu Sep-13-18 01:00 pmReport Date:27-SEP-18Project Manager:Debbie Simmons

	Lab Id:	598984-0	)31	598984-0	32	598984-0	33	598984-034		598984-0	35	598984-0	36
Analysis Requested	Field Id:	SB15-4-11	0918	SB15-10-110918		SB15-20-110918		SB15-30-110918		SB15-40-110918		SB15-50-11	0918
Anulysis Kequesieu	Depth:	4-		10-		20-		30-		40-		50-	
	Matrix:	SOIL	SOIL		SOIL		SOIL			SOIL		SOIL	
	Sampled:	Sep-11-18	Sep-11-18 08:55		08:57	Sep-11-18 0	9:00	Sep-11-18 (	09:02	Sep-11-18 (	9:05	Sep-11-18 (	09:07
Chloride by EPA 300	Extracted:	Sep-16-18	Sep-16-18 17:30		17:30	Sep-16-18 17:30		Sep-16-18 17:30		Sep-16-18 1	7:30	Sep-16-18 1	17:30
	Analyzed:	Sep-17-18	02:20	Sep-17-18 02:28		Sep-17-18 02:35		Sep-17-18 02:57		Sep-17-18 03:05		Sep-17-18 03:27	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		208	5.37	545	5.42	296	5.33	102	5.17	<8.12	8.12	8.20	5.16
Percent Moisture	Extracted:												
	Analyzed:	Sep-13-18	Sep-13-18 18:30		18:30	Sep-13-18 1	8:30	Sep-13-18	18:30	Sep-13-18 1	8:30	Sep-13-18 1	18:30
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		6.90		7.90		6.19		3.56		38.8		4.15	

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### Certificate of Analysis Summary 598984

GHD Services, INC- Midland, Midland, TX

Project Name: CEMC LPU-60



Date Received in Lab:Thu Sep-13-18 01:00 pmReport Date:27-SEP-18Project Manager:Debbie Simmons

	Lab Id:	598984-0	)37	598984-0	38	598984-0	39	598984-0	40	598984-0	41	598984-0	42
Analysis Requested	Field Id:	SB15-60-11	0918	SB15-70-11	0918	SB15-80-11	0918	SB15-90-11	.0918	SB16-4-11	0918	SB16-10-11	0918
Analysis Kequeslea	Depth:	60-		70-		80-		90-		4-		10-	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Sep-11-18	·		09:12	Sep-11-18 0	9:15	Sep-11-18	)9:17	Sep-11-18 (	09:40	Sep-11-18 0	09:50
Chloride by EPA 300	Extracted:	Sep-16-18	bep-16-18 17:30		17:30	Sep-16-18 1	7:30	Sep-16-18	17:30	Sep-16-18	17:30	Sep-16-18 1	7:30
	Analyzed:	Sep-17-18	03:34	Sep-17-18 0	03:42	Sep-17-18 0	3:49	Sep-17-18 (	03:57	Sep-17-18 (	04:04	Sep-17-18 0	04:11
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		<7.97	7.97	9.32	5.15	10.6	5.23	8.74	5.20	133	5.29	433	5.30
Percent Moisture	Extracted:												
	Analyzed:	Sep-13-18	18:30	Sep-13-18 1	18:30	Sep-13-18 1	8:30	Sep-13-18	18:30	Sep-14-18	12:30	Sep-14-18 1	2:30
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		37.9		3.73		4.27		4.67		5.54		4.98	

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### Certificate of Analysis Summary 598984

GHD Services, INC- Midland, Midland, TX

Project Name: CEMC LPU-60



Date Received in Lab:Thu Sep-13-18 01:00 pmReport Date:27-SEP-18Project Manager:Debbie Simmons

	Lab Id:	598984-0	)43	598984-0	)44	598984-0	45	598984-0	)46	598984-0	47	598984-0	48
Analysis Requested	Field Id:	SB16-20-11	10918	SB16-30-11	0918	SB16-40-11	0918	SB16-50-11	0918	SB16-60-11	0918	SB16-70-11	0918
Analysis Kequesiea	Depth:	20-		30-		40-		50-		60-		70-	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Sep-11-18	09:52	Sep-11-18	09:55	Sep-11-18 0	)9:57	Sep-11-18	10:00	Sep-11-18	10:02	Sep-11-18 1	0:05
Chloride by EPA 300	Extracted:	Sep-16-18	Sep-16-18 18:00		18:00	Sep-16-18 1	8:00	Sep-16-18	18:00	Sep-16-18	18:00	Sep-16-18 1	8:00
	Analyzed:	Sep-16-18	1		20:09	Sep-16-18 2	20:19	Sep-16-18 2	20:29	Sep-16-18 2	20:40	Sep-16-18 2	21:11
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		116	8.37	40.1	7.32	22.3	5.26	37.0	9.36	19.6	5.21	37.4	8.55
Percent Moisture	Extracted:												
	Analyzed:	Sep-14-18	12:30	Sep-14-18	12:30	Sep-14-18 1	2:30	Sep-14-18	12:30	Sep-14-18	12:30	Sep-14-18 1	2:30
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		39.6		31.8		5.17		46.5		4.84		41.3	

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### Certificate of Analysis Summary 598984

GHD Services, INC- Midland, Midland, TX

Project Name: CEMC LPU-60



Date Received in Lab:Thu Sep-13-18 01:00 pmReport Date:27-SEP-18Project Manager:Debbie Simmons

	Lab Id:	598984-0	)49	598984-0	50	598984-0	51	598984-0	52	598984-0	53	598984-0	54
Analysis Requested	Field Id:	SB16-80-11	10918	SB16-90-11	0918	SB17-4-110	)918	SB17-10-11	0918	SB17-20-11	0918	SB17-30-11	0918
Analysis Kequesiea	Depth:	80-		90-		4-		10-		20-		30-	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Sep-11-18	10:07	Sep-11-18	10:10	Sep-11-18 1	0:17	Sep-11-18	10:20	Sep-11-18	10:22	Sep-11-18 1	0:25
Chloride by EPA 300	Extracted:	Sep-16-18	Sep-16-18 18:00		18:00	Sep-16-18 1	8:00	Sep-16-18	18:00	Sep-16-18 1	18:00	Sep-16-18 1	8:00
	Analyzed:	Sep-16-18	1		21:32	Sep-16-18 2	1:42	Sep-16-18 2	21:52	Sep-16-18 2	22:03	Sep-16-18 2	22:34
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		23.0	5.59	22.8	5.33	69.4	5.18	21.5	5.31	23.6	5.28	19.4	5.13
Percent Moisture	Extracted:												
	Analyzed:	Sep-14-18	12:30	Sep-14-18 1	12:30	Sep-14-18 1	2:30	Sep-14-18	12:30	Sep-14-18 1	12:30	Sep-14-18 1	2:30
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		9.66		7.06		4.31		6.50		4.32		3.25	

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### Certificate of Analysis Summary 598984

GHD Services, INC- Midland, Midland, TX

Project Name: CEMC LPU-60



Date Received in Lab:Thu Sep-13-18 01:00 pmReport Date:27-SEP-18Project Manager:Debbie Simmons

	Lab Id:	598984-0	)55	598984-0	56	598984-0	57	598984-0	)58	598984-0	159	598984-0	60
Analysis Requested	Field Id:	SB17-40-11	0918	SB17-50-11	0918	SB17-60-11	0918	SB17-70-11	0918	SB17-80-11	.0918	SB17-90-11	0918
Analysis Kequesiea	Depth:	40-		50-		60-		70-		80-		90-	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Sep-11-18	10:27	Sep-11-18 1	10:30	Sep-11-18 1	0:32	Sep-11-18	10:35	Sep-11-18	10:37	Sep-11-18 1	10:40
Chloride by EPA 300	Extracted:	Sep-16-18	1		8:00	Sep-16-18 1	8:00	Sep-16-18	18:00	Sep-16-18	18:00	Sep-16-18 1	8:00
	Analyzed:	Sep-16-18	1		23:15	Sep-16-18 2	3:25	Sep-16-18	23:36	Sep-16-18 2	23:46	Sep-16-18 2	23:56
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		20.2	5.16	19.2	5.20	19.6	5.29	20.1	5.21	19.4	5.20	19.7	5.22
Percent Moisture	Extracted:												
	Analyzed:	Sep-14-18	12:30	Sep-14-18 1	2:30	Sep-14-18 1	2:30	Sep-14-18	12:30	Sep-14-18	12:30	Sep-14-18 1	2:30
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		4.14		4.44		4.88		4.84		4.54		4.57	

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GHD Services, INC- Midland, Midland, TX

Project Name: CEMC LPU-60



Date Received in Lab:Thu Sep-13-18 01:00 pmReport Date:27-SEP-18Project Manager:Debbie Simmons

	Lab Id:	598984-0	)61	598984-0	62	598984-0	63	598984-0	64	598984-0	)65	598984-0	66
Analysis Requested	Field Id:	SB18-4-11	0918	SB18-10-11	0918	SB18-20-11	0918	SB18-30-11	.0918	SB18-40-11	0918	SB18-50-11	0918
Analysis Kequestea	Depth:	4-		10-		20-		30-		40-		50-	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Sep-11-18			10:47	Sep-11-18 1	0:50	Sep-11-18	10:52	Sep-11-18	10:55	Sep-11-18 1	10:57
Chloride by EPA 300	Extracted:	Sep-16-18	1		8:00	Sep-16-18 1	8:30	Sep-16-18	18:30	Sep-16-18	18:30	Sep-16-18 1	18:30
	Analyzed:	Sep-17-18	1		00:17	Sep-17-18 0	)1:19	Sep-17-18 (	01:50	Sep-17-18 (	02:00	Sep-17-18 (	02:11
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		64.1	5.17	586	5.36	271	5.28	230	5.19	381	5.31	361	5.21
Percent Moisture	Extracted:												
	Analyzed:	Sep-14-18	12:30	Sep-14-18 1	2:30	Sep-14-18 1	2:30	Sep-14-18	12:30	Sep-14-18	12:30	Sep-14-18 1	12:30
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		4.29		6.75		6.03		4.67		5.92		4.98	

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### Certificate of Analysis Summary 598984

GHD Services, INC- Midland, Midland, TX

Project Name: CEMC LPU-60



Date Received in Lab:Thu Sep-13-18 01:00 pmReport Date:27-SEP-18Project Manager:Debbie Simmons

	Lab Id:	598984-0	)67	598984-0	)68	598984-0	69	598984-0	070	598984-0	71	598984-0	072
Analysis Requested	Field Id:	SB18-60-11	10918	SB18-70-11	0918	SB18-80-11	0918	SB18-90-11	0918	SB19-4-110	0918	SB19-10-11	0918
Analysis Kequesiea	Depth:	60-		70-		80-		90-		4-		10-	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Sep-11-18	<u> </u>		11:02	Sep-11-18 1	1:05	Sep-11-18	11:07	Sep-11-18 1	1:05	Sep-11-18 1	11:07
Chloride by EPA 300	Extracted:	Sep-16-18	Sep-16-18 18:30		18:30	Sep-16-18 1	8:30	Sep-16-18	18:30	Sep-16-18 1	8:30	Sep-16-18 1	18:30
	Analyzed:	Sep-17-18	02:21	Sep-17-18 0	02:52	Sep-17-18 0	3:03	Sep-17-18 (	03:13	Sep-17-18 0	03:23	Sep-17-18 0	03:34
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		175	5.30	138	5.28	49.4	5.24	85.9	5.23	102	5.18	125	5.39
Percent Moisture	Extracted:												
	Analyzed:	Sep-14-18	12:30	Sep-14-18 1	12:30	Sep-14-18 1	2:30	Sep-14-18	12:30	Sep-14-18 1	2:30	Sep-14-18 1	12:30
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		5.86		5.51		4.73		4.53		3.83		7.34	

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GHD Services, INC- Midland, Midland, TX

Project Name: CEMC LPU-60



Date Received in Lab:Thu Sep-13-18 01:00 pmReport Date:27-SEP-18Project Manager:Debbie Simmons

	Lab Id:	598984-0	073	598984-0	)74	598984-0	75	598984-0	)76	598984-0	)77	598984-0	78
Analysis Requested	Field Id:	SB19-20-1	10918	SB19-30-11	0918	SB19-40-11	0918	SB19-50-11	0918	SB19-60-11	.0918	SB19-70-11	0918
Anulysis Kequesieu	Depth:	20-		30-		40-		50-		60-		70-	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Sep-11-18	-		11:12	Sep-11-18 1	1:15	Sep-11-18	11:17	Sep-11-18	11:20	Sep-11-18	1:22
Chloride by EPA 300	Extracted:	Sep-16-18	ep-16-18 18:30		18:30	Sep-16-18 1	8:30	Sep-16-18	18:30	Sep-16-18	18:30	Sep-16-18 1	8:30
	Analyzed:	Sep-17-18	03:44	Sep-17-18 (	04:15	Sep-17-18 0	4:25	Sep-17-18 (	04:56	Sep-17-18 (	05:07	Sep-17-18 (	05:17
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		291	5.42	63.5	5.18	55.5	5.16	52.1	7.52	45.5	5.25	36.0	5.24
Percent Moisture	Extracted:												
	Analyzed:	Sep-14-18	12:30	Sep-14-18 1	12:30	Sep-14-18 1	2:30	Sep-14-18	12:30	Sep-14-18	12:30	Sep-14-18 1	2:30
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		7.77		3.53		3.85		33.9		4.75		5.16	

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GHD Services, INC- Midland, Midland, TX

Project Name: CEMC LPU-60



Date Received in Lab:Thu Sep-13-18 01:00 pmReport Date:27-SEP-18Project Manager:Debbie Simmons

	Lab Id:	598984-0	)79	598984-0	80	598984-0	81	598984-0	82	598984-0	83	598984-0	084
Analysis Requested	Field Id:	SB19-80-11	0918	SB19-90-11	.0918	SB20-4-110	918	SB20-10-11	0918	SB20-20-11	0918	SB20-30-11	0918
Analysis Kequesiea	Depth:	80-		90-		4-		10-		20-		30-	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Sep-11-18	11:25	Sep-11-18 1	11:27	Sep-11-18 1	1:42	Sep-11-18	11:45	Sep-11-18	11:47	Sep-11-18	11:50
Chloride by EPA 300	Extracted:	Sep-16-18	Sep-16-18 18:30		18:30	Sep-16-18 1	8:30	Sep-16-18	18:30	Sep-17-18 (	)8:30	Sep-17-18 (	)8:30
	Analyzed:	Sep-17-18	05:27	Sep-17-18 (	)5:38	Sep-17-18 0	5:48	Sep-17-18 (	)5:58	Sep-17-18 (	09:54	Sep-17-18 1	10:25
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		28.6	5.24	26.2	5.24	294	5.42	58.7	5.47	84.8	5.32	114	5.27
Percent Moisture	Extracted:												
	Analyzed:	Sep-14-18	12:30	Sep-14-18 1	12:30	Sep-14-18 1	2:30	Sep-14-18	12:30	Sep-14-18 1	12:30	Sep-14-18 1	12:30
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		4.62		4.57		8.68		8.18		7.03		4.22	

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### Certificate of Analysis Summary 598984

GHD Services, INC- Midland, Midland, TX

Project Name: CEMC LPU-60



Date Received in Lab:Thu Sep-13-18 01:00 pmReport Date:27-SEP-18Project Manager:Debbie Simmons

	Lab Id:	598984-0	)85	598984-0	86	598984-0	87	598984-0	)88	598984-0	89	598984-0	90
Analysis Requested	Field Id:	SB20-40-1	10918	SB20-50-11	0918	SB20-60-11	0918	SB20-70-11	0918	SB20-80-11	0918	SB20-90-11	0918
Analysis Kequesiea	Depth:	40-		50-		60-		70-		80-		90-	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Sep-11-18			1:57	Sep-11-18 1	2:00	Sep-11-18	12:02	Sep-11-18	12:05	Sep-11-18 1	2:07
Chloride by EPA 300	Extracted:	Sep-17-18	ep-17-18 08:30		)8:30	Sep-17-18 0	8:30	Sep-17-18 (	08:30	Sep-17-18 (	)8:30	Sep-17-18 0	08:30
	Analyzed:	Sep-17-18	10:35	Sep-17-18 1	0:45	Sep-17-18 1	0:56	Sep-17-18	11:27	Sep-17-18	1:37	Sep-17-18 1	1:47
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		291	5.31	590	5.26	1020	26.4	2040	26.3	2500	26.4	2390	26.1
Percent Moisture	Extracted:												
	Analyzed:	Sep-14-18	12:30	Sep-14-18 1	2:30	Sep-14-18 1	2:30	Sep-14-18	12:30	Sep-14-18	12:30	Sep-14-18 1	2:30
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		6.85		5.86		5.37		5.25		4.97		5.28	

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GHD Services, INC- Midland, Midland, TX

Project Name: CEMC LPU-60



Date Received in Lab:Thu Sep-13-18 01:00 pmReport Date:27-SEP-18Project Manager:Debbie Simmons

	Lab Id:	598984-0	)91	598984-0	92	598984-0	93	598984-0	94	598984-0	95	598984-0	96
Analysis Requested	Field Id:	SB14-4-11	0918	SB14-10-11	0918	SB14-20-11	0918	SB14-30-11	0918	SB14-40-11	0918	SB14-50-11	0918
Anulysis Kequesieu	Depth:	4-		10-		20-		30-		40-		50-	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Sep-11-18	·		07:55	Sep-11-18 0	07:57	Sep-11-18	08:00	Sep-11-18 (	08:02	Sep-11-18 0	08:05
Chloride by EPA 300	Extracted:	Sep-17-18	ep-17-18 08:30		)8:30	Sep-17-18 0	8:30	Sep-17-18 (	)8:30	Sep-17-18 (	)8:30	Sep-17-18 0	08:30
	Analyzed:	Sep-17-18	11:58	Sep-17-18 1	2:08	Sep-17-18 1	2:18	Sep-17-18	2:49	Sep-17-18 1	13:00	Sep-17-18 1	3:31
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		578	5.22	119	5.43	49.5	5.39	29.4	5.23	26.4	5.27	22.2	5.27
Percent Moisture	Extracted:												
	Analyzed:	Sep-14-18	12:30	Sep-14-18 1	12:30	Sep-14-18 1	2:30	Sep-14-18	12:30	Sep-14-18 1	12:30	Sep-14-18 1	2:30
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		5.14		7.90		6.80		5.39		5.29		5.34	

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

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

Debbie Semmon

Debbie Simmons Project Manager

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### Certificate of Analysis Summary 598984

GHD Services, INC- Midland, Midland, TX

Project Name: CEMC LPU-60



Date Received in Lab:Thu Sep-13-18 01:00 pmReport Date:27-SEP-18Project Manager:Debbie Simmons

	Lab Id:	598984-0	)97	598984-0	98	598984-0	99	598984-1	.00		
Analysis Requested	Field Id:	SB14-60-11	0918	SB14-70-11	0918	SB14-80-11	0918	SB14-90-11	0918		ſ
Analysis Kequesiea	Depth:	60-		70-		80-		90-			ľ
	Matrix:	SOIL		SOIL		SOIL		SOIL			ſ
	Sampled:	Sep-11-18 (	08:07	Sep-11-18 0	08:10	Sep-11-18 0	08:12	Sep-11-18 (	08:15		ľ
Chloride by EPA 300	Extracted:	Sep-17-18 (	Sep-17-18 08:30		)8:30	Sep-17-18 0	8:30	Sep-17-18 (	08:30		
	Analyzed:	Sep-17-18	13:41	Sep-17-18 1	3:52	Sep-17-18 1	4:02	Sep-17-18	14:12		ſ
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Chloride		23.1	5.24	25.2	5.36	23.3	5.32	21.9	5.32		
Percent Moisture	Extracted:										
	Analyzed:	Sep-14-18	12:30	Sep-14-18 1	2:30	Sep-14-18 1	2:30	Sep-14-18	12:30		
	Units/RL:	%	RL	%	RL	%	RL	%	RL		
Percent Moisture		5.55		5.70		6.89		6.99			

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Debbie Semmon

Debbie Simmons Project Manager

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1

#### GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample Ic	<b>MW2-4-080918</b> l: 598984-001		Matrix: Date Collec	Soil ted: 09.08.18 07.05		Date Received Sample Depth	d:09.13.18 13. n: 4	00
Analytical Me	ethod: Chloride by EPA 3	00				Prep Method:	E300P	
Tech:	SCM					% Moisture:	19.84	
Analyst:	SCM		Date Prep:	09.15.18 10.40		Basis:	Dry Weight	
Seq Number:	3063540							
Parameter		Cas Number	Result	RL	Units	Analysis D	ate Flag	Dil

16887-00-6 23.7

6.23

mg/kg

09.15.18 11.22





#### GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample Id	<b>MW2-10-080918</b> l: 598984-002		Matrix: Date Collec	Soil ted: 09.08.18 07.06		Date Received:09.13.18 13.00 Sample Depth: 10			
Analytical Me	thod: Chloride by EPA 3	00				Prep Method:	E300P		
Tech:	SCM					% Moisture:	7.08		
Analyst:	SCM		Date Prep:	09.15.18 10.40		Basis:	Dry We	ight	
Seq Number:	3063540								
Parameter		Cas Number	Result	RL	Units	Analysis D	ate F	lag Dil	

Chloride

25.3

16887-00-6

5.33

09.15.18 13.47

mg/kg

1





1

#### GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample Id	<b>MW2-20-080918</b> l: 598984-003		Matrix: Date Collec	Soil sted: 09.08.18 07.07		Date Received:09.13.18 13.0 Sample Depth: 20		
Analytical Me	thod: Chloride by EPA 3	800				Prep Method:	E300P	
Tech:	CHE					% Moisture:	4.9	
Analyst:	CHE		Date Prep:	09.16.18 17.00		Basis:	Dry Weight	t
Seq Number:	3063502							
Parameter		Cas Number	Result	RL	Units	Analysis D	ate Flag	Dil

Chloride

16887-00-6 **15.4** 

5.31

mg/kg 09.16.18 20.38





#### GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: MW2-30-080918   Lab Sample Id: 598984-004		Matrix: Date Collect	Soil ed: 09.08.18 07.10		Date Received:09.13.18 13.00 Sample Depth: 30		
Analytical Method: Chloride by EPA 3 Tech: CHE Analyst: CHE Seq Number: 3063502	800	Date Prep:	09.16.18 17.00		Prep Method: % Moisture: Basis:	E300P 27.59 Dry Weight	
Parameter	Cas Number	Result ]	RL	Units	Analysis D	ate Flag	Dil

< 6.97

Chloride

16887-00-6

6.97

mg/kg 09.1

09.16.18 21.01

U

1





#### GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id:MW2-40-080918Lab Sample Id:598984-005		Matrix: Date Collecte	Soil ed: 09.08.18 07.15		Date Received Sample Depth	d:09.13.18 13.00 n:40	0
Analytical Method: Chloride by EPA 3 Tech: CHE Analyst: CHE	300	Date Prep:	09.16.18 17.00		Prep Method: % Moisture: Basis:	E300P 30.32 Dry Weight	
Seq Number: 3063502	Coo Normhan	Decelé					51
Parameter	Cas Number	Result ]	RL	Units	Analysis D	ate Flag	Dil

<7.10

Chloride

16887-00-6

7.10

mg/kg

09.16.18 21.08

U

1





#### GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample Id	<b>MW2-50-080918</b> d: 598984-006		Matrix: Date Collec	Soil cted: 09.08.18 07.25		Date Received:09.13.18 13.00 Sample Depth: 50			
Analytical Me	ethod: Chloride by EPA 3	00				Prep Method:	E300P		
Tech:	CHE					% Moisture:	49.41		
Analyst:	CHE		Date Prep:	09.16.18 17.00		Basis:	Dry We	eight	
Seq Number:	3063502								
Parameter		Cas Number	Result	RL	Units	Analysis D	ate F	lag	Dil

Chloride

16887-00-6 **14.9** 

9.92

mg/kg 09.16.18 21.15

1





#### GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample Id	<b>MW2-60-080918</b> l: 598984-007		Matrix: Date Collec	Soil ted: 09.08.18 07.40		Date Received:09.13.18 13.00 Sample Depth: 60		
Analytical Me	thod: Chloride by EPA 3	00				Prep Method:	E300P	
Tech:	CHE					% Moisture:	6.09	
Analyst:	CHE		Date Prep:	09.16.18 17.00		Basis:	Dry Weight	
Seq Number:	3063502							
Parameter		Cas Number	Result	RL	Units	Analysis D	ate Flag	Dil

< 5.28

Chloride

16887-00-6

5.28

mg/kg

09.16.18 21.23

U

1





#### GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id:MW2-70-080918Lab Sample Id:598984-008		Matrix: Date Collect	Soil ed: 09.08.18 07.45		Date Received Sample Depth	d:09.13.18 13.00 n: 70	)
Analytical Method: Chloride by EPA 3 Tech: CHE Analyst: CHE Seq Number: 3063502	800	Date Prep:	09.16.18 17.00		Prep Method: % Moisture: Basis:	E300P 35.84 Dry Weight	
Parameter	Cas Number	Result	RL	Units	Analysis D	ate Flag	Dil

Chloride

16887-00-6 <7.72

7.72

mg/kg 09.16.

09.16.18 21.45

U

1





#### GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id:MW2-80-080918Lab Sample Id:598984-009		Matrix: Date Collect	Soil ed: 09.08.18 07.50		Date Received:09.13.18 13.00 Sample Depth: 80		
Analytical Method: Chloride by EPA Tech: CHE	300				Prep Method: % Moisture:	E300P	
Tech: CHE Analyst: CHE		Date Prep:	09.16.18 17.00		Basis:	Dry Weight	
Seq Number: 3063502							
Parameter	Cas Number	Result	RL	Units	Analysis D	ate Flag	Dil

< 5.68

Chloride

16887-00-6

5.68

mg/kg

09.16.18 21.53

U

1





#### GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id:MW2-90-080918Lab Sample Id:598984-010		Matrix: Date Collecte	Soil ed: 09.08.18 07.55		Date Received:09.13.18 13.00 Sample Depth: 90		
Analytical Method:Chloride by EPA 3Tech:CHEAnalyst:CHE	300	Date Prep:	09.16.18 17.00		Prep Method: % Moisture: Basis:	E300P 5.73 Dry Weight	
Seq Number: 3063502 Parameter	Cas Number	Result F	RL	Units	Analysis D	ate Flag	Dil

16887-00-6

<5.30 5.30

mg/kg

09.16.18 22.00

U

1




## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Parameter	Ca	as Number	Result	RL	Units	Analysis Da	ate F	lag	Dil
Seq Number: 306	3502								
Analyst: CHI	3		Date Prep:	09.16.18 17.00		Basis:	Dry We	eight	
Tech: CHI	E					% Moisture:	18.85		
Analytical Method:	Chloride by EPA 300					Prep Method:	E300P		
Sample Id:         SB12-4-080918           Lab Sample Id:         598984-011			Matrix: Soil Date Collected: 09.08.18 08.55		Date Received:09.13.18 13 Sample Depth: 4			8 13.00	
G 1 1 1 GD	12 4 000010		M. ( *	C '1		D ( D ( )	00 12 1	0 12 00	

16887-00-6 **11.4** 

6.10

mg/kg

09.16.18 22.07

1





## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id:         SB12-10-080918           Lab Sample Id:         598984-012		Matrix: Date Collecte	Soil ed: 09.08.18 09.00		Date Received Sample Depth	1:09.13.18 13.00 n: 10	)
Analytical Method: Chloride by Tech: CHE	EPA 300				Prep Method: % Moisture:	E300P 27.57	
Analyst: CHE		Date Prep:	09.16.18 17.00		Basis:	Dry Weight	
Seq Number: 3063502							
Parameter	Cas Number	Result I	8L	Units	Analysis D	ate Flag	Dil

Chloride

16887-00-6

< 6.86 6.86

09.16.18 22.15 mg/kg

U

1





## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample Id	<b>SB12-20-080918</b> d: 598984-013		Matrix: Date Collect	Soil ted: 09.08.18 09.05		Date Received Sample Depth	d:09.13.18 13.00 n: 20	)
•	ethod: Chloride by EPA	800				Prep Method:		
Tech:	CHE					% Moisture:	38.27	
Analyst:	CHE		Date Prep:	09.16.18 17.00		Basis:	Dry Weight	
Seq Number:	3063502							
Parameter		Cas Number	Result	RL	Units	Analysis D	ate Flag	Dil

< 8.05

Chloride

16887-00-6

8.05

mg/kg

09.16.18 22.22

U

1





## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample Id:	<b>SB12-30-080918</b> : 598984-014		Matrix: Date Collec	Soil cted: 09.08.18 09.10		Date Received Sample Depth		.00
Analytical Met	thod: Chloride by EPA 3	00				Prep Method:	E300P	
Tech:	CHE					% Moisture:	5.68	
Analyst:	CHE		Date Prep:	09.16.18 17.00		Basis:	Dry Weight	
Seq Number:	3063502							
Parameter		Cas Number	Result	RL	Units	Analysis D	ate Flag	Dil

7.26

Chloride

16887-00-6

5.29

mg/kg

09.16.18 22.45

1





1

## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Parameter		Cas Number	Result	RL	Units	Analysis D	ate Flag	Dil
Seq Number:	3063502							
Analyst:	CHE		Date Prep:	09.16.18 17.00		Basis:	Dry Weight	
Tech:	CHE					% Moisture:	6.06	
Analytical Me	ethod: Chloride by EPA 3	800				Prep Method:	E300P	
1	d: 598984-015		Date Collec	ted: 09.08.18 09.15		Sample Depth	1:40	
Sample Id:	SB12-40-080918		Matrix:	Soil		Date Received	1:09.13.18 13	.00

16887-00-6 **18.0** 

5.27

mg/kg 09.16.18 22.52





1

## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

•	d: 598984-016 ethod: Chloride by EPA 3	300	Date Collec	ted: 09.08.18 09.20		Sample Depth Prep Method:		
Tech:	CHE					% Moisture:	6.14	
Analyst:	CHE		Date Prep:	09.16.18 17.00		Basis:	Dry Weight	
Seq Number:	3063502							
Parameter		Cas Number	Result	RL	Units	Analysis D	ate Flag	Dil

Chloride

16887-00-6 **72.6** 

5.33

09.16.18 23.14

mg/kg





## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample I	<b>SB12-60-080918</b> d: 598984-017		Matrix: Date Colle	Soil cted: 09.08.18 09.25		Date Received: Sample Depth: 6	0	
Analytical Me	ethod: Chloride by EPA	300				Prep Method: 1	E300P	
Tech:	CHE					% Moisture: 4	42.06	
Analyst:	CHE		Date Prep:	09.16.18 17.00		Basis: I	Dry Weight	
Seq Number:	3063502		-					
Parameter		Cas Number	Result	RL	Units	Analysis Dat	e Flag	Dil
Chloride		16887-00-6	169	8.61	mg/kg	09.16.18 23.22	2	1





## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: SH Lab Sample Id: 59	<b>312-70-080918</b> 08984-018		Matrix: Date Collec	Soil ted: 09.08.18 09.30		Date Received Sample Depth		.00
5	l: Chloride by EPA 30	00				Prep Method:		
Tech: CH	IE					% Moisture:	7.78	
Analyst: CH	IE		Date Prep:	09.16.18 17.00		Basis:	Dry Weight	
Seq Number: 306	63502							
Parameter		Cas Number	Result	RL	Units	Analysis Da	ate Flag	Dil

Chloride

16887-00-6 **374** 

5.38

mg/kg 09.16.18 23.29

1





## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample Id	<b>SB12-80-080918</b> d: 598984-019		Matrix: Date Colle	Soil cted: 09.08.18 09.35		Date Received: Sample Depth:		0
Analytical Me	ethod: Chloride by EPA	300				Prep Method:	E300P	
Tech:	CHE					% Moisture:	47.12	
Analyst:	CHE		Date Prep:	09.16.18 17.00		Basis:	Dry Weight	
Seq Number:	3063502							
Parameter		Cas Number	Result	RL	Units	Analysis Dat	te Flag	Dil
Chloride		16887-00-6	458	9.46	mg/kg	09.16.18 23.3	7	1





## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample Id	<b>SB12-90-080918</b> d: 598984-020		Matrix: Date Collec	Soil cted: 09.08.18 09.40		Date Received Sample Depth		8 13.00	
Analytical Me	ethod: Chloride by EPA 3	00				Prep Method:	E300P		
Tech:	CHE					% Moisture:	6.66		
Analyst:	CHE		Date Prep:	09.16.18 17.00		Basis:	Dry We	ight	
Seq Number:	3063502								
Parameter		Cas Number	Result	RL	Units	Analysis D	ate Fl	ag	Dil

555

Chloride

16887-00-6

5.30

mg/kg

09.16.18 23.44

1





1

## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id:SB13-4-080918Lab Sample Id:598984-021		Matrix: Date Collecto	Soil ed: 09.08.18 10.00		Date Received Sample Depth		8 13.00	
Analytical Method: Chloride by EPA Tech: CHE Analyst: CHE	300	Date Prep:	09.16.18 17.00		Prep Method: % Moisture: Basis:	E300P 5.55 Dry We	ight	
Seq Number: 3063502 Parameter	Cas Number	Result ]	RL	Units	Analysis D	ate F	lag Di	il

75.6

16887-00-6

5.28

mg/kg

09.16.18 23.52





## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample Id	<b>SB13-10-080918</b> d: 598984-022		Matrix: Date Collec	Soil cted: 09.08.18 10.05		Date Received Sample Depth		8 13.00	
Analytical Me	ethod: Chloride by EPA 3	000				Prep Method:	E300P		
Tech:	CHE					% Moisture:	8.23		
Analyst:	CHE		Date Prep:	09.16.18 17.00		Basis:	Dry We	ight	
Seq Number:	3063502								
Parameter		Cas Number	Result	RL	Units	Analysis D	ate F	lag	Dil

39.5

Chloride

16887-00-6

5.44

09.16.18 23.59

mg/kg

1





1

## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id:SB13-20-080918Lab Sample Id:598984-023		Matrix: Date Collect	Soil ed: 09.08.18 10.10		Date Received Sample Depth	d:09.13.18 13. n: 20	00
Analytical Method: Chloride by EPA Tech: CHE	. 300				Prep Method: % Moisture:	E300P	
Analyst: CHE		Date Prep:	09.16.18 17.30		Basis:	Dry Weight	
Seq Number: 3063503 Parameter	Cas Number	Result	RL	Units	Analysis D	ate Flag	Dil

Chloride

16887-00-6 **92.2** 

8.83

09.17.18 00.51

mg/kg





1

## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: <b>SB13-30-080918</b> Lab Sample Id: 598984-024		Matrix: Date Collect	Soil eed: 09.08.18 10.15		Date Received Sample Depth	d:09.13.18 13. h: 30	00
Analytical Method: Chloride by EPA Tech: CHE Analyst: CHE	300	Date Prep:	09.16.18 17.30		Prep Method: % Moisture: Basis:	E300P 36.11 Dry Weight	
Seq Number: 3063503		Ĩ					
Parameter	Cas Number	Result	RL	Units	Analysis D	Date Flag	Dil

16887-00-6 **178** 

7.81

mg/kg 09

09.17.18 01.13





## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample Id	<b>SB13-40-080918</b> d: 598984-025		Matrix: Date Collec	Soil eted: 09.08.18 10.20		Date Received Sample Depth		3.00
Analytical Me	ethod: Chloride by EPA 3	00				Prep Method:	E300P	
Tech:	CHE					% Moisture:	6.85	
Analyst:	CHE		Date Prep:	09.16.18 17.30		Basis:	Dry Weight	t
Seq Number:	3063503							
Parameter		Cas Number	Result	RL	Units	Analysis D	ate Flag	Dil

107

Chloride

16887-00-6

5.36

mg/kg 09.17.18 01.21

1





## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample Id	<b>SB13-50-080918</b> l: 598984-026		Matrix: Date Collec	Soil ted: 09.08.18 10.25		Date Received Sample Depth	1:09.13.18 13.00 1:50	)
Analytical Me Tech:	thod: Chloride by EPA 3 CHE	00				Prep Method: % Moisture:	E300P 24.21	
Analyst:	CHE		Date Prep:	09.16.18 17.30		Basis:	Dry Weight	
Seq Number:	3063503							
Parameter		Cas Number	Result	RL	Units	Analysis D	ate Flag	Dil

Chloride

16887-00-6

< 6.60 6.60

mg/kg

09.17.18 01.28

U

1





## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id:SB13-60-080918Lab Sample Id:598984-027		Matrix: Date Collecte	Soil ed: 09.08.18 10.30	Date Received:09.13.18 13.0 Sample Depth: 60			0
Analytical Method: Chloride by EPA 3 Tech: CHE Analyst: CHE Seq Number: 3063503	800	Date Prep:	09.16.18 17.30		Prep Method: % Moisture: Basis:	E300P 6.47 Dry Weight	
Parameter	Cas Number	Result F	RL	Units	Analysis D	ate Flag	Dil

< 5.35

Chloride

16887-00-6

5.35

mg/kg 09.1

09.17.18 01.36

U

1





## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id:         SB13-70-080918           Lab Sample Id:         598984-028		Matrix: Date Collecte	Soil d: 09.08.18 10.32		Date Received Sample Depth	1:09.13.18 13.00 1:70	)
Analytical Method: Chloride by EPA 3 Tech: CHE Analyst: CHE Seg Number: 3063503	300	Date Prep:	09.16.18 17.30		Prep Method: % Moisture: Basis:	E300P 8.09 Dry Weight	
Parameter	Cas Number	Result P	RL.	Units	Analysis D	ate Flag	Dil

< 5.44

Chloride

16887-00-6

5.44

09.17.18 01.58 mg/kg

U

1





## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id:SB13-80-080918Lab Sample Id:598984-029		Matrix: Date Collecte	Soil d: 09.08.18 10.35		Date Received:09.13.18 13.0 Sample Depth: 80		
Analytical Method: Chloride by EPA 3 Tech: CHE Analyst: CHE Seq Number: 3063503	300	Date Prep:	09.16.18 17.30		Prep Method: % Moisture: Basis:	E300P 44.65 Dry Weight	
Parameter	Cas Number	Result F	RL	Units	Analysis D	ate Flag	Dil

16887-00-6

<8.94 8.94 mg/kg

09.17.18 02.05

U

1





## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id:SB13-90-080918Lab Sample Id:598984-030		Matrix: Date Collecte	Soil ed: 09.08.18 10.37		Date Received Sample Depth	1:09.13.18 13.00 n:90	
Analytical Method: Chloride by EPA 3 Tech: CHE Analyst: CHE Seq Number: 3063503	300	Date Prep:	09.16.18 17.30		Prep Method: % Moisture: Basis:	E300P 6.05 Dry Weight	
Parameter	Cas Number	Result I	RL .	Units	Analysis D	ate Flag	Dil

<5.29

Chloride

16887-00-6

5.29

mg/kg

09.17.18 02.13

U

1





## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Lab Sample Id: 598984 Analytical Method: Ch		Date Collect	ed: 09.11.18 08.55		Sample Depth: Prep Method:		
Tech: CHE Analyst: CHE		Date Prep:	09.16.18 17.30		% Moisture:	6.9 Dry Weight	
Seq Number: 3063503		Date Trep.	07.10.10 17.50	-	<b>Du</b> 515.	Dig woight	
Parameter	Cas Number	Result	RL	Units	Analysis Da	te Flag	Dil

Chloride

16887-00-6 208

5.37

09.17.18 02.20

mg/kg

1





## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample Id	<b>SB15-10-110918</b> d: 598984-032		Matrix: Date Collec	Soil ted: 09.11.18 08.57		Date Received Sample Depth	d:09.13.18 13.0 n: 10	00
Analytical Me	ethod: Chloride by EPA 3	800				Prep Method:	E300P	
Tech:	CHE					% Moisture:	7.9	
Analyst:	CHE		Date Prep:	09.16.18 17.30		Basis:	Dry Weight	
Seq Number:	3063503							
Parameter		Cas Number	Result	RL	Units	Analysis D	ate Flag	Dil

Chloride

16887-00-6 545

5.42

09.17.18 02.28

mg/kg

1





## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample Id	<b>SB15-20-110918</b> l: 598984-033		Matrix: Date Collec	Soil cted: 09.11.18 09.00		Date Received Sample Depth		3.00
Analytical Me	thod: Chloride by EPA 3	00				Prep Method:	E300P	
Tech:	CHE					% Moisture:	6.19	
Analyst:	CHE		Date Prep:	09.16.18 17.30		Basis:	Dry Weigh	t
Seq Number:	3063503							
Parameter		Cas Number	Result	RL	Units	Analysis Da	ate Flag	Dil

296

Chloride

16887-00-6

5.33

mg/kg 09.17.18 02.35

1





1

## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample Id	<b>SB15-30-110918</b> l: 598984-034		Matrix: Date Collec	Soil ted: 09.11.18 09.02		Date Received Sample Depth		.00
Analytical Me	ethod: Chloride by EPA 3	800				Prep Method:	E300P	
Tech:	CHE					% Moisture:	3.56	
Analyst:	CHE		Date Prep:	09.16.18 17.30		Basis:	Dry Weight	
Seq Number:	3063503							
Parameter		Cas Number	Result	RL	Units	Analysis D	ate Flag	Dil

Chloride

16887-00-6 **102** 

5.17

09.17.18 02.57

mg/kg





## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id:         SB15-40-110918           Lab Sample Id:         598984-035		Matrix: Date Collect	Soil ed: 09.11.18 09.05		Date Received Sample Depth	d:09.13.18 13.00 n: 40	)
Analytical Method: Chloride by EPA 3 Tech: CHE Analyst: CHE Seq Number: 3063503	300	Date Prep:	09.16.18 17.30		Prep Method: % Moisture: Basis:	E300P 38.82 Dry Weight	
Parameter	Cas Number	Result	RL	Units	Analysis D	ate Flag	Dil

Chloride

16887-00-6 <8.12

8.12

mg/kg

09.17.18 03.05

U

1





## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample Id	<b>SB15-50-110918</b> l: 598984-036		Matrix: Date Collec	Soil cted: 09.11.18 09.07		Date Received Sample Depth	5.00	
5	thod: Chloride by EPA 3	00				Prep Method:		
Tech:	CHE					% Moisture:	4.15	
Analyst:	CHE		Date Prep:	09.16.18 17.30		Basis:	Dry Weight	
Seq Number:	3063503							
Parameter		Cas Number	Result	RL	Units	Analysis D	ate Flag	Dil

Chloride

16887-00-6 **8.20** 

5.16

mg/kg 09.17.18 03.27

1





## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id:SB15-60-110918Lab Sample Id:598984-037		Matrix: Date Collecte	Soil d: 09.11.18 09.10		Date Received Sample Depth	d:09.13.18 13.0 n: 60	00
Analytical Method:Chloride by EPA 3Tech:CHEAnalyst:CHESeq Number:3063503	300	Date Prep:	09.16.18 17.30		Prep Method: % Moisture: Basis:	E300P 37.86 Dry Weight	
Parameter	Cas Number	Result F	L	Units	Analysis D	ate Flag	Dil

Chloride

16887-00-6 <7.97

7.97

mg/kg 09.17.18 03.34

U

1





1

## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample Id	<b>SB15-70-110918</b> l: 598984-038		Matrix: Date Collec	Soil ted: 09.11.18 09.12		Date Received Sample Depth	0	
Analytical Me	thod: Chloride by EPA 3	600				Prep Method:	E300P	
Tech:	CHE					% Moisture:	3.73	
Analyst:	CHE		Date Prep:	09.16.18 17.30		Basis:	Dry Weight	
Seq Number:	3063503							
Parameter		Cas Number	Result	RL	Units	Analysis D	ate Flag	Dil

Chloride

16887-00-6 **9.32** 

5.15

mg/kg 09.17.18 03.42





## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

1	l: 598984-039 .thod: Chloride by EPA 3	600	Date Collec	ted: 09.11.18 09.15		Sample Depth Prep Method:		
Tech:	CHE					% Moisture:	4.27	
Analyst:	CHE		Date Prep:	09.16.18 17.30		Basis:	Dry Wei	ght
Seq Number:	3063503							
Parameter		Cas Number	Result	RL	Units	Analysis D	ate Fla	ag Dil

Chloride

16887-00-6 **10.6** 

5.23

mg/kg 09.17.18 03.49

1





## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample Id	<b>SB15-90-110918</b> d: 598984-040		Matrix: Date Collec	Soil eted: 09.11.18 09.17		Date Received:09.13.18 13.00 Sample Depth: 90		
Analytical Me	ethod: Chloride by EPA 3	600				Prep Method:	E300P	
Tech:	CHE					% Moisture:	4.67	
Analyst:	CHE		Date Prep:	09.16.18 17.30		Basis:	Dry Weight	
Seq Number:	3063503							
Parameter		Cas Number	Result	RL	Units	Analysis D	ate Flag	Dil

Chloride

16887-00-6 **8.74** 

5.20

)

09.17.18 03.57

mg/kg

1





1

## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id:SB16-4-110918Lab Sample Id:598984-041		Matrix: Date Collecte	Soil ed: 09.11.18 09.40			Date Received:09.13.18 13.00 Sample Depth: 4		
Analytical Method: Chloride by EPA 3 Tech: CHE Analyst: CHE Seq Number: 3063503	800	Date Prep:	09.16.18 17.30		Prep Method: % Moisture: Basis:	E300P 5.54 Dry Weight		
Parameter	Cas Number	Result I	RL	Units	Analysis D	ate Flag	Dil	

16887-00-6 133

5.29

mg/kg 09.17.18 04.04





## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: SB Lab Sample Id: 59	<b>816-10-110918</b> 8984-042		Matrix: Date Collec	Soil ted: 09.11.18 09.50		Date Received Sample Depth	1:09.13.18 13.0 1:10	0
Analytical Method	: Chloride by EPA 30	00				Prep Method:	E300P	
Tech: CH	E					% Moisture:	4.98	
Analyst: CH	Е		Date Prep:	09.16.18 17.30		Basis:	Dry Weight	
Seq Number: 306	53503							
Parameter		Cas Number	Result	RL	Units	Analysis D	ate Flag	Dil

16887-00-6 **433** 

5.30

mg/kg

09.17.18 04.11

1

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Final 1.000





1

## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: <b>SB16-20</b> Lab Sample Id: 598984-(		Matrix: Date Collect	Soil ed: 09.11.18 09.52		e Received:09.1 nple Depth: 20	13.18 13.00	
Analytical Method: Chlo Tech: SCM	oride by EPA 300		00.16.10.10.00	% N	p Method: E30 Moisture: 39.6	53	
Analyst: SCM Seq Number: 3063560		Date Prep:	09.16.18 18.00	Bas	ais: Dry	Weight	
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil

Chloride

16887-00-6 **116** 

8.37

mg/kg

09.16.18 19.38





1

## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample Id	<b>SB16-30-110918</b> d: 598984-044		Matrix: Date Collec	Soil ted: 09.11.18 09.55		Date Received Sample Depth	d:09.13.18 13.0 n: 30	0
Analytical Me	ethod: Chloride by EPA 3	00				Prep Method:	E300P	
Tech:	SCM					% Moisture:	31.84	
Analyst:	SCM		Date Prep:	09.16.18 18.00		Basis:	Dry Weight	
Seq Number:	3063560							
Parameter		Cas Number	Result	RL	Units	Analysis D	ate Flag	Dil

16887-00-6 **40.1** 

7.32

mg/kg 09.16.18 20.09





## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Parameter		Cas Number	Result	RL	Units	Analysis D	ate Flag	Dil
Seq Number:	3063560							
Analyst:	SCM		Date Prep:	09.16.18 18.00		Basis:	Dry Weight	
Tech:	SCM					% Moisture:	5.17	
Analytical Me	thod: Chloride by EPA 3	00				Prep Method:	E300P	
1	1: 598984-045		Date Collec	eted: 09.11.18 09.57		Sample Depth		
Sample Id:	SB16-40-110918		Matrix:	Soil		Date Received	d:09.13.18 13	3.00

16887-00-6 22.3

5.26

09.16.18 20.19 mg/kg

1





## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample Id	<b>SB16-50-110918</b> l: 598984-046		Matrix: Date Colle	Soil cted: 09.11.18 10.00		Date Received Sample Depth	d:09.13.18 13.0 n: 50	0
Analytical Me	ethod: Chloride by EPA 3	600				Prep Method:	E300P	
Tech:	SCM					% Moisture:	46.49	
Analyst:	SCM		Date Prep:	09.16.18 18.00		Basis:	Dry Weight	
Seq Number:	3063560							
Parameter		Cas Number	Result	RL	Units	Analysis D	ate Flag	Dil

37.0

16887-00-6

9.36

mg/kg

09.16.18 20.29

1




## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample Id	<b>SB16-60-110918</b> d: 598984-047		Matrix: Date Collec	Soil cted: 09.11.18 10.02		Date Received:09.13.18 13.00 Sample Depth: 60		
Analytical Me	ethod: Chloride by EPA 3	600				Prep Method:	E300P	
Tech:	SCM					% Moisture:	4.84	
Analyst:	SCM		Date Prep:	09.16.18 18.00		Basis:	Dry Weight	
Seq Number:	3063560							
Parameter		Cas Number	Result	RL	Units	Analysis D	ate Flag	Dil

16887-00-6 **19.6** 

5.21

mg/kg 09.16.18 20.40





## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Parameter		Cas Number	Result	RL	Units	Analysis D	ate Flag	Dil
Seq Number:	3063560							
Analyst:	SCM		Date Prep:	09.16.18 18.00		Basis:	Dry Weight	
Tech:	SCM					% Moisture:	41.27	
Analytical Me	thod: Chloride by EPA 3	00				Prep Method:	E300P	
Sample Id: Lab Sample Ic	<b>SB16-70-110918</b> l: 598984-048		Matrix: Date Collec	Soil ted: 09.11.18 10.05		Date Received:09.13.18 13.00 Sample Depth: 70		
Commite Id.	CD17 70 110010		Mateire	Sail		Data Dasaiwa	4.00 12 10 12 (	00

Chloride

16887-00-6 **37.4** 

8.55

mg/kg 09.16.18 21.11

1





## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample Id	<b>SB16-80-110918</b> l: 598984-049		Matrix: Date Colle	Soil cted: 09.11.18 10.07		Date Received:09.13.18 13.00 Sample Depth: 80		
Analytical Me	ethod: Chloride by EPA 3	800				Prep Method:	E300P	
Tech:	SCM					% Moisture:	9.66	
Analyst:	SCM		Date Prep:	09.16.18 18.00		Basis:	Dry Weight	
Seq Number:	3063560							
Parameter		Cas Number	Result	RL	Units	Analysis D	ate Flag	Dil

Chloride

16887-00-6 **23.0** 

5.59

mg/kg 09.16.18 21.21





## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample Id	<b>SB16-90-110918</b> 1: 598984-050		Matrix: Date Collec	Soil ted: 09.11.18 10.10		Date Received:09.13.18 13.00 Sample Depth: 90		
Analytical Me	ethod: Chloride by EPA 3	800				Prep Method:	E300P	
Tech:	SCM					% Moisture:	7.06	
Analyst:	SCM		Date Prep:	09.16.18 18.00		Basis:	Dry Weight	
Seq Number:	3063560							
Parameter		Cas Number	Result	RL	Units	Analysis D	ate Flag	Dil

Chloride

22.8

16887-00-6

5.33

mg/kg 09.16.18 21.32





## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample Id	<b>SB17-4-110918</b> d: 598984-051		Matrix: Date Collec	Soil cted: 09.11.18 10.17	Date Received:09.13.18 13. Sample Depth: 4			3.00
2	ethod: Chloride by EPA 3	600				Prep Method:		
Tech:	SCM					% Moisture:	4.31	
Analyst:	SCM		Date Prep:	09.16.18 18.00		Basis:	Dry Weigh	nt
Seq Number:	3063560							
Parameter		Cas Number	Result	RL	Units	Analysis Da	ate Flag	Dil

Chloride

16887-00-6 **69.4** 

5.18

mg/kg 09.16.18 21.42

1





## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample Ic	<b>SB17-10-110918</b> l: 598984-052		Matrix: Date Collec	Soil ted: 09.11.18 10.20		Date Received:09.13.18 13.00 Sample Depth: 10		
Analytical Me Tech:	ethod: Chloride by EPA 3 SCM	300				Prep Method: % Moisture:	E300P 6.5	
Analyst:	SCM		Date Prep:	09.16.18 18.00		Basis:	Dry Weight	
Seq Number:	3063560							
Parameter		Cas Number	Result	RL	Units	Analysis D	ate Flag	Dil

Chloride

21.5

16887-00-6

5.31

mg/kg 09.16.18 21.52





1

## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample Ic	<b>SB17-20-110918</b> l: 598984-053		Matrix: Date Collec	Soil cted: 09.11.18 10.22		Date Received:09.13.18 13.00 Sample Depth: 20		
5	ethod: Chloride by EPA 3	00				Prep Method:		
Tech:	SCM					% Moisture:	4.32	
Analyst:	SCM		Date Prep:	09.16.18 18.00		Basis:	Dry Weigh	nt
Seq Number:	3063560							
Parameter		Cas Number	Result	RL	Units	Analysis Da	ate Flag	Dil

Chloride

16887-00-6 **23.6** 

5.28

mg/kg

09.16.18 22.03





1

## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Parameter		Cas Number	Result	RL	Units	Analysis D	ate Flag	Dil
Seq Number:	3063560							
Analyst:	SCM		Date Prep:	09.16.18 18.00		Basis:	Dry Weight	
Tech:	SCM					% Moisture:	3.25	
Analytical Me	thod: Chloride by EPA 3	00				Prep Method:	E300P	
Sample Id: Lab Sample Ic	<b>SB17-30-110918</b> l: 598984-054		Matrix: Date Collec	Soil eted: 09.11.18 10.25		Date Received:09.13.18 13.00 Sample Depth: 30		
C 1 T 1	CD15 20 110010		M. ( *	0.11		D ( D '	1 00 12 10 12 0	0

Chloride

19.4

16887-00-6

5.13

09.16.18 22.34

mg/kg





1

## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: SB Lab Sample Id: 598	<b>7-40-110918</b> 984-055	Matrix: Date Co	Soil llected: 09.11.18 10.		Date Received:09.13.18 13.00 Sample Depth: 40		
Analytical Method: Tech: SCM Analyst: SCM		Date Pro	ep: 09.16.18 18.	% Moisture	od: E300P e: 4.14 Dry Weight		
Seq Number: 3063 Parameter	560 Cas Nu	mber Result	RL	Units Analysi	s Date Flag	Dil	

16887-00-6 **20.2** 

5.16

mg/kg 09.16.18 22.44





## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample Id	<b>SB17-50-110918</b> 1: 598984-056		Matrix: Date Collec	Soil ted: 09.11.18 10.30		Date Received:09.13.18 13.00 Sample Depth: 50		
Analytical Me	ethod: Chloride by EPA 3	000				Prep Method:	E300P	
Tech:	SCM					% Moisture:	4.44	
Analyst:	SCM		Date Prep:	09.16.18 18.00		Basis:	Dry Weight	
Seq Number:	3063560							
Parameter		Cas Number	Result	RL	Units	Analysis D	ate Flag	Dil

16887-00-6 **19.2** 

5.20

0

09.16.18 23.15

mg/kg

1





## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample Id	<b>SB17-60-110918</b> d: 598984-057		Matrix: Date Collec	Soil eted: 09.11.18 10.32		Date Received:09.13.18 13.00 Sample Depth: 60		
Analytical Me	ethod: Chloride by EPA 3	00				Prep Method:	E300P	
Tech:	SCM					% Moisture:	4.88	
Analyst:	SCM		Date Prep:	09.16.18 18.00		Basis:	Dry Weight	
Seq Number:	3063560							
Parameter		Cas Number	Result	RL	Units	Analysis D	ate Flag	Dil

16887-00-6 **19.6** 

5.29

09.16.18 23.25

mg/kg

1





## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample Ic	<b>SB17-70-110918</b> l: 598984-058		Matrix: Date Collec	Soil ted: 09.11.18 10.35		Date Received Sample Depth	00	
Analytical Me	ethod: Chloride by EPA 3	000				Prep Method:	E300P	
Tech:	SCM					% Moisture:	4.84	
Analyst:	SCM		Date Prep:	09.16.18 18.00		Basis:	Dry Weight	
Seq Number:	3063560							
Parameter		Cas Number	Result	RL	Units	Analysis D	ate Flag	Dil

16887-00-6 **20.1** 

5.21

mg/kg 09.16.18 23.36

1





## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: <b>SB17-80</b> Lab Sample Id: 598984-0		Matrix: Date Collect	Soil eed: 09.11.18 10.37		ate Received:09 ample Depth: 80		
Analytical Method: Chl Tech: SCM	oride by EPA 300				rep Method: E3 Moisture: 4.5		
Analyst: SCM		Date Prep:	09.16.18 18.00	В	asis: Dr	y Weight	
Seq Number: 3063560							
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil

16887-00-6 **19.4** 

5.20

mg/kg

09.16.18 23.46

1

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## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample Id	<b>SB17-90-110918</b> d: 598984-060		Matrix: Date Collec	Soil ted: 09.11.18 10.40		Date Received Sample Depth	d:09.13.18 13. 1:90	00
Analytical Me	ethod: Chloride by EPA 3	300				Prep Method:	E300P	
Tech:	SCM					% Moisture:	4.57	
Analyst:	SCM		Date Prep:	09.16.18 18.00		Basis:	Dry Weight	
Seq Number:	3063560							
Parameter		Cas Number	Result	RL	Units	Analysis D	ate Flag	Dil

Chloride

19.7

16887-00-6

5.22

09.16.18 23.56

mg/kg





## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: SI Lab Sample Id: 59	<b>B18-4-110918</b> 98984-061		Matrix: Date Collec	Soil ted: 09.11.18 10.45		Date Received Sample Depth		3.00
Analytical Method Tech: SC	d: Chloride by EPA 30	00				Prep Method: % Moisture:	E300P 4.29	
Analyst: SC	CM		Date Prep:	09.16.18 18.00		Basis:	Dry Weigl	ht
Seq Number: 30	63560							
Parameter		Cas Number	Result	RL	Units	Analysis D	ate Flag	g Dil

16887-00-6 **64.1** 

5.17

mg/kg 09.17.18 00.07





## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id:SB18-10-110918Lab Sample Id:598984-062		Matrix: Date Collec	Soil ted: 09.11.18 10.47		Date Received Sample Depth		00
Analytical Method: Chloride by EPA	300				Prep Method:	E300P	
Tech: SCM					% Moisture:	6.75	
Analyst: SCM		Date Prep:	09.16.18 18.00		Basis:	Dry Weight	
Seq Number: 3063560							
Parameter	Cas Number	Result	RL	Units	Analysis Da	ate Flag	Dil
Chloride	16887-00-6	586	5.36	mg/kg	09.17.18 00.	17	1





1

## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample Ic	<b>SB18-20-110918</b> l: 598984-063		Matrix: Date Collec	Soil eted: 09.11.18 10.50		Date Received Sample Depth	1:09.13.18 13.0 : 20	00
Analytical Me Tech:	thod: Chloride by EPA 3 SCM	00				Prep Method: % Moisture:	E300P 6.03	
Analyst:	SCM		Date Prep:	09.16.18 18.30		Basis:	Dry Weight	
Seq Number:	3063564							
Parameter		Cas Number	Result	RL	Units	Analysis D	ate Flag	Dil

16887-00-6 271

5.28

mg/kg 09.17.18 01.19

01.19





## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample Id	<b>SB18-30-110918</b> : 598984-064		Matrix: Date Collec	Soil cted: 09.11.18 10.52		Date Received: Sample Depth: 3		0
Analytical Me	thod: Chloride by EPA	300				Prep Method: H	E300P	
Tech:	SCM					% Moisture: 4	1.67	
Analyst:	SCM		Date Prep:	09.16.18 18.30		Basis: I	Dry Weight	
Seq Number:	3063564							
Parameter		Cas Number	Result	RL	Units	Analysis Date	e Flag	Dil
Chloride		16887-00-6	230	5.19	mg/kg	09.17.18 01.50	)	1





## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id:SB18-40-110918Lab Sample Id:598984-065		Matrix: Date Collec	Soil eted: 09.11.18 10.55		Date Received Sample Depth:		00
Analytical Method: Chloride by EPA	300				Prep Method:	E300P	
Tech: SCM					% Moisture:	5.92	
Analyst: SCM		Date Prep:	09.16.18 18.30		Basis:	Dry Weight	
Seq Number: 3063564							
Parameter	Cas Number	Result	RL	Units	Analysis Da	ate Flag	Dil
Chloride	16887-00-6	381	5.31	mg/kg	09.17.18 02.	00	1



# **Certificate of Analytical Results 598984**



## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample Id	<b>SB18-50-110918</b> d: 598984-066		Matrix: Date Colle	Soil cted: 09.11.18 10.57		Date Received:09. Sample Depth: 50		00
Analytical Me Tech: Analyst: Seq Number:	ethod: Chloride by EPA SCM SCM 3063564	x 300	Date Prep:	09.16.18 18.30		Prep Method: E3 % Moisture: 4.9 Basis: Dr		
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride		16887-00-6	361	5.21	mg/kg	09.17.18 02.11		1



# **Certificate of Analytical Results 598984**



## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample Id	<b>SB18-60-110918</b> d: 598984-067		Matrix: Date Colle	Soil cted: 09.11.18 11.00		Date Received:09. Sample Depth: 60	13.18 13.0	0
Analytical Me Tech: Analyst: Seq Number:	ethod: Chloride by EPA SCM SCM 3063564	x 300	Date Prep:	09.16.18 18.30		Prep Method: E30 % Moisture: 5.8 Basis: Dry		
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride		16887-00-6	175	5.30	mg/kg	09.17.18 02.21		1



# **Certificate of Analytical Results 598984**



## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample I	<b>SB18-70-110918</b> d: 598984-068		Matrix: Date Colle	Soil cted: 09.11.18 11.02		Date Received:09. Sample Depth: 70		0
Analytical Me	ethod: Chloride by EPA	A 300				Prep Method: E3	00P	
Tech:	SCM					% Moisture: 5.5	1	
Analyst:	SCM		Date Prep:	09.16.18 18.30		Basis: Dry	y Weight	
Seq Number:	3063564							
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride		16887-00-6	138	5.28	mg/kg	09.17.18 02.52		1





## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample Id:	<b>SB18-80-110918</b> : 598984-069		Matrix: Date Collec	Soil eted: 09.11.18 11.05		Date Received Sample Depth		.00
	thod: Chloride by EPA 3	00				Prep Method: % Moisture:	E300P 4.73	
Analyst:	SCM		Date Prep:	09.16.18 18.30		Basis:	4.75 Dry Weight	
	3063564	~	_					
Parameter		Cas Number	Result	RL	Units	Analysis Da	ate Flag	Dil

16887-00-6 **49.4** 

5.24

mg/kg 09.17.18 03.03





1

## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Tech: Analyst:	SCM SCM		Date Prep:	09.16.18 18.30			4.53 Dry Weight	
Seq Number: Parameter	3063564	Cas Number	Result	RL	Units	Analysis Da	te Flag	Dil

16887-00-6 **85.9** 

5.23

mg/kg 09.1

09.17.18 03.13





1

## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: SB1 Lab Sample Id: 5989	<b>9-4-110918</b> 984-071		Matrix: Date Collecte	Soil d: 09.11.18 11.05		Date Received Sample Depth:		3.00
Tech: SCM	Chloride by EPA 300			00.17.19.19.20	ç		3.83	
Analyst: SCM Seq Number: 3063	564		Date Prep:	09.16.18 18.30	1	Basis:	Dry Weight	I
Parameter	Cas	Number R	Result R	L	Units	Analysis Da	te Flag	Dil

16887-00-6 **102** 

5.18

mg/kg 09.17.18 03.23





1

## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample Ic	<b>SB19-10-110918</b> l: 598984-072		Matrix: Date Collec	Soil eted: 09.11.18 11.07		Date Received Sample Depth	d:09.13.18 13.0 n: 10	00
Analytical Me	thod: Chloride by EPA 3	00				Prep Method:	E300P	
Tech:	SCM					% Moisture:	7.34	
Analyst:	SCM		Date Prep:	09.16.18 18.30		Basis:	Dry Weight	
Seq Number:	3063564							
Parameter		Cas Number	Result	RL	Units	Analysis D	ate Flag	Dil

Chloride

16887-00-6 **125** 

5.39

mg/kg 09.17.18 03.34





1

## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample Id	<b>SB19-20-110918</b> l: 598984-073		Matrix: Date Collec	Soil ted: 09.11.18 11.10		Date Received Sample Depth		13.00
5	thod: Chloride by EPA 3	00				Prep Method:		
Tech: Analyst:	SCM SCM		Date Prep:	09.16.18 18.30		% Moisture: Basis:	7.77 Dry Weig	ht
Seq Number:	3063564							
Parameter		Cas Number	Result	RL	Units	Analysis D	ate Fla	g Dil

Chloride

16887-00-6 **291** 

5.42

09.17.18 03.44

mg/kg





## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: SB1 Lab Sample Id: 598	<b>19-30-110918</b> 984-074		Matrix: Date Collect	Soil ed: 09.11.18 11.12		Date Received Sample Depth:		3.00
5	Chloride by EPA 300					Prep Method: % Moisture:	E300P 3.53	
Tech: SCM Analyst: SCM			Date Prep:	09.16.18 18.30		% Moisture: Basis:	5.55 Dry Weigh	t
Seq Number: 3063								
Parameter	C	as Number	Result	RL	Units	Analysis Da	ite Flag	Dil

Chloride

16887-00-6 **63.5** 

5.18

mg/kg 09.17.18 04.15





## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Parameter		Cas Number	Result	RL	Units	Analysis Da	ate Flag	Dil
Seq Number:	3063564							
Analyst:	SCM		Date Prep:	09.16.18 18.30		Basis:	Dry Weight	
Tech:	SCM					% Moisture:	3.85	
Analytical Me	ethod: Chloride by EPA 3	600				Prep Method:	E300P	
Lab Sample Io	d: 598984-075		Date Collec	ted: 09.11.18 11.15		Sample Depth	:40	
Sample Id:	SB19-40-110918		Matrix:	Soil		Date Received	1:09.13.18 13.	00

16887-00-6 55.5

5.16

mg/kg 09.17.18 04.25

1





1

## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample Id	<b>SB19-50-110918</b> : 598984-076		Matrix: Date Collec	Soil eted: 09.11.18 11.17		Date Received Sample Depth	d:09.13.18 13.0 n: 50	0
Analytical Met Tech:	thod: Chloride by EPA 3 SCM	00				Prep Method: % Moisture:	E300P 33.92	
Analyst:	SCM		Date Prep:	09.16.18 18.30		Basis:	Dry Weight	
Seq Number:	3063564							
Parameter		Cas Number	Result	RL	Units	Analysis D	ate Flag	Dil

Chloride

52.1

16887-00-6

7.52

mg/kg 09.17.18 04.56





## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Tech:SCM% Moisture:4.75Analyst:SCMDate Prep:09.16.1818.30Basis:Dry WeightSeq Number:3063564	
Tech: SCM % Moisture: 4.75	
Analytical Method: Chloride by EPA 300 Prep Method: E300P	
Sample Id: SB19-60-110918 Matrix: Soil Date Received:09.13.18 13   Lab Sample Id: 598984-077 Date Collected: 09.11.18 11.20 Sample Depth: 60	00

Chloride

16887-00-6 **45.5** 

5.25

mg/kg 09.17.18 05.07





## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample Ic	<b>SB19-70-110918</b> l: 598984-078		Matrix: Date Collec	Soil cted: 09.11.18 11.22		Date Received Sample Depth		.18 13.00	
Analytical Me Tech: Analyst:	thod: Chloride by EPA 3 SCM SCM	00	Date Prep:	09.16.18 18.30		Prep Method: % Moisture: Basis:	5.16	P Veight	
Seq Number:	3063564								
Parameter		Cas Number	Result	RL	Units	Analysis D	ate	Flag	Dil

16887-00-6 **36.0** 

5.24

mg/kg

09.17.18 05.17

1





## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample Id:	<b>SB19-80-110918</b> 598984-079		Matrix: Date Collec	Soil cted: 09.11.18 11.25		Date Received Sample Depth		00
Analytical Meth	hod: Chloride by EPA 3	00				Prep Method:	E300P	
Tech:	SCM					% Moisture:	4.62	
Analyst:	SCM		Date Prep:	09.16.18 18.30		Basis:	Dry Weight	
Seq Number:	3063564							
Parameter		Cas Number	Result	RL	Units	Analysis D	ate Flag	Dil

16887-00-6 28.6

5.24

.24

mg/kg 09.17.18 05.27

1





## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: <b>SB19-90-</b> Lab Sample Id: 598984-0		Matrix: Date Collect	Soil ed: 09.11.18 11.27		Date Received:0 Sample Depth: 9		)
Analytical Method: Chlo Tech: SCM	ride by EPA 300				Prep Method: E 6 Moisture: 4	300P .57	
Analyst: SCM Seq Number: 3063564		Date Prep:	09.16.18 18.30	I	Basis: D	ry Weight	
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil

Chloride

16887-00-6 26.2

5.24

mg/kg 09.17.18 05.38





## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Parameter		Cas Number	Result	RL	Units	Analysis Da	ate Flag	Dil
Seq Number:	3063564							
Analyst:	SCM		Date Prep:	09.16.18 18.30	]	Basis:	Dry Weight	
Tech:	SCM				(	% Moisture:	8.68	
Analytical Me	ethod: Chloride by EPA 3	800			]	Prep Method:	E300P	
Lab Sample Io	d: 598984-081		Date Collec	ted: 09.11.18 11.42	:	Sample Depth	:4	
Sample Id:	SB20-4-110918		Matrix:	Soil	]	Date Received	1:09.13.18 13.	00

Chloride

16887-00-6 **294** 

5.42

mg/kg 09.17.18 05.48





## GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample Ic	<b>SB20-10-110918</b> l: 598984-082		Matrix: Date Collec	Soil cted: 09.11.18 11.45		Date Received Sample Depth		3.00
Analytical Me Tech:	thod: Chloride by EPA 3 SCM	00				Prep Method: % Moisture:	E300P 8.18	
Analyst:	SCM		Date Prep:	09.16.18 18.30		Basis:	Dry Weigh	t
Seq Number:	3063564							
Parameter		Cas Number	Result	RL	Units	Analysis Da	ate Flag	Dil

Chloride

16887-00-6 **58.7** 

5.47

mg/kg 09.17.18 05.58




1

### GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id:SB20-20-110918Lab Sample Id:598984-083		Matrix: Date Collect	Soil ed: 09.11.18 11.47	-	Date Received Sample Depth	1:09.13.18 13.0 : 20	00
Analytical Method: Chloride by El Tech: SCM	PA 300			(	Prep Method: % Moisture:	E300P 7.03	
Analyst: SCM Seq Number: 3063515		Date Prep:	09.17.18 08.30	]	Basis:	Dry Weight	
Parameter	Cas Number	Result	RL	Units	Analysis Da	ate Flag	Dil

16887-00-6 **84.8** 

5.32

mg/kg 09.17.18 09.54





### GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample Id	<b>SB20-30-110918</b> 1: 598984-084		Matrix: Date Collec	Soil ted: 09.11.18 11.50		Date Received Sample Depth		.18 13.00	
Analytical Me	ethod: Chloride by EPA 3	00				Prep Method:	E300F	Р	
Tech:	SCM					% Moisture:	4.22		
Analyst:	SCM		Date Prep:	09.17.18 08.30		Basis:	Dry W	Veight	
Seq Number:	3063515								
Parameter		Cas Number	Result	RL	Units	Analysis D	ate	Flag	Dil

Chloride

114

16887-00-6

5.27

mg/kg 09.17.18 10.25

1





### GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id:SB20-40-110918Lab Sample Id:598984-085		Matrix: Date Collec	Soil cted: 09.11.18 11.52		Date Received Sample Depth		13.00
Analytical Method: Chloride by EPA	. 300				Prep Method:	E300P	
Tech: SCM					% Moisture:	6.85	
Analyst: SCM		Date Prep:	09.17.18 08.30		Basis:	Dry Weig	ht
Seq Number: 3063515							
Parameter	Cas Number	Result	RL	Units	Analysis Da	ate Fla	g Dil
Chloride	16887-00-6	291	5.31	mg/kg	09.17.18 10.	.35	1





### GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample I	<b>SB20-50-110918</b> d: 598984-086		Matrix: Date Colle	Soil cted: 09.11.18 11.57		Date Received:0 Sample Depth: 5		0
Analytical Mo	ethod: Chloride by EPA	. 300				Prep Method: E	300P	
Tech:	SCM					% Moisture: 5	.86	
Analyst:	SCM		Date Prep:	09.17.18 08.30		Basis: D	Pry Weight	
Seq Number:	3063515							
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride		16887-00-6	590	5.26	mg/kg	09.17.18 10.45		1





### GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample Id	<b>SB20-60-110918</b> d: 598984-087		Matrix: Date Collec	Soil cted: 09.11.18 12.00		Date Received Sample Depth:		00
Analytical Me	ethod: Chloride by EPA	300				Prep Method:	E300P	
Tech:	SCM					% Moisture:	5.37	
Analyst:	SCM		Date Prep:	09.17.18 08.30		Basis:	Dry Weight	
Seq Number:	3063515							
Parameter		Cas Number	Result	RL	Units	Analysis Da	te Flag	Dil
Chloride		16887-00-6	1020	26.4	mg/kg	09.17.18 10.5	56	5





### GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample I	<b>SB20-70-110918</b> d: 598984-088		Matrix: Date Colle	Soil cted: 09.11.18 12.02		Date Received: Sample Depth: 7		00
Analytical Mo	ethod: Chloride by EPA	300				Prep Method: I	E300P	
Tech:	SCM					% Moisture:	5.25	
Analyst:	SCM		Date Prep:	09.17.18 08.30		Basis: I	Dry Weight	
Seq Number:	3063515							
Parameter		Cas Number	Result	RL	Units	Analysis Dat	e Flag	Dil
Chloride		16887-00-6	2040	26.3	mg/kg	09.17.18 11.2	7	5





### GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample I	<b>SB20-80-110918</b> d: 598984-089		Matrix: Date Colle	Soil cted: 09.11.18 12.05		Date Received Sample Depth		13.00
Analytical Me	ethod: Chloride by EPA	300				Prep Method:	E300P	
Tech:	SCM					% Moisture:	4.97	
Analyst:	SCM		Date Prep:	09.17.18 08.30		Basis:	Dry Weig	ght
Seq Number:	3063515							
Parameter		Cas Number	Result	RL	Units	Analysis Da	ate Fla	ng Dil
Chloride		16887-00-6	2500	26.4	mg/kg	09.17.18 11.	37	5





### GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id:         SB20-90-110918           Lab Sample Id:         598984-090		Matrix: Date Collec	Soil cted: 09.11.18 12.07		Date Received:09 Sample Depth: 90		0
Analytical Method: Chloride by EPA	A 300				Prep Method: E	300P	
Tech: SCM					% Moisture: 5.	28	
Analyst: SCM		Date Prep:	09.17.18 08.30		Basis: D	ry Weight	
Seq Number: 3063515							
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2390	26.1	mg/kg	09.17.18 11.47		5

16887-00-6





### GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: SB14-4-110918 Lab Sample Id: 598984-091		Matrix: Date Collect	Soil ted: 09.11.18 07.52		Date Received Sample Depth:		00
Analytical Method: Chloride by EPA Tech: SCM Analyst: SCM	300	Date Prep:	09.17.18 08.30		Prep Method: % Moisture: Basis:	E300P 5.14 Dry Weight	
Seq Number: 3063515 Parameter	Cas Number	Result	RL	Units	Analysis Da	nte Flag	Dil

16887-00-6 **578** 

5.22

mg/kg 09.17.18 11.58

1



## **Certificate of Analytical Results 598984**



### GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample I	<b>SB14-10-110918</b> d: 598984-092		Matrix: Date Collec	Soil cted: 09.11.18 07.55		Date Received:09. Sample Depth: 10	13.18 13.00	)
Analytical Mo	ethod: Chloride by EPA	300				Prep Method: E3	00P	
Tech:	SCM					% Moisture: 7.9		
Analyst:	SCM		Date Prep:	09.17.18 08.30		Basis: Dry	y Weight	
Seq Number:	3063515							
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride		16887-00-6	119	5.43	mg/kg	09.17.18 12.08		1



## **Certificate of Analytical Results 598984**



### GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample Id	<b>SB14-20-110918</b> d: 598984-093		Matrix: Date Colle	Soil cted: 09.11.18 07.57		Date Received:0 Sample Depth: 2		00
Analytical Me	ethod: Chloride by EPA	300				Prep Method: E	300P	
Tech:	SCM					% Moisture: 6	.8	
Analyst:	SCM		Date Prep:	09.17.18 08.30		Basis: D	Ory Weight	
Seq Number:	3063515							
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride		16887-00-6	49.5	5.39	mg/kg	09.17.18 12.18		1





### GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: <b>SB14-30-1</b> Lab Sample Id: 598984-09		Matrix: Date Collect	Soil ed: 09.11.18 08.00		Date Received:09 Sample Depth: 30		)
Analytical Method: Chlori Tech: SCM	ide by EPA 300				Prep Method: E3 6 Moisture: 5.2		
Tech: SCM Analyst: SCM		Date Prep:	09.17.18 08.30	,		ry Weight	
Seq Number: 3063515							
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil

Chloride

16887-00-6 **29.4** 

5.23

mg/kg 09.17.18 12.49

1





### GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample Id	<b>SB14-40-110918</b> l: 598984-095		Matrix: Date Collec	Soil cted: 09.11.18 08.02		Date Received Sample Depth		18 13.00	
Analytical Me	thod: Chloride by EPA 3	600				Prep Method:	E300P		
Tech:	SCM					% Moisture:	5.29		
Analyst:	SCM		Date Prep:	09.17.18 08.30		Basis:	Dry W	eight	
Seq Number:	3063515								
Parameter		Cas Number	Result	RL	Units	Analysis D	ate I	Flag	Dil

16887-00-6 **26.4** 

5.27

mg/kg

09.17.18 13.00

1





1

### GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample Id	<b>SB14-50-110918</b> l: 598984-096		Matrix: Date Collec	Soil eted: 09.11.18 08.05		Date Received Sample Depth		3.00
Analytical Me	thod: Chloride by EPA 3	00				Prep Method:	E300P	
Tech:	SCM					% Moisture:	5.34	
Analyst:	SCM		Date Prep:	09.17.18 08.30		Basis:	Dry Weigh	t
Seq Number:	3063515							
Parameter		Cas Number	Result	RL	Units	Analysis D	ate Flag	Dil

Chloride

22.2

16887-00-6

5.27

mg/kg 09.17.18 13.31





1

### GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: <b>SB14-60-11</b> Lab Sample Id: 598984-097		Matrix: Date Collect	Soil ed: 09.11.18 08.07		Date Received: Sample Depth:		0
Analytical Method: Chlorid Tech: SCM Analyst: SCM	de by EPA 300	Date Prep:	09.17.18 08.30		,	E300P 5.55 Dry Weight	
Seq Number: 3063515		2 400 1 100				, ,	
Parameter	Cas Number	Result	RL	Units	Analysis Dat	te Flag	Dil

23.1

16887-00-6

5.24

mg/kg 09.17.18 13.41



Chloride

## **Certificate of Analytical Results 598984**



1

### GHD Services, INC- Midland, Midland, TX CEMC LPU-60

5.36

mg/kg

09.17.18 13.52

Sample Id: Lab Sample Id	<b>SB14-70-110918</b> l: 598984-098		Matrix: Date Colle	Soil cted: 09.11.18 08.10		00		
Analytical Me Tech:	ethod: Chloride by EPA 3 SCM	300				Prep Method: % Moisture:	E300P 5.7	
Analyst:	SCM		Date Prep:	09.17.18 08.30		Basis:	Dry Weight	
Seq Number:	3063515							
Parameter		Cas Number	Result	RL	Units	Analysis Da	ate Flag	Dil

25.2

16887-00-6





### GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: Lab Sample Id:	<b>SB14-80-110918</b> 598984-099		Matrix: Date Collec	Soil eted: 09.11.18 08.12		Date Received Sample Depth	d:09.13.18 13.0 n: 80	00
Analytical Meth	nod: Chloride by EPA 3	00				Prep Method:	E300P	
Tech:	SCM					% Moisture:	6.89	
Analyst: S	SCM		Date Prep:	09.17.18 08.30		Basis:	Dry Weight	
Seq Number: 3	3063515							
Parameter		Cas Number	Result	RL	Units	Analysis D	ate Flag	Dil

Chloride

23.3

16887-00-6

5.32

mg/kg 09.17.18 14.02

1





### GHD Services, INC- Midland, Midland, TX CEMC LPU-60

Sample Id: SB Lab Sample Id: 598	<b>14-90-110918</b> 8984-100		Matrix: Date Collec	Soil ted: 09.11.18 08.15		Date Received Sample Depth		13.00
Analytical Method: Tech: SCM Analyst: SCM		00	Date Prep:	09.17.18 08.30		Prep Method: % Moisture: Basis:	E300P 6.99 Dry Weig	ht
	3515		Date Flep.	07.17.10 00.50		Dasis.	Diy weig	,iit
Parameter		Cas Number	Result	RL	Units	Analysis Da	ate Fla	g Dil

21.9

16887-00-6

5.32

mg/kg 09.17.18 14.12

1



## **Flagging Criteria**



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- 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 LimitSDLSample Detection LimitLOD Limit of Detection
- PQL Practical Quantitation Limit MQL Method Quantitation Limit LOQ Limit of Quantitation
- DL Method Detection Limit
- NC Non-Calculable

SMP Clie	ent Sample	BLK	Method Blank	
BKS/LCS	S Blank Spike/Laboratory Control Sample	BKSD/LCSD	Blank Spike Duplicate/Labo	ratory Control Sample Duplicate
MD/SD	Method Duplicate/Sample Duplicate	MS	Matrix Spike	MSD: Matrix Spike Duplicate

- + NELAC certification not offered for this compound.
- \* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation



#### GHD Services, INC- Midland CEMC LPU-60

<b>Analytical Method:</b> Seq Number: MB Sample Id:	<b>Chloride by EPA 3</b> 3063540 7662450-1-BLK	00		Matrix: nple Id:	Solid 7662450-	1-BKS			rep Metho Date Pro D Sample	ep: 09.1		
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Lim	it Units	Analysis Date	Flag
Chloride	<5.00	250	231	92	232	93	90-110	0	20	mg/kg	09.15.18 11:02	
Analytical Method:	Chloride by EPA 3	00						Р	rep Metho	od: E30	0P	
	20(25(0	~~		·	a 11 1			1				

Seq Number:	3063560	Matrix: Solid Date Prep						p: 09.1	6.18			
MB Sample Id:	7662451-1-BLK		LCS Sample Id: 7662451-1-BKS			LCSD Sample Id: 7662451-1-BSD						
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limi	t Units	Analysis Date	Flag
Chloride	< 5.00	250	248	99	248	99	90-110	0	20	mg/kg	09.16.18 19:17	

Analytical Method:	Chloride by EPA 30	00						P	rep Metho	od: E30	OP	
Seq Number:	3063564			Matrix:	Solid				Date Pr	ep: 09.1	6.18	
MB Sample Id:	7662452-1-BLK		LCS Sar	nple Id:	7662452-2	1-BKS		LCS	D Sample	e Id: 7662	2452-1-BSD	
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Lim	it Units	Analysis Date	Flag
Chloride	< 5.00	250	238	95	237	95	90-110	0	20	mg/kg	09.17.18 00:58	

Analytical Method:	Chloride by EPA 3	00						Pı	ep Metho	od: E30	0P	
Seq Number:	3063515			Matrix:	Solid				Date Pre	ep: 09.1	7.18	
MB Sample Id:	7662453-1-BLK		LCS Sar	nple Id:	7662453-	1-BKS		LCS	D Sample	e Id: 7662	2453-1-BSD	
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Lim	it Units	Analysis Date	Flag
Chloride	<4.99	250	256	102	251	100	90-110	2	20	mg/kg	09.17.18 09:33	

Analytical Method:	Chloride by EPA 30	)0				P	rep Method: E	E300P	
Seq Number:	3063502			Matrix:	Solid		Date Prep: 0	9.16.18	
			LCS Sar	nple Id:	7662465-1-BKS				
Parameter		Spike Amount	LCS Result	LCS %Rec		Limits	Unit	s Analysis Date	Flag
Chloride	275	250	275	110		90-110	mg/k	g 09.16.18 20:24	

MS/MSD Percent Recovery Relative Percent Difference LCS/LCSD Recovery Log Difference [D] = 100\*(C-A) / B RPD = 200\* | (C-E) / (C+E) | [D] = 100 \* (C) / [B] Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample A = Parent Result C = MS/LCS Result E = MSD/LCSD Result MS = Matrix Spike B = Spike Added D = MSD/LCSD % Rec Received by OCD: 9/22/2022 6:41:47 AM

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#### GHD Services, INC- Midland CEMC LPU-60

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CEIVIC LFU-0

Analytical Method: Seq Number:	Chloride by EPA 3 3063503	600		Matrix: nple Id:	Solid 7662466-1-BKS	Prep Method: Date Prep:			
Parameter		Spike Amount	LCS Result	LCS %Rec	Limits	U	nits	Analysis Date	Flag
Chloride	273	250	273	109	90-110	m	g/kg	09.17.18 00:36	

Analytical Method:	Chloride by EPA 3	00						Pre	ep Metho	od: E30	0P	
Seq Number:	3063540			Matrix:	Soil				Date Pre	ep: 09.1	5.18	
Parent Sample Id:	598984-001		MS San	nple Id:	598984-00	01 S		MSE	O Sample	Id: 598	984-001 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD I	RPD Limi	t Units	Analysis Date	Flag

Analytical Method:	Chloride by EPA 30	00						P	rep Meth	od: E30	0P	
Seq Number:	3063540			Matrix:	Soil				Date Pr	ep: 09.1	5.18	
Parent Sample Id:	598984-002		MS Sar	nple Id:	598984-00	02 S		MS	D Sample	e Id: 5989	984-002 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Lim	it Units	Analysis Date	Flag
Chloride	25.3	266	262	89	263	89	90-110	0	20	mg/kg	09.15.18 13:58	х

Analytical Method:	Chloride by EPA 30	00						Pı	ep Metho	od: E30	0P	
Seq Number:	3063502			Matrix:	Soil				Date Pre	ep: 09.1	6.18	
Parent Sample Id:	598984-003		MS Sar	nple Id:	598984-00	)3 S		MS	O Sample	e Id: 598	984-003 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Lim	it Units	Analysis Date	Flag
Chloride	15.4	266	289	103	290	103	90-110	0	20	mg/kg	09.16.18 20:46	

Analytical Method:	Chloride by EPA 30	)0						Р	rep Meth	od: E30	0P	
Seq Number:	3063503			Matrix:	Soil				Date Pr	ep: 09.1	6.18	
Parent Sample Id:	598984-023		MS Sar	nple Id:	598984-02	23 S		MS	D Sampl	e Id: 598	984-023 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Lin	it Units	Analysis Date	Flag
Chloride	92.2	441	556	105	557	105	90-110	0	20	mg/kg	09.17.18 00:58	

MS/MSD Percent Recovery Relative Percent Difference LCS/LCSD Recovery Log Difference 
$$\begin{split} & [D] = 100*(C-A) \ / \ B \\ & RPD = 200* \ | \ (C-E) \ / \ (C+E) \ | \\ & [D] = 100*(C) \ / \ [B] \\ & Log \ Diff. = Log(Sample \ Duplicate) \ - \ Log(Original \ Sample) \end{split}$$

LCS = Laboratory Control Sample A = Parent Result C = MS/LCS Result E = MSD/LCSD Result MS = Matrix Spike B = Spike Added D = MSD/LCSD % Rec

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Analytical Method: Chloride by EPA 300

QC Summary 598984

Prep Method: E300P

#### GHD Services, INC- Midland CEMC LPU-60

Seq Number:	3063503				Matrix:		22.0			Date Pr	-		
Parent Sample Id:	598984-033	3		MS Sai	mple Id:	598984-0	33 8					984-033 SD	
Parameter		Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Lim	nit Units	Analysis Date	Flag
Chloride		296	266	564	101	567	102	90-110	1	20	mg/kg	09.17.18 02:42	
Analytical Method:		y EPA 3	00						Pi	rep Meth			
Seq Number: Parent Sample Id:	3063560 598984-043	3			Matrix: mple Id:	Soil 598984-0	43 S		MS	Date Pr D Sample	-	6.18 984-043 SD	
Parameter	570701012	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits		RPD Lim		Analysis Date	Flag
Chloride		116	418	514	95	515	95	90-110	0	20	mg/kg	09.16.18 19:48	
Analytical Method:	Chloride b	v EPA 3	00						Pi	rep Meth	od: E30	0P	
Seq Number:	3063560				Matrix:	Soil				Date Pr		6.18	
Parent Sample Id:	598984-053	3		MS Sai	mple Id:	598984-0	53 S		MS	D Sample	e Id: 598	984-053 SD	
Parameter		Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Lim	nit Units	Analysis Date	Flag
Chloride		23.6	264	256	88	257	88	90-110	0	20	mg/kg	09.16.18 22:13	Х
Analytical Method:	Chloride b	y EPA 3	00						P	rep Meth	od: E30	0P	
Seq Number:	3063564				Matrix:					Date Pr	•	6.18	
Parent Sample Id:	598984-063	3		MS Sai	mple Id:	598984-0	63 S		MS	D Sample	e Id: 598	984-063 SD	
Parameter		Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Lim	nit Units	Analysis Date	Flag
Chloride		271	264	546	104	547	105	90-110	0	20	mg/kg	09.17.18 01:29	
Analytical Method:		y EPA 3	00						P	rep Meth			
Seq Number:	3063564				Matrix:					Date Pr		6.18	
Parent Sample Id:	598984-073	3		MS Sai	mple Id:	598984-0	73 S		MS	D Sample	e Id: 598	984-073 SD	

Parent Sample Id:	598984-073		MS Sar	nple Id:	598984-07	73 S		MS	D Sample	Id: 5989	984-073 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limi	it Units	Analysis Date	Flag
Chloride	291	271	571	103	572	104	90-110	0	20	mg/kg	09.17.18 03:54	

MS/MSD Percent Recovery Relative Percent Difference LCS/LCSD Recovery Log Difference 
$$\begin{split} & [D] = 100*(C-A) \ / \ B \\ & RPD = 200* \ | \ (C-E) \ / \ (C+E) \ | \\ & [D] = 100*(C) \ / \ [B] \\ & Log \ Diff. = Log(Sample \ Duplicate) \ - \ Log(Original \ Sample) \end{split}$$

LCS = Laboratory Control Sample A = Parent Result C = MS/LCS Result E = MSD/LCSD Result MS = Matrix Spike B = Spike Added D = MSD/LCSD % Rec

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#### GHD Services, INC- Midland CEMC LPU-60

Analytical Method: Seq Number: Parent Sample Id: Parameter	3063515 598984-083 Parent Result	00 Spike Amount	MS Sar MS Result	Matrix: nple Id: MS %Rec	598984-08 MSD Result	83 S MSD %Rec	Limits	MS	ep Methe Date Pr D Sample <b>RPD Lim</b>	ep: 09.1 e Id: 5989		Flag
Chloride	84.8	266	351	100	352	100	90-110	0	20	mg/kg	09.17.18 10:04	
<b>Analytical Method:</b> Seq Number: Parent Sample Id: <b>Parameter</b> Chloride	<b>Chloride by EPA 3</b> 3063515 598984-093 <b>Parent</b> <b>Result</b> 49.5	00 Spike Amount 269		Matrix: nple Id: <b>MS</b> %Rec 96	Soil 598984-09 <b>MSD</b> Result 307	93 S MSD %Rec 96	<b>Limits</b> 90-110	MS	rep Methe Date Pr D Sample <b>RPD Lim</b> 20	ep: 09.1 e Id: 5989		Flag
Analytical Method: Seq Number: Parameter Percent Moisture	<b>Percent Moisture</b> 3063183			Matrix: nple Id:	Solid 3063183-	1-BLK				Units %	Analysis Date 09.13.18 18:30	Flag
Analytical Method: Seq Number: Parameter Percent Moisture	<b>Percent Moisture</b> 3063186			Matrix: nple Id:	Solid 3063186-	1-BLK				Units %	Analysis Date 09.13.18 18:30	Flag
Analytical Method: Seq Number: Parameter Percent Moisture	<b>Percent Moisture</b> 3063242			Matrix: nple Id:	Solid 3063242-	I-BLK				Units %	Analysis Date 09.14.18 12:30	Flag

MS/MSD Percent Recovery Relative Percent Difference LCS/LCSD Recovery Log Difference [D] = 100\*(C-A) / B RPD = 200\* | (C-E) / (C+E) | [D] = 100 \* (C) / [B] Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample A = Parent Result C = MS/LCS Result E = MSD/LCSD Result MS = Matrix Spike B = Spike Added D = MSD/LCSD % Rec

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#### **GHD Services, INC- Midland** CEMC LPU-60

Analytical Method: Seq Number: Parameter Percent Moisture	<b>Percent Moisture</b> 3063244	Matrix: MB Sample Id: MB Result <	Solid 3063244-1-BLK			Units %	<b>Analysis</b> <b>Date</b> 09.14.18 12:30	Flag
Analytical Method: Seq Number:	<b>Percent Moisture</b> 3063245	Matrix: MB Sample Id:	Solid 3063245-1-BLK					
Parameter		MB				Units	Analysis	Flag
Percent Moisture		Result <				%	<b>Date</b> 09.14.18 12:30	
<b>Analytical Method:</b> Seq Number: Parent Sample Id:	<b>Percent Moisture</b> 3063183 598984-001 <b>Parent</b>	Matrix: MD Sample Id: <b>MD</b>		% <b>RPD</b>	RPD Limit	Units	Analysis	
Parameter	Result	Result		70 <b>K</b> F <i>D</i>	KFD Linin	Units	Date	Flag
Percent Moisture	19.8	19.8		0	20	%	09.13.18 18:30	
<b>Analytical Method:</b> Seq Number: Parent Sample Id:	<b>Percent Moisture</b> 3063183 598984-011	Matrix: MD Sample Id:						
·	3063183 598984-011 <b>Parent</b>	MD Sample Id: <b>MD</b>		%RPD	RPD Limit	Units	Analysis	Flag
Seq Number: Parent Sample Id:	3063183 598984-011	MD Sample Id:		<b>%RPD</b> 3	<b>RPD Limit</b> 20	Units %	<b>Analysis</b> <b>Date</b> 09.13.18 18:30	Flag
Seq Number: Parent Sample Id: <b>Parameter</b>	3063183 598984-011 <b>Parent</b> <b>Result</b> 18.9	MD Sample Id: MD Result	598984-011 D Soil				Date	Flag
Seq Number: Parent Sample Id: Parameter Percent Moisture Analytical Method: Seq Number:	3063183 598984-011 <b>Parent</b> <b>Result</b> 18.9 <b>Percent Moisture</b> 3063186	MD Sample Id: MD Result 18.4 Matrix:	598984-011 D Soil	3		%	Date	Flag Flag

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

[D] = 100\*(C-A) / B $\begin{aligned} \text{RPD} &= 200^* \mid (\text{C-E}) / (\text{C+E}) \mid \\ \text{[D]} &= 100^* (\text{C}) / \text{[B]} \end{aligned}$ Log Diff. = Log(Sample Duplicate) - Log(Original Sample) LCS = Laboratory Control SampleA = Parent Result C = MS/LCS Result E = MSD/LCSD Result

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

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#### GHD Services, INC- Midland CEMC LPU-60

Analytical Method: Seq Number: Parent Sample Id: Parameter Percent Moisture	Percent Moisture 3063186 598984-031 Parent Result 6.90	Matrix: MD Sample Id: MD Result 7.23	<b>%RPD</b> 5	<b>RPD Limit</b> 20	Units %	<b>Analysis</b> <b>Date</b> 09.13.18 18:30	Flag
Analytical Method: Seq Number: Parent Sample Id: Parameter	3063242 598984-041 Parent Result	Matrix: MD Sample Id: <b>MD</b> Result		RPD Limit		Analysis Date	Flag
Percent Moisture Analytical Method: Seq Number: Parent Sample Id: Parameter Percent Moisture	5.54 <b>Percent Moisture</b> 3063242 598984-051 <b>Parent</b> <b>Result</b> 4.31	5.39 Matrix: MD Sample Id: MD Result 4.24	3 <b>%RPD</b> 2	20 RPD Limit 20	% Units %	09.14.18 12:30 Analysis Date 09.14.18 12:30	Flag
<b>Analytical Method:</b> Seq Number: Parent Sample Id: <b>Parameter</b> Percent Moisture	Percent Moisture 3063244 598984-061 Parent Result 4.29	Matrix: MD Sample Id: <b>MD</b> Result 4.17	<b>%RPD</b> 3	<b>RPD Limit</b> 20	Units %	Analysis Date 09.14.18 12:30	Flag
Analytical Method: Seq Number: Parent Sample Id: Parameter Percent Moisture	Percent Moisture 3063244 598984-071 Parent Result 3.83	Matrix: MD Sample Id: <b>MD</b> Result 3.78	%RPD	RPD Limit	Units	Analysis Date	Flag

MS/MSD Percent Recovery Relative Percent Difference LCS/LCSD Recovery Log Difference [D] = 100\*(C-A) / B RPD = 200\* | (C-E) / (C+E) | [D] = 100 \* (C) / [B] Log Diff. = Log(Sample Duplicate) - Log(Original Sample) LCS = Laboratory Control Sample A = Parent Result C = MS/LCS Result E = MSD/LCSD Result MS = Matrix Spike B = Spike Added D = MSD/LCSD % Rec

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#### GHD Services, INC- Midland CEMC LPU-60

Analytical Method:	Percent Moisture							
Seq Number:	3063245	Matrix:	Soil					
Parent Sample Id:	598984-081	MD Sample Id:	598984-081 D					
Parameter	Parent Result	MD Result		%RPD	RPD Limit	Units	Analysis Date	Flag

Analytical Method:	Percent Moisture							
Seq Number:	3063245	Matrix:	Soil					
Parent Sample Id:	598984-091	MD Sample Id:	598984-091 D					
Parameter	Parent Result	MD Result		%RPD	RPD Lim	t Units	Analysis Date	Flag

MS/MSD Percent Recovery Relative Percent Difference LCS/LCSD Recovery Log Difference [D] = 100\*(C-A) / B RPD = 200\* | (C-E) / (C+E) | [D] = 100 \* (C) / [B] Log Diff. = Log(Sample Duplicate) - Log(Original Sample) LCS = Laboratory Control Sample A = Parent Result C = MS/LCS Result E = MSD/LCSD Result MS = Matrix Spike B = Spike Added D = MSD/LCSD % Rec

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	Dallas Texas (214-902-0300)									I	lorcro	ss, G	ieorgia	( <b>7</b> 70	-449-	8800)			Tamp	oa, Florid	la (813-	620-2000)	
-	Service Center - San Antonio, Texas (210-5	09-3334)		ž	www.xenco.c	om				2	(enco Q	uote #				Xe	inco Job	#	5	190	192	-	
													Anal	/tical	Inform	nation			Q	-U		Matrix Code	s
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-	Company Address:		Project Locatio			017-2010	-001															S = Soil/Sed/S GW =Ground	
	135 S Loop 250 W, Midland, TX 79703				Lovington	, NM																DW = Drinking	g Water
	mail:	Phone No:	Invoice To:	Cenergy Pa																		P = Product SW = Surface	water
	william.foord@ghd.com Christopher.Knight@ghd.com	713-734-3090 512-506-8803		Chevron En 1400 Smith					77002	.												SL = Sludge OW =Ocean/S	Sea Water
F	Project Contact: Scott Foord		PO Number																			W = Wipe	va viato
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	No. Field ID / Point of Collection	,	Somecaon			Number	1	Serveo	Sources	1	ę	% Moisture											
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Ļ	1 MW2-4-080918		9/8/18 0		1	.													_				
1	2 MW2-10-080918	10	9/8/18 0	706 5	1					$\mathbf{N}$		$\overline{\mathbf{N}}$											
	3 MW2-20-080918	20	9/8/18 0	707 S	1																		
	4 MW2-30-080918	30	9/8/18 0	710 5	1						~	1											
	5 MW2-40-080918	40	9/8/18 0	715 5	ĩ						1												
	6 MW2-50-080918	50	918/18 C	725 S	Î						No.												
	7 MW2-60-080918	60	9/8/18 0	740 S	1					1	V												
L	8 MW2-70-080918	70	9/8/18 0	745 S	l l						1												
	1 MW2-80-080918	80	1/8/18 07	750 S	1													Τ					
	10 MW2-90-080918	40	1/8/18 0	755 S	1																		
J	Turnaround Time ( Business days)			A STREET AND A ST	Data Deliverab	le informati	on								N	otes:				<b>`</b>			
AM	Same Day TAT	5 Day TAT		Level II Sto	I QC		Le	vel IV (	<sup>s</sup> uli Dat	a Pkg /	raw da	ta)											
:47	Next Day EMERGENCY	]7 Day TAT		Level III St	d QC+ Form	• [	т [	RP Lev	el IV				•										
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	3 Day EMERGENCY		Γ	TRRP Che	cklist									$\uparrow$	×								
9/22/2022	TAT Starts Day received by Lab, if re	eceived by 5:00 pm SAMPLE CUSTODY MUST BE		BELOW FACU TH	F 0.41101 F 0.0		005000							F	ED-E	x / UP	S: Trac	king #	77	31 18	32c	> 7015	
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cei	lotice: Signature of this document and relinquishment of san	nples constitutes a valid purchase	order from client	t company to XENCO	O Laboratories	and its affilia	ites, sub	contracto	rs and as	signs XI	ENCO's	standa	rd terms	and c	ondition	ns of se	rvice uni	ess pre	viously n	egiotiated u	inder a fu	y executed client con	itract.
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# Setting the Standard since 1990

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|            | Depth<br>4<br>12<br>20<br>30<br>40<br>50<br>40<br>50<br>50<br>50<br>50<br>50<br>50<br>50<br>50<br>50<br>5 | Project Lo<br>3090<br>3090<br>PO Numbe<br>Collection<br>Sample<br>Depth<br>Date<br>U<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20 | Project Location:           3090         Invoice To:         Certe           3803         PO Number:         1400           PO Number:         PO Number:         1400           Sample         Date         Time           U         9/11/19         752           Q         0757         0757           Q         0757         0757           Q         0800         0800           4O         0802         0757           Q         0800         0800           4O         0805         0805           QO         0810         0810           SO         0810         0812           QO         0812         0815           U         Lev         Lev           Doty MUST BE DOCUMENTED BELOW EX         Received           Date Time:         Received           Date Time:         Received | CEMC           Project Location:           3090           Invoice To:         Cenergy Pachevron En 1400 Smith           PO Number:           Collection           Sample         Date           Depth         Date           Y         9/11/19         7/52           20         0757           30         0800           10         0757           20         0757           30         0800           40         9/10/19           20         0757           20         0757           30         0800           40         0802           20         0757           30         0805           20         0767           30         0805           40         0812           50         0812           90         0813           10         12           11         0812           12         0813           13         12 | CEMCLPU-60           Project Location:         Lovi           Lovi           Sogo           Number To:           Cenergy Partners c           Chevron Enviromer           1400 Smith Street,           PO Number:         # of           Depth           Date           Time         Matrix           bottles:         # of           UP 9/11/19         0752           UP 9/11/19         0757           UP 9/10         1           QO         0707           QO         0707           QO         0707           QO         0810           QO         0812           UP 0815         L           Data Dell         Data Dell           Data Dell         Data Dell           Dotto UNENTED BEL | CEMCLPU-60/073           Project Location:         Lovington,           3090         Invoice To:         Cenergy Partners c/o Ja           3090         Chevron Environmental M         1400 Smith Street, Offic           PO Number:         PO Number:         Imme           Collection         # of         P           V         9/11/19         D752         1           12         10755         1         Imme           20         0757         1         Imme           30         0800      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 Lovington, NM           Invoice To:         Cenergy Partners c/o Jason Michaelson<br/>Chevron Enviromental Management Compare<br/>1400 Smith Street, Office 07084 Houston, To           PO Number:         Number of pressen           Sample         Date         Time         Matrix bottles         Sign of a strength for the street, Office 07084 Houston, To           Sample         Date         Time         Matrix bottles         Sign of a strength for the street, Office 07084 Houston, To           Sample         Date         Time         Matrix bottles         Sign of a street, Office 07084 Houston, To           Up of Number:         Time         Matrix bottles         Sign of a street, Office 07084 Houston, To           Sample         Date         Time         Matrix bottles         Sign of a street, Office 07084 Houston, To           100         Date         Time         Matrix bottles         Sign of a street, Office 07084 Houston, To           200         OSDS         1         Up of street, OSD         1         Up of street, OSD           300         OSOS         1         Up of street, OSD         1         Up of street, OSD         1           Date Number of pressen, I     <!--</td--><td>CEMCLPU-60/073817-2018-001           Project Location:         Lovington, NM           Invoice To:         Cenergy Partners c/o Jason Michaelson<br/>Chevron Enviromental Management Company<br/>1400 Smith Street, Office 07084 Houston, Texas 7           PO Number:         Number of preserved both<br/>Sample         Number of preserved both<br/>Sample         Number of preserved both<br/>Sample           Depth         Date         Time         Matrix         both Street, Office 07084         Street, Office 07084           10         Date         Time         Matrix         both Street, Office 07084         Street, Office 07084           20         O757         L         Street, Office 07084         Street, Office 07084         Street, Office 07084           10         O757         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    I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I<td>CEMCLPU-60/073817-2018-001           Project Location:         Lovington, NM           Invoice To:         Cenergy Partners c/o Jason Michaelson<br/>Chevron Enviromental Management Company<br/>1400 Smith Street, Office 07084 Houston, Texas 77002           PO Number:         Number of preserved pottles           Collection         Number of preserved pottles           Sample         Date         Time         Matrix         bottles         Time         Matrix         Date         Time         Matrix         bottles         Time         Matrix         Date         Time         Matrix         bottles         Time         Time         Matrix         Date         Time         Time         Matrix         Date         Time         Time</td><td>CEMCLPU-60/073817-2018-001           Project Location:         Lovington, NM           Involce Te:         Cenergy Partners c/o Jason Michaelson<br/>Chevron Environmental Management Company<br/>1400 Smith Street, Office 07084 Houston, Texas 77002         PO           PO Number:         PO Number of preserved bottles         0000<br/>0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0</td><td>CEMCLPU-60/073817-2018-001           Project Location:         Lovingtion, NM           Involce To:         Cenergy Partners do Jason Michaelson<br/>Chevron Enviromental Management Company<br/>1400 Smith Street, Office
07084 Houston, Texas 77002           PO Number:         Number of preserved bottles         op<br/>201000         op<br/>2010000         op<br/>201000         op<br/>2010000         op<br/>2010000         op<br/>20100000         op<br/>201000000         op<br/>20100000000         op<br/>20100000000000000000000000000000000000</td><td>CEMCLPU-60/073817-2018-001           Project Location:         Lovington, NM           1000c To:         Cenergy Partners c/o Jason Michaelson<br/>Chevron Enviromental Management Company<br/>1400 Smith Street, Office 07084 Houston, Texas 77002         0           PO Number:         Number of preserved bottles         000<br/>90         0           Sample         Date         Time         Matrix         50         0         3         3         3         0         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         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3         1         1         1         1         1           1/2         0/75/2         3         1         1         1         1         1         1           1/2         0/75/2         1         1         1         1         1         1         1           1/2         0/75/2         1         1         1         1         1         1         1           1/2         0/75/2         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1</td><td>CEMCLPU-60/073817-2018-001           Project Location:         Lovington, NM           10000         Involce To:         Cenergy Partners c/o Jason Michaelson<br/>Chevron Environmental Management Company<br/>1400 Smith Street, Office 07084 Houston, Texas 77002         0           PO Number:         Number of preserved bothes         0         0           Sample         Date         Time         Matrix         bottos         0           Sample         Date         Time         Matrix         bottos         0         0           12         O752         1         0         1         1         1         1           20         O757         1         0         0         0         0         0           20         O757         1         0         0         0         0         0         0           20         O757         1         0         0         0         0         0         0         0         0           20         O757         1         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0</td><td>CEMCLPU-60/073817-2018-001           Project Location:         Lovington, NM           10000         Involce To:         Cenergy Partners c/o Jason Michaelson<br/>Chevron Environmental Management Company<br/>1400 Smith Street, Office 07084 Houston, Texas 77002         0           PO Number:         0000         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.</td><td>CEMCLPU-60/073817-2018-001           Project Location:         Lovington, NM           Involce To:         Cenergy Partners c/o Jason Michaelson<br/>Chevron Environmental Management Company<br/>1400 Smith Street, Office 07/044 Houston, Texas 77002         9           PO Number:         PO Number:         9           Collection         Number of preserved bottles         9           Sample         Date         Time         Matrix         5           Depth         Date         Time         Matrix         5         9         9           1/0         0757         1         0         1         1         0         0           2/0         0757         1         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0</td><td>CEMCLPU-60/073817-2018-001           Project Location:         Lovington, NM           1000         Invoite To:         Contergy Partners (J) Jason Michaelson<br/>Chevron Environment Management Company<br/>1400 Smith Street, Office 07084 Houston, Texas 77002         0           PO Number:         PO Number:         0         0           PO Number:         Sample         Number of preserved bottles         0           Sample         Date         Time         Matrix Inotes         0         0           12         0.752         L         1         1         1         1         1           12         0.755         L         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1</td><td>CEMCLPU-80/073817-2018-001           Project Location:         Lovington, NM           10006 70:         Cenergy Patters: 0/ Jaco Michaelson           000         Chevron Environmental Management Company           1400 Smith Street, Office 07084 Houston, Texas 77022           PO Number:           001           002           903           1400 Smith Street, Office 07084 Houston, Texas 77022           PO Number:           004           005           1400 Smith Street, Office 07084 Houston, Texas 77022           PO Number:           005           006           907           10           112         07557           12         07557           13         14           12         07557           14         14           12         0757           14         14           15         0700           14         14           15         0707           14         14           15         14           15         14           16         14           170         0707           16</td><td>CEMCLPU-GV 078817-2018-001           Involve Te:         Compton, NM           9000         Throw Exercises of company<br/>1400 Smith Street, Office 07084 Houston, Texas 77002         9           PO Number:         Number of preserved softles         9           9000         Time         Martine street, Office 07084 Houston, Texas 77002         9           PO Number:         Number of preserved softles         9         9         9           9000         Time         Martine street, Office 07084 Houston, Texas 77002         9         9         9           9000         Time         Martine street, Office 07084 Houston, Texas 77002         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9</td></td></td> | CEMCLPU-60/073817-2018-001           Project Location:         Lovington, NM           Invoice To:         Cenergy Partners c/o Jason Michaelson<br>Chevron Enviromental Management Compare<br>1400 Smith Street, Office 07084 Houston, To           PO Number:         Number of pressen           Sample         Date         Time         Matrix bottles         Sign of a strength for the street,
Office 07084 Houston, To           Sample         Date         Time         Matrix bottles         Sign of a strength for the street, Office 07084 Houston, To           Sample         Date         Time         Matrix bottles         Sign of a street, Office 07084 Houston, To           Up of Number:         Time         Matrix bottles         Sign of a street, Office 07084 Houston, To           Sample         Date         Time         Matrix bottles         Sign of a street, Office 07084 Houston, To           100         Date         Time         Matrix bottles         Sign of a street, Office 07084 Houston, To           200         OSDS         1         Up of street, OSD         1         Up of street, OSD           300         OSOS         1         Up of street, OSD         1         Up of street, OSD         1           Date Number of pressen, I </td <td>CEMCLPU-60/073817-2018-001           Project Location:         Lovington, NM           Invoice To:         Cenergy Partners c/o Jason Michaelson<br/>Chevron Enviromental Management Company<br/>1400 Smith Street, Office 07084 Houston, Texas 7           PO Number:         Number of preserved both<br/>Sample         Number of preserved both<br/>Sample         Number of preserved both<br/>Sample           Depth         Date         Time         Matrix         both Street, Office 07084         Street, Office 07084           10         Date         Time         Matrix         both Street, Office 07084         Street, Office 07084           20         O757         L         Street, Office 07084         Street, Office 07084         Street, Office 07084           10         O757         L         Street, Office 07084         Street, Office 07084         Street, Office 07084           20         O757         L         Street, Office 07084         Street, Office 07084         Street, Office 07084         Street, Office 07084           20         O757         L         Street, Office 07084         Street, Office 07084         Street, Office 07084           20         O805         L         Street, Office 07084         Street, Office 07084         Street, Office 07084         Street, Office 07084           20</td> <td>CEMCLPU-60/ 073817-2018-001           Project Location:         Lovington, NM           Some Cenergy Partners c/o Jason Michaelson<br/>Chevron Environmental Management Company<br/>1400 Smith Street, Office 07084 Houston, Texas 77002           PO Number:         Number of preserved bottles           Sample         Number of preserved bottles           Sample         Date         Time         Matrix bottles           Y         9/11/19         0752         S         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I<td>CEMCLPU-60/073817-2018-001           Project Location:         Lovington, NM           Invoice To:         Cenergy Partners c/o Jason Michaelson<br/>Chevron Enviromental Management Company<br/>1400 Smith Street, Office 07084 Houston, Texas 77002           PO Number:         Number of preserved pottles           Collection         Number of preserved pottles           Sample         Date         Time         Matrix         bottles         Time         Matrix         Date         Time         Matrix         bottles         Time         Matrix         Date         Time         Matrix         bottles         Time         Time         Matrix         Date         Time         Time         Matrix         Date         Time         Time</td><td>CEMCLPU-60/073817-2018-001           Project Location:         Lovington, NM           Involce Te:         Cenergy Partners c/o Jason Michaelson<br/>Chevron Environmental Management Company<br/>1400 Smith Street, Office 07084 Houston, Texas 77002         PO           PO Number:         PO Number of preserved bottles         0000<br/>0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0</td><td>CEMCLPU-60/073817-2018-001           Project Location:         Lovingtion, NM           Involce To:         Cenergy Partners do Jason Michaelson<br/>Chevron Enviromental Management Company<br/>1400 Smith Street, Office 07084 Houston, Texas 77002           PO Number:         Number of preserved bottles         op<br/>201000         op<br/>2010000         op<br/>201000         op<br/>2010000         op<br/>2010000         op<br/>20100000         op<br/>201000000         op<br/>20100000000         op<br/>20100000000000000000000000000000000000</td><td>CEMCLPU-60/073817-2018-001           Project Location:         Lovington, NM           1000c To:         Cenergy Partners c/o Jason Michaelson<br/>Chevron Enviromental Management Company<br/>1400 Smith Street, Office 07084 Houston, Texas 77002         0           PO Number:         Number of preserved bottles         000<br/>90         0           Sample         Date         Time         Matrix         50         0         3         3         3         0         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90</td><td>CEMCLPU-60/ 073817-2018-001           Project Location:         Lovington, NM           3090         Invoice To:         Cenergy Partners <i>Cio</i> Jason Michaelson<br/>Chevron Environmental Management Company<br/>1400 Smith Street, Office 07084 Houston, Texas 77002         9           PO Number:         9         9         9         9           Sample         Date         Time         Matrix         9         9         9           V         9/11/10/10/20732         3         1         1         1         1         1           1/2         0/75/2         3         1         1         1         1         1         1           1/2         0/75/2         1         1         1         1         1         1         1           1/2         0/75/2         1         1         1         1         1         1         1           1/2         0/75/2         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1</td><td>CEMCLPU-60/073817-2018-001           Project Location:         Lovington, NM           10000         Involce To:         Cenergy Partners c/o Jason Michaelson<br/>Chevron Environmental Management Company<br/>1400 Smith Street, Office 07084 Houston, Texas 77002         0           PO Number:         Number of preserved bothes         0         0           Sample         Date         Time         Matrix         bottos         0           Sample         Date         Time         Matrix         bottos         0         0           12         O752         1         0         1         1         1         1           20         O757         1         0         0         0         0         0           20         O757         1         0         0         0         0         0         0           20         O757         1         0         0         0         0         0         0         0         0           20         O757         1         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0</td><td>CEMCLPU-60/073817-2018-001           Project Location:         Lovington, NM           10000         Involce To:         Cenergy Partners c/o Jason Michaelson<br/>Chevron Environmental Management Company<br/>1400 Smith Street, Office 07084 Houston, Texas 77002         0           PO Number:         0000         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.</td><td>CEMCLPU-60/073817-2018-001           Project Location:         Lovington, NM           Involce To:         Cenergy Partners c/o Jason Michaelson<br/>Chevron Environmental Management Company<br/>1400 Smith Street, Office
07/044 Houston, Texas 77002         9           PO Number:         PO Number:         9           Collection         Number of preserved bottles         9           Sample         Date         Time         Matrix         5           Depth         Date         Time         Matrix         5         9         9           1/0         0757         1         0         1         1         0         0           2/0         0757         1         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0</td><td>CEMCLPU-60/073817-2018-001           Project Location:         Lovington, NM           1000         Invoite To:         Contergy Partners (J) Jason Michaelson<br/>Chevron Environment Management Company<br/>1400 Smith Street, Office 07084 Houston, Texas 77002         0           PO Number:         PO Number:         0         0           PO Number:         Sample         Number of preserved bottles         0           Sample         Date         Time         Matrix Inotes         0         0           12         0.752         L         1         1         1         1         1           12         0.755         L         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1</td><td>CEMCLPU-80/073817-2018-001           Project Location:         Lovington, NM           10006 70:         Cenergy Patters: 0/ Jaco Michaelson           000         Chevron Environmental Management Company           1400 Smith Street, Office 07084 Houston, Texas 77022           PO Number:           001           002           903           1400 Smith Street, Office 07084 Houston, Texas 77022           PO Number:           004           005           1400 Smith Street, Office 07084 Houston, Texas 77022           PO Number:           005           006           907           10           112         07557           12         07557           13         14           12         07557           14         14           12         0757           14         14           15         0700           14         14           15         0707           14         14           15         14           15         14           16         14           170         0707           16</td><td>CEMCLPU-GV 078817-2018-001           Involve Te:         Compton, NM           9000         Throw Exercises of company<br/>1400 Smith Street, Office 07084 Houston, Texas 77002         9           PO Number:         Number of preserved softles         9           9000         Time         Martine street, Office 07084 Houston, Texas 77002         9           PO Number:         Number of preserved softles         9         9         9           9000         Time         Martine street, Office 07084 Houston, Texas 77002         9         9         9           9000         Time         Martine street, Office 07084 Houston, Texas 77002         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9</td></td> | CEMCLPU-60/073817-2018-001           Project Location:         Lovington, NM           Invoice To:         Cenergy Partners c/o Jason Michaelson<br>Chevron Enviromental Management Company<br>1400 Smith Street, Office 07084 Houston, Texas 7           PO Number:         Number of preserved both<br>Sample         Number of preserved both<br>Sample         Number of preserved both<br>Sample           Depth         Date         Time         Matrix         both Street, Office 07084         Street, Office 07084           10         Date         Time         Matrix         both Street, Office 07084         Street, Office 07084           20         O757         L         Street, Office 07084         Street, Office 07084         Street, Office 07084           10         O757         L         Street, Office 07084         Street, Office 07084         Street, Office 07084           20         O757         L         Street, Office 07084         Street, Office 07084         Street, Office 07084         Street, Office 07084           20         O757         L         Street, Office 07084         Street, Office 07084         Street, Office 07084           20         O805         L         Street, Office 07084         Street, Office 07084         Street, Office 07084         Street, Office 07084           20 | CEMCLPU-60/ 073817-2018-001           Project Location:         Lovington, NM           Some Cenergy Partners c/o Jason Michaelson<br>Chevron Environmental Management Company<br>1400 Smith Street, Office 07084 Houston, Texas 77002           PO Number:         Number of preserved bottles           Sample         Number of preserved bottles           Sample         Date         Time         Matrix bottles           Y         9/11/19         0752         S         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I <td>CEMCLPU-60/073817-2018-001           Project Location:         Lovington, NM           Invoice To:         Cenergy Partners c/o Jason Michaelson<br/>Chevron Enviromental Management Company<br/>1400 Smith Street, Office 07084 Houston, Texas 77002           PO Number:         Number of preserved pottles           Collection         Number of preserved pottles           Sample         Date         Time         Matrix         bottles         Time         Matrix         Date         Time         Matrix         bottles         Time         Matrix         Date         Time         Matrix         bottles         Time         Time         Matrix         Date         Time         Time         Matrix         Date         Time         Time</td> <td>CEMCLPU-60/073817-2018-001           Project Location:         Lovington, NM           Involce Te:         Cenergy Partners c/o Jason Michaelson<br/>Chevron Environmental Management Company<br/>1400 Smith Street, Office 07084 Houston, Texas 77002         PO           PO Number:         PO Number of preserved bottles         0000<br/>0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0</td> <td>CEMCLPU-60/073817-2018-001           Project Location:         Lovingtion, NM           Involce To:         Cenergy Partners do Jason Michaelson<br/>Chevron Enviromental Management Company<br/>1400 Smith Street, Office 07084 Houston, Texas 77002           PO Number:         Number of preserved bottles         op<br/>201000         op<br/>2010000         op<br/>201000         op<br/>2010000         op<br/>2010000         op<br/>20100000         op<br/>201000000         op<br/>20100000000         op<br/>20100000000000000000000000000000000000</td> <td>CEMCLPU-60/073817-2018-001           Project Location:         Lovington, NM           1000c To:         Cenergy Partners c/o Jason Michaelson<br/>Chevron Enviromental Management Company<br/>1400 Smith Street, Office 07084 Houston, Texas 77002         0           PO Number:         Number of preserved bottles         000<br/>90         0           Sample         Date         Time         Matrix         50         0         3         3         3         0         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90</td> <td>CEMCLPU-60/ 073817-2018-001           Project Location:         Lovington, NM           3090         Invoice To:         Cenergy Partners <i>Cio</i> Jason Michaelson<br/>Chevron Environmental Management Company<br/>1400 Smith Street, Office 07084 Houston, Texas 77002         9           PO Number:         9         9         9         9           Sample         Date         Time         Matrix         9         9         9          
V         9/11/10/10/20732         3         1         1         1         1         1           1/2         0/75/2         3         1         1         1         1         1         1           1/2         0/75/2         1         1         1         1         1         1         1           1/2         0/75/2         1         1         1         1         1         1         1           1/2         0/75/2         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1</td> <td>CEMCLPU-60/073817-2018-001           Project Location:         Lovington, NM           10000         Involce To:         Cenergy Partners c/o Jason Michaelson<br/>Chevron Environmental Management Company<br/>1400 Smith Street, Office 07084 Houston, Texas 77002         0           PO Number:         Number of preserved bothes         0         0           Sample         Date         Time         Matrix         bottos         0           Sample         Date         Time         Matrix         bottos         0         0           12         O752         1         0         1         1         1         1           20         O757         1         0         0         0         0         0           20         O757         1         0         0         0         0         0         0           20         O757         1         0         0         0         0         0         0         0         0           20         O757         1         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0</td> <td>CEMCLPU-60/073817-2018-001           Project Location:         Lovington, NM           10000         Involce To:         Cenergy Partners c/o Jason Michaelson<br/>Chevron Environmental Management Company<br/>1400 Smith Street, Office 07084 Houston, Texas 77002         0           PO Number:         0000         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.</td> <td>CEMCLPU-60/073817-2018-001           Project Location:         Lovington, NM           Involce To:         Cenergy Partners c/o Jason Michaelson<br/>Chevron Environmental Management Company<br/>1400 Smith Street, Office 07/044 Houston, Texas 77002         9           PO Number:         PO Number:         9           Collection         Number of preserved bottles         9           Sample         Date         Time         Matrix         5           Depth         Date         Time         Matrix         5         9         9           1/0         0757         1         0         1         1         0         0           2/0         0757         1         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0</td> <td>CEMCLPU-60/073817-2018-001           Project Location:         Lovington, NM           1000         Invoite To:         Contergy Partners (J) Jason Michaelson<br/>Chevron Environment Management Company<br/>1400 Smith Street, Office 07084 Houston, Texas 77002         0           PO Number:         PO Number:         0         0           PO Number:         Sample         Number of preserved bottles         0           Sample         Date         Time         Matrix Inotes         0         0           12         0.752         L         1         1         1         1         1           12         0.755         L         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1</td> <td>CEMCLPU-80/073817-2018-001           Project Location:         Lovington, NM           10006 70:         Cenergy Patters: 0/ Jaco Michaelson           000         Chevron Environmental Management Company           1400 Smith Street, Office 07084 Houston, Texas 77022           PO Number:           001           002           903           1400 Smith Street, Office 07084 Houston, Texas 77022           PO Number:           004           005           1400 Smith Street, Office 07084 Houston, Texas 77022           PO Number:           005           006           907           10           112         07557           12         07557           13         14           12         07557           14         14           12         0757           14         14           15         0700           14         14           15         0707           14         14           15         14           15         14           16         14           170         0707           16</td> <td>CEMCLPU-GV 078817-2018-001           Involve Te:         Compton, NM           9000         Throw Exercises of company<br/>1400 Smith Street, Office 07084 Houston, Texas 77002         9           PO Number:         Number of preserved softles         9           9000         Time         Martine street, Office 07084 Houston, Texas 77002         9           PO Number:         Number of preserved softles         9         9         9           9000         Time         Martine street, Office 07084 Houston, Texas 77002         9         9         9           9000         Time         Martine street, Office 07084 Houston, Texas 77002         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9</td> | CEMCLPU-60/073817-2018-001           Project Location:         Lovington, NM           Invoice To:         Cenergy Partners c/o Jason Michaelson<br>Chevron Enviromental Management Company<br>1400 Smith Street, Office 07084 Houston, Texas 77002           PO Number:         Number of preserved pottles           Collection         Number of preserved pottles           Sample         Date         Time         Matrix         bottles         Time         Matrix         Date         Time         Matrix         bottles         Time         Matrix         Date         Time         Matrix         bottles         Time         Time         Matrix         Date         Time         Time         Matrix         Date         Time                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | CEMCLPU-60/073817-2018-001           Project Location:         Lovington, NM           Involce Te:         Cenergy Partners c/o Jason Michaelson<br>Chevron Environmental Management Company<br>1400 Smith Street, Office 07084 Houston, Texas 77002         PO           PO Number:         PO Number of preserved bottles         0000<br>0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | CEMCLPU-60/073817-2018-001           Project Location:         Lovingtion, NM           Involce To:         Cenergy Partners do Jason Michaelson<br>Chevron Enviromental Management Company<br>1400 Smith Street, Office 07084 Houston, Texas 77002           PO Number:         Number of preserved bottles         op<br>201000         op<br>2010000         op<br>201000         op<br>2010000         op<br>2010000         op<br>20100000         op<br>201000000         op<br>20100000000         op<br>20100000000000000000000000000000000000 | CEMCLPU-60/073817-2018-001           Project Location:         Lovington, NM           1000c To:         Cenergy Partners c/o Jason Michaelson<br>Chevron Enviromental Management Company<br>1400 Smith Street, Office 07084 Houston, Texas 77002         0           PO Number:         Number of preserved bottles         000<br>90         0           Sample         Date         Time         Matrix         50         0         3         3         3         0         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90         90 | CEMCLPU-60/ 073817-2018-001           Project Location:         Lovington, NM           3090         Invoice To:         Cenergy Partners <i>Cio</i> Jason Michaelson<br>Chevron Environmental Management Company<br>1400 Smith Street, Office 07084 Houston, Texas 77002         9           PO Number:         9         9         9         9           Sample         Date         Time         Matrix         9         9         9           V         9/11/10/10/20732         3         1         1         1         1         1           1/2         0/75/2         3         1         1         1         1         1         1           1/2         0/75/2         1         1         1         1         1         1         1           1/2         0/75/2         1         1         1         1         1         1         1           1/2         0/75/2         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1 | CEMCLPU-60/073817-2018-001           Project Location:         Lovington, NM           10000         Involce To:         Cenergy Partners c/o Jason Michaelson<br>Chevron Environmental Management Company<br>1400 Smith Street, Office 07084 Houston, Texas 77002         0           PO Number:         Number of preserved bothes         0         0           Sample         Date         Time         Matrix         bottos         0           Sample         Date         Time         Matrix         bottos         0         0           12         O752         1         0         1         1         1         1           20         O757         1         0         0         0         0         0           20         O757         1         0         0         0         0         0         0           20         O757         1         0         0         0         0         0         0         0         0           20         O757         1         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0 | CEMCLPU-60/073817-2018-001           Project Location:         Lovington, NM           10000         Involce To:         Cenergy Partners c/o Jason Michaelson<br>Chevron Environmental Management Company<br>1400 Smith Street, Office 07084 Houston, Texas 77002         0           PO Number:         0000         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0.0752         0. | CEMCLPU-60/073817-2018-001           Project Location:         Lovington, NM           Involce To:         Cenergy Partners c/o Jason Michaelson<br>Chevron Environmental Management Company<br>1400 Smith Street, Office 07/044 Houston, Texas 77002         9           PO Number:         PO Number:         9           Collection         Number of preserved bottles         9           Sample         Date         Time         Matrix         5           Depth         Date         Time         Matrix         5         9         9           1/0         0757         1         0         1         1         0         0           2/0         0757         1         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0 | CEMCLPU-60/073817-2018-001           Project Location:         Lovington, NM           1000         Invoite To:         Contergy Partners (J) Jason Michaelson<br>Chevron Environment Management Company<br>1400 Smith Street, Office 07084 Houston, Texas 77002         0           PO Number:         PO Number:         0         0           PO Number:         Sample         Number of preserved bottles         0           Sample         Date         Time         Matrix Inotes         0         0           12         0.752         L         1         1         1         1         1           12         0.755         L         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1 | CEMCLPU-80/073817-2018-001           Project Location:         Lovington, NM           10006 70:         Cenergy Patters: 0/ Jaco Michaelson           000         Chevron Environmental Management Company           1400 Smith Street, Office 07084 Houston, Texas 77022           PO Number:           001           002           903           1400 Smith Street, Office 07084 Houston, Texas 77022           PO Number:           004           005           1400 Smith Street, Office 07084 Houston, Texas 77022           PO Number:           005           006           907           10           112         07557           12         07557           13         14           12         07557           14         14           12         0757           14         14           15         0700           14         14           15         0707           14         14           15         14           15         14           16         14           170         0707           16 | CEMCLPU-GV 078817-2018-001           Involve Te:         Compton, NM           9000         Throw Exercises of company<br>1400 Smith Street, Office 07084 Houston, Texas 77002         9           PO Number:         Number of
preserved softles         9           9000         Time         Martine street, Office 07084 Houston, Texas 77002         9           PO Number:         Number of preserved softles         9         9         9           9000         Time         Martine street, Office 07084 Houston, Texas 77002         9         9         9           9000         Time         Martine street, Office 07084 Houston, Texas 77002         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9         9 |  |

Received by OCD: 9/22/2022 6:41:47 AM

Final 1.000

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**After printing this label**: 1. Use the 'Print' button on this page to print your label to your laser or inkjet printer. 2. Fold the printed page along the horizontal line. 3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number. Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay, non-delivery, misidelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of \$100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is \$1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

Received by OCD: 9/22/2022 6:41:47 AM

Work Order #: 598984



# XENCO Laboratories



### Prelogin/Nonconformance Report- Sample Log-In

Client: GHD Services, INC- Midland Date/ Time Received: 09/13/2018 01:00:24 PM

Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checkl	ist	Comments
#1 *Temperature of cooler(s)?	3.8	
#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:

Katie Lowe

Checklist reviewed by:

Debbie Semmons Debbie Simmons

Date: 09/18/2018

Date: 09/13/2018

Released to Imaging: 3/8/2024 3:23:25 PM



Scott Foord

**Contact:** 

**Project Location:** 

Certificate of Analysis Summary 604310

GHD Services, INC- Midland, Midland, TX



Project Name: CEMC LPU-60

Date Received in Lab:Fri Nov-02-18 11:15 amReport Date:13-NOV-18Project Manager:Debbie Simmons

					~ <b>^</b>				
	Lab Id:	604310-0	100	604310-0	02	604310-0	03		
Analysis Requested	Field Id:	MW-1-W-1	81031	MW-2-W-18	31031	DUP-1-W-18	31031		
Anutysis Requested	Depth:								
	Matrix:	GROUND WATER		GROUND W	ATER	GROUND W.	ATER		
	Sampled:	Oct-31-18 (	09:50	Oct-31-18 0	8:55	Oct-31-18 0	0:00		
Chloride by EPA 300	Extracted:	Nov-07-18	Nov-07-18 11:00		Nov-07-18 11:00		1:00		
	Analyzed:	Nov-07-18	18:42	Nov-07-18 18:52		Nov-07-18 1	9:23		
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL		
Chloride		59.5	2.50	39.2	2.50	59.9	2.50		
TDS by SM2540C	Extracted:								
	Analyzed:	Nov-06-18	Nov-06-18 09:00		Nov-06-18 09:00		9:00		
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL		
Total Dissolved Solids		429	5.00	386	5.00	449	5.00		

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

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

Debbie Semmon

Debbie Simmons Project Manager

# Analytical Report 604310

for GHD Services, INC- Midland

**Project Manager: Scott Foord** 

CEMC LPU-60

073817-2018-001

13-NOV-18

Collected By: Client





1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054) Oklahoma (2017-142)

> Xenco-Dallas (EPA Lab Code: TX01468): Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14) Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18) Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18) Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4) Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757) Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757) Xenco-Atlanta (LELAP Lab ID #04176) Xenco-Tampa: Florida (E87429) Xenco-Lakeland: Florida (E84098)



13-NOV-18

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

Reference: XENCO Report No(s): 604310 CEMC LPU-60 Project Address:

#### 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) 604310. 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. 604310 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,

Debbie Sens

**Debbie Simmons** Project Manager

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994. Certified and approved by numerous States and Agencies. A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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





# Sample Cross Reference 604310



# GHD Services, INC- Midland, Midland, TX

CEMC LPU-60

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-1-W-181031	W	10-31-18 09:50		604310-001
MW-2-W-181031	W	10-31-18 08:55		604310-002
DUP-1-W-181031	W	10-31-18 00:00		604310-003



# CASE NARRATIVE

Client Name: GHD Services, INC- Midland Project Name: CEMC LPU-60

Project ID: 073817-2018-001 Work Order Number(s): 604310

ATORIES

Report Date: *13-NOV-18* Date Received: *11/02/2018* 

#### Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None



# **Certificate of Analytical Results 604310**



## GHD Services, INC- Midland, Midland, TX 0

Sample Id:  MW-1-W-181031    Lab Sample Id:  604310-001		Matrix: Date Colle	Ground Water octed: 10.31.18 09.50	Date Received:11.02.18 11.15			
Analytical Method: Chloride by E	PA 300			I	Prep Method: E30	00P	
Tech: CHE				ç	% Moisture:		
Analyst: CHE		Date Prep:	11.07.18 11.00				
Seq Number: 3069122		•					
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	59.5	2.50	mg/L	11.07.18 18.42		5
Analytical Method: TDS by SM25	540C						
Tech: OJS				ç	% Moisture:		
Analyst: OJS							
Seq Number: 3068878							
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved Solids	1642222	429	5.00	mg/L	11.06.18 09.00		1



# **Certificate of Analytical Results 604310**



# GHD Services, INC- Midland, Midland, TX

CEMC LI	PU-60
---------	-------

Sample Id: MW-2-W-181031		Matrix:	Ground Water	Date Received:11.02.18 11.15				
Lab Sample Id: 604310-002		Date Collec	cted: 10.31.18 08.55					
Analytical Method: Chloride by E	EPA 300			I	Prep Method: E30	)0P		
Tech: CHE				ç	% Moisture:			
Analyst: CHE		Date Prep:	11.07.18 11.00					
Seq Number: 3069122								
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil	
Chloride	16887-00-6	39.2	2.50	mg/L	11.07.18 18.52		5	
Analytical Method: TDS by SM2	540C							
Tech: OJS				ç	% Moisture:			
Analyst: OJS								
Seq Number: 3068878								
		Result	RL	T	A	Els -	<b>D</b> ''	
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil	



# **Certificate of Analytical Results 604310**



# GHD Services, INC- Midland, Midland, TX

Sample Id:  DUP-1-W-18103    Lab Sample Id:  604310-003	1	Matrix: Date Colle	Ground Water ected: 10.31.18 00.00	1	Date Received:11.02.18 11.15			
Analytical Method: Chloride by	EPA 300			I	Prep Method: E30	)0P		
Tech: CHE				ç	% Moisture:			
Analyst: CHE		Date Prep:	11.07.18 11.00					
Seq Number: 3069122								
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil	
Chloride	16887-00-6	59.9	2.50	mg/L	11.07.18 19.23		5	
Analytical Method: TDS by SM2 Tech: OJS	2540C			ç	% Moisture:			
Analyst: OJS								
Seq Number: 3068878								
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil	
Total Dissolved Solids	1642222	449	5.00	mg/L	11.06.18 09.00		1	



# **Flagging Criteria**



Page 191 of 204

- 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 LimitSDLSample Detection LimitLOD Limit of Detection
- PQL Practical Quantitation Limit MQL Method Quantitation Limit LOQ Limit of Quantitation
- DL Method Detection Limit
- NC Non-Calculable

SMP Clie	ent Sample	BLK	Method Blank	
BKS/LCS	Blank Spike/Laboratory Control Sample	BKSD/LCSD	Blank Spike Duplicate/Labo	ratory Control Sample Duplicate
MD/SD	Method Duplicate/Sample Duplicate	MS	Matrix Spike	MSD: Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

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



QC Summary 604310

#### GHD Services, INC- Midland CEMC LPU-60

Analytical Method:	Chloride by EPA 3	00						Pr	ep Metho	od: E30	0P	
Seq Number:	3069122	Matrix:	Water				Date Pre	ep: 11.0	7.18			
MB Sample Id:	7665651-1-BLK		LCS Sample Id: 7665651-1-BKS LCSD Sample Id					d: 766	l: 7665651-1-BSD			
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Lim	it Units	Analysis Date	Flag
Chloride	< 0.500	25.0	24.3	97	24.3	97	90-110	0	20	mg/L	11.07.18 17:29	

Analytical Method:	Chloride by EPA 30				Pr	ep Metho	d: E30	0P					
Seq Number:	3069122 Matrix:				Matrix: Drinking Water Date Prep:					ep: 11.0	11.07.18		
Parent Sample Id:	604626-001	MS Sar	MS Sample Id: 604626-001 S				MSD Sample Id: 604626-001 SD						
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limi	t Units	Analysis Date	Flag	
Chloride	12.8	25.0	38.5	103	38.5	103	90-110	0	20	mg/L	11.07.18 18:00		

Analytical Method:	Chloride by EPA 30	00						Pı	ep Metho	od: E30	OP	
Seq Number:	3069122 Matr				x: Drinking Water Date Prep:				ep: 11.0	11.08.18		
Parent Sample Id:	604789-001	39-001 MS Sample Id: 604789-001 S					MSD Sample Id: 604789-001 SD					
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limi	it Units	Analysis Date	Flag
Chloride	<0.500	25.0	64.7	259	63.7	255	90-110	2	20	mg/L	11.08.18 11:58	v

Analytical Method:	TDS by SM2540C											
Seq Number:	3068878			Matrix:	Water							
MB Sample Id:	3068878-1-BLK		LCS Sar	nple Id:	3068878-	1-BKS		LCSI	O Sample	Id: 3068	8878-1-BSD	
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD ]	RPD Limi	t Units	Analysis Date	Flag
Total Dissolved Solids	< 5.00	1000	963	96	959	96	80-120	0	10	mg/L	11.06.18 09:00	

Analytical Method:	TDS by SM2540C							
Seq Number:	3068878	Matrix:	Ground Water					
Parent Sample Id:	604307-001	MD Sample Id:	604307-001 D					
Parameter	Parent Result	MD Result	9/0	RPD	RPD Limit	Units	Analysis Date	Flag
Total Dissolved Solids	1080	1190		10	10	mg/L	11.06.18 09:00	

MS/MSD Percent Recovery Relative Percent Difference LCS/LCSD Recovery Log Difference [D] = 100\*(C-A) / B RPD = 200\* | (C-E) / (C+E) | [D] = 100 \* (C) / [B] Log Diff. = Log(Sample Duplicate) - Log(Original Sample) LCS = Laboratory Control Sample A = Parent Result C = MS/LCS Result E = MSD/LCSD Result MS = Matrix Spike B = Spike Added D = MSD/LCSD % Rec

.



# QC Summary 604310

# GHD Services, INC- Midland CEMC LPU-60

Analytical Method:	TDS by SM2540C							
Seq Number:	3068878	Matrix:	Ground Water					
Parent Sample Id:	604310-003	MD Sample Id:	604310-003 D					
Parameter	Parent Result	MD Result		%RPD	RPD Limit	Units	Analysis Date	Flag

MS/MSD Percent Recovery Relative Percent Difference LCS/LCSD Recovery Log Difference [D] = 100\*(C-A) / B RPD = 200\* | (C-E) / (C+E) | [D] = 100 \* (C) / [B] Log Diff. = Log(Sample Duplicate) - Log(Original Sample) LCS = Laboratory Control Sample A = Parent Result C = MS/LCS Result E = MSD/LCSD Result MS = Matrix Spike B = Spike Added D = MSD/LCSD % Rec

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Page 11 of 13

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<u></u>	· · · · · · · · · · · · · · · · · · ·		Hobbs,N		550) Phoenix,A	handaha jai	-355-09	900) Atl	anta,GA	(770-449	-8800) T	ampa,Fl	_ (813-620	)-2000)		<u>www.</u>	xenco	<u>.com</u>	Page	of
Project Manager:	Scott Foord				Bill to: (if differe	nt)	Jason	Micha	elson				_   ¤						omments	
Company Name:	GHD				Company Na	me:					ment Con	npany		-			RP	Browi	nfieldsRRC	Superfund
Address:	2135 S. Loop 2				Address:				· · · ·	Office 07	094			State of	-					P 🗌 Level IV 🗌
City, State ZIP:	Midland, TX. 7				City, State ZI				77002		~		[_	liverable				LIPS1 ADaP1		
Phone:	713-734-3090	or 281-72	5-7477	Email:	William.Foord@g	hd.com	& Christ	topher.Kr	ight@gho	I.com & M	egan.Willis	@ghd.co	m [De		S: EDL		saintataa	ADaP		
Project Name:	CEMC LPU-60	) .	· .	Tu	rn Around		1	r	<u></u>		ANALY		QUEST		<u> </u>	<u></u>			Work C	Order Notes
Project Number:	073817-2018-0	001	••••••••••••••••••••••••••••••••••••••	Routi																
P.O. Number:				Rush																
Sampler's Name:	_ Justr	<u>Aire</u>	<u> </u>	Due I	Date:															
SAMPLE RECI	EIPT Tei	mp Blank:	Yes No.	Wet Ice:	Yes No	5														
emperature (°C):	- F	)	Т	hermometer	<u>s ID</u>	iner														
Received Intact:	(es)		<u> </u>	Ne		Containers														
Cooler Custody Sea Sample Custody Se		9 N/A 9 N/A	A THE REAL PROPERTY OF	ction Factor: I Containers:		5	0													day recevied by t eived by 4:30pm
Sample Ide	ntification	Matrix	Date Sampled	Time Sampled	Depth	Number	Chioride	TDS											Sample	Comments
Mr-I-W.	-18(031	GW	10-7-18	450		1	X	X		1.1										· · · · · · · · · · · · · · · · · · ·
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Total 200.7/	6010 200.8 /	6020:	8R(	CRA 13PP	M Texas 11	Al	Sb A	s Ba	Be B	Cd Ca	Cr Co	Cu Fe	e Pb M	g Mn I	Ao Ni	K Se	e Ag	SiO2	Na Sr TI S	n U V Zn
Circle Method	l(s) and Metal(s	) to be an	alyzed	TCLP / SP	LP 6010: 8F	CRA	Sb	As Ba	Be C	d Cr (	Co Cu	Pb Mn	Mo Ni	Se Ag	TIU			16	31 / 245.1 / 7	470 / 7471 : H
Notice: Signature of this of service. Xenco will b of Xenco. A minimum c	e liable only for the o	ost of samp	les and shall n	ot assume any	responsibility for	any lo	sses or	expense	s incurre	d by the d	lient if su	h losses	are due to	circumsta	inces be	yond th	e contr			-
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Revised Date 051418 Rev. 2018.1

Final 1.000

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Received by OCD: 9/22/2022 6:41:47 AM

Work Order #: 604310



# XENCO Laboratories



## Prelogin/Nonconformance Report- Sample Log-In

Client: GHD Services, INC- Midland Date/ Time Received: 11/02/2018 11:15:00 AM

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	
#2 *Shipping container in good condition?	Yes	
#3 *Samples received on ice?	Yes	
#4 *Custody Seals intact on shipping contain	er/ 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 relinquishe	ed/ received? Yes	
#10 Chain of Custody agrees with sample lal	pels/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 te	est(s)? Yes	
#16 All samples received within hold time?	Yes	
#17 Subcontract of sample(s)?	N/A	
#18 Water VOC samples have zero headspa	ice? N/A	

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

Analyst: BT

PH Device/Lot#: A032690

Checklist completed by:

Katie Lowe

Date: 11/02/2018

Checklist reviewed by:

Debbie Semmons Debbie Simmons

Date: 11/02/2018

# Appendix C 2019 Remediation Work Plan

.



January 18, 2019

Reference No. 073817

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

Dear Ms. Hernandez:

Re: 2019 Remediation Work Plan Lovington Paddock Unit 60 – Produced Water Release (RP-1498) Lea County, New Mexico

# **1. Project Information**

The Site is located in Unit F, Section 1, Township 17 South, Range 36 East, approximately 5 miles southeast of the City of Lovington (COL) in Lea County, New Mexico. Remediation Permit (RP) Number 1498 (RP-1498) was assigned by the New Mexico Oil Conservation Division (NMOCD) District I, Hobbs, New Mexico office.

# 2. NMOCD Closure Requirement Criteria for Soils

#### <u>Soil</u>

Historical subsurface investigation activities were completed in accordance with the Guidelines for Remediation of Leaks, Spills, and Releases Rule 19.15.29 New Mexico Administrative Code (NMAC) from the New Mexico Oil Conservation Division (NMOCD) dated August 13, 1993. The historic site-specific Recommended Remediation Action Levels (RRALs) previously applied to this location by the NMOCD were 10 milligrams per kilogram (mg/kg) for benzene, 50 mg/kg for total BTEX, 100 mg/kg for total TPH, and 600 mg/kg for chloride.

Rule 19.15.29 was revised and reissued on August 14, 2018. The following criteria (below) from Table 1 within NMAC 19.15.29.12 was utilized to determine site-specific screening limits

Minimum depth below any point within the horizontal boundary of the release to ground water less than 10,000 mg/l TDS	Constituent	Limit*
>100 Feet	Chloride**	20,000 mg/kg
	TPH (GRO+DRO+MRO	2,500 mg/kg
	GRO+DRO	1,000 mg/kg
	BTEX	50 mg/kg
	Benzene	10 mg/kg





- \* Numerical limits or natural background level, whichever is greater.
- \*\* This applies to release of produced water or other fluids which may contain chloride.

Localized depth to groundwater was confirmed to be approximately 107 feet below ground surface (bgs) in 2018 based on the information from monitoring well MW-1 as well as MW-2. Additionally, information available from various sources including the Petroleum Recovery Research Center (PRRC) Mapping Portal, currently managed groundwater site(s) data by GHD, and the United States Geological Survey (USGS) Current Water Database for the Nation, concludes:

- a) the depth to groundwater at the Site is greater than 100-feet bgs;
- b) the site is not within 300 feet of any continuously flowing watercourse;
- c) the site is not within 200 feet of any lakebed, sinkhole or playa lake;
- d) the site is not within 300 feet of an occupied permanent residence, school, etc.;
- e) the site is not within 500 feet of a spring or private, domestic fresh water well;
- f) the site is not within 1,000 feet of any fresh water well or spring;
- g) the site is not within incorporated municipal boundaries or within a defined municipal fresh water well field;
- h) the site is not within 300 feet of a wetland;
- i) the site is not within an area overlying a subsurface mine;
- j) the site is not within an unstable area; and
- k) the site is not within a 100-year floodplain.

Consequently, the anticipated site-specific screening limits to be applied to this location by the NMOCD based on the revised Rule are 10 mg/kg for benzene, 50 mg/kg for total BTEX, 2,500 mg/kg for total TPH, and 20,000 mg/kg for chloride.

Per 19.15.29.13, Restoration, Reclamation, and Re-vegetation, the impacted area must be remediated a minimum of 4-feet bgs with non-waste containing, uncontaminated, earthen material with chloride concentrations less than 600 mg/kg. Soil cover must consist of topsoil at a thickness comparable to background topsoil thicknesses, or one foot of suitable earthen material capable of establishing and maintaining vegetation at the site. Reclamation is considered complete when all disturbed areas have established vegetative cover with a life-form ratio of plus or minus 50 percent of pre-remedial levels, and plant cover of a minimum of 70 percent of previous levels, excluding noxious weeds.

Evaluation of the analytical data obtained from soil assessment and delineation activities performed from 2014 through 2018 indicate horizontal and vertical delineation of chloride impacts has been achieved at the Site to support remediation activities (excavation).



#### 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 New Mexico Water Quality Control Commission (NMWQCC) set forth in New Mexico Administrative Code 20.6.2.3103. Standards for chloride and total dissolved solids (TDS) are listed below. Results from recent groundwater samples collected from MW-1 and MW-2 confirm no impact to groundwater above NMWQCC standards.

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

# 3. 2019 Scope of Work

The scope of work for this project in 2019 will involve soil remediation activities inclusive of excavation, sampling, lining the excavation, backfilling, and restoration (re-seeding of off-pad areas) of the impacted area (see Figure 1 – Proposed Excavation Area).

Chloride impacted caliche well pad material and soil will be excavated accompanied by confirmation soil sample analysis. Field screening of soils for chloride will be performed in order to guide excavation activities. Subsequently, the excavation will be lined, backfilled with clean caliche material and soil, graded and contoured to ensure proper surface area drainage, and the soil (off-pad areas) fertilized and reseeded. The following outlines basic project details that will be completed by GHD and GHD subcontractors.

#### Field Program

- Prior to mobilizing excavation equipment to the Site, a New Mexico 811 utility notification will be made at least 48-hours prior to mobilization.
- In addition to the utility locate, data from the geophysical survey conducted prior to 2018 drilling activities will be re-evaluated for the proposed excavation area.
- Following all utility clearance activities, a Chevron Dig Plan will be prepared and approved by Chevron prior to performing any excavation activities.
- Underground utilities in proximity to the proposed excavation area will be day-lighted via hydroexcavation prior to remedial excavation activities.
- GHD anticipates that pipeline operators will not allow excavation within 10 feet of any pipelines, therefore remediation within these areas will be deferred until operations of the pipelines cease.
- Approximately 700 cubic yards (cy) of shallow sub-surface area consisting of caliche well pad materials and off-pad soil areas will be excavated (Figure 1 Proposed Excavation Area). Impacted



soil in the affected area will be excavated until field screening indicates that the soil is below the limit for chloride (600 mg/kg) specified in NMMAC 19.15.29.13 D (1), or until a depth of 4 feet bgs is reached.

- Soils will be field screened for chloride during excavation activities utilizing Hach<sup>®</sup> chloride test strips. Soils with field test results greater than 3,000 mg/kg chloride will be transported to an approved disposal facility. If field screening indicates that soils are below 3,000 mg/kg chloride, it will be segregated into 50-100 cy stockpiles and a 5-point composite sample will be collected and analyzed for chloride by EPA Method 300. Soils with analytical results above 600 mg/kg will be transported to the R360 facility located in Hobbs, New Mexico for disposal. Stockpiled soils with analytical results below 600 mg/kg will be further consolidated on-site for use as backfill.
- Five-point composite confirmation soil samples will be collected from the excavation floor and sidewalls at 200 square foot intervals for analysis of chloride by EPA Method 300. Lateral limits of the excavation will halt once confirmation sample analytical results are 600 mg/kg chloride or less.
- If impacts appear to extend past four feet bgs, the sides of the excavation will be sloped and a 20-mil polyethylene liner will be placed in the bottom of the excavation. Liner seams will be overlapped a minimum of 24 inches. Each liner will be placed without rips or tears.
- The excavation will be backfilled with caliche and soil from an off-site borrow pit to grade.
- The disturbed off-pad area will be fertilized and re-seeded with a Bureau of Land Managementapproved seed mix.

#### **Quality Assurance/ Quality Control**

Confirmation soil sampling will be completed in accordance with our standard Quality Assurance/ Quality Control procedures designed to minimize cross-contamination between samples and to provide reliable laboratory results.

#### Reporting

A report summarizing remediation activities will be submitted. The report will include a Site description, project history, description of field events, a discussion of results, and recommendations (if any).

The report will include:

- A scaled Site plan showing the locations of the excavation and other Site features;
- Tabulation of field screening and laboratory analytical results; and
- Geotagged photographic documentation of field activities.

#### **Vegetation Monitoring**

Following completion of soil remediation activities at the Site, and as required by the New Mexico State Land Office (NMSLO), GHD will conduct vegetation monitoring visits to the Site. The status of vegetative



growth within the remediated area will be documented with photographs and in field notes during each visit. A closure request report will be completed following one year of monitoring for submittal to NMSLO.

# 4. Work Plan Approval Request

GHD is prepared to initiate the scope of work immediately upon approval by the NMOCD. If you have any questions or comments with regards to this work plan, please do not hesitate to contact our Houston office at (713) 734-3090. Your timely response to this correspondence is appreciated.

Sincerely,

GHD

Parizze A. Acel

Paige Hall Project Manager

PH/mss/1

Encl.

Attachment: Figure 1 - Proposed Excavation Map



AM

70'  80'    138  49.40    34-35'  39-40'    465  531    SB-17 09    30'  40'    19.40  20.20	90' 85.90 //11/18 50' 19.20	60' 19.60	70' 20.10	80' 19.40	<u>90'</u> 19.70	明らたり	日本の中に
SB-11  10/24/    '  29-30'  39-4(    530  496    10'  2/    3  433  11	0' 49-5 477 0' 3	7 398 SB-16 60' 4		223	352 )' 70'	80'	90'
17 0' 49-50' 59- 178 11		33 20	00 125		の一方	ALL AND	and the
10' 20' 545 296	30' 102	SB-15 0 40' <8.12	9/11/18 50' 8.20	60' <7.97	70' 9.32	80' 10.60	90' 8.74
		26		3.53			ALC: NOT THE OWNER OF
1. P. 1. 1		NR 14 00/0	9/49	St			-
10' 20' 119 49.50	30' 29.40	SB-14 09/0 40' 26.40	08/18 50' 22.20	60' 23.10	70' 25.20 2		)0' .90
119 49.50	30'	40' 26.40	50'		25.20 2 80' 9		
119 49.50 SE 20' 30'	30' 29.40 3-13 09/08 40'	40' 26.40 3/18 50'	60' 22.20 60' <5.35 Boring Lo Boring Lo Boring Lo Boring Lo Sample T Monitoring Proposed Depth of Total Petr Total Diss	23.10 70' <5.44 LEC ocation (Ma ocation (Oo ocation (20 Trench (Au g Well Loc I Excavatic Sample (ft roleum Hy solved Sol Duplicate	25.20  2    80'  6    <8.94	21 20 22 22 22 22 22 22 22 22 22	2) 2)

Jan 2, 2019

iging: 3/8/2024 3:23:25 PM FIGURE 1

Received by OCD: 9/22/2022 6:41:47 AM





# about GHD

GHD is one of the world's leading professional services companies operating in the global markets of water, energy and resources, environment, property and buildings, and transportation. We provide engineering, environmental, and construction services to private and public sector clients.

Paige Hall paige.hall@ghd.com 713.734.3090

Raaj Patel raaj.patel@ghd.com 713.734.3090

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811 S. First St., Artesia, NM 88210 Phone:(575) 748-1283 Fax:(575) 748-9720

District III

1000 Rio Brazos Rd., Aztec, NM 87410 Phone:(505) 334-6178 Fax:(505) 334-6170

District IV 1220 S. St Francis Dr., Santa Fe, NM 87505 Phone: (505) 476-3470 Fax: (505) 476-3462

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

CONDITIONS

Operator:	OGRID:
CHEVRON U S A INC	4323
6301 Deauville Blvd	Action Number:
Midland, TX 79706	145470
	Action Type:
	[C-141] Release Corrective Action (C-141)

CONDITIONS

Created	Condition	Condition
Ву		Date
nvelez	Remediation plan is approved under the following conditions; 1.Required to include missing site characterization supporting documentation within final remediation closure report. 2. OCD approves the plug and abandonment of MW 1 and MW 2. Please complete per NMOSE requirements and provide documentation within final remediation closure report. 3. Chevron has 90-days (June 6, 2024) to submit its appropriate or final remediation closure report.	3/8/2024

Action 145470