

Robert Speer Portfolio Manager, Upstream Business Unit Remediation Team Chevron Environmental Management Company 1400 Smith St. 07049 Houston, TX 77002 Tel (731) 372-6117 Cell (713) 301-7274 rspeer@chevron.com

October 1, 2015

Kellie Jones Environmental Specialist, District 1 New Mexico Oil Conservation Division 811 South First St. Artesia, NM 88210

Re: Central Vacuum Unit 266 Injection Line Release Soil Assessment and Delineation Activities Report

Dear Ms. Jones:

Please find enclosed for your files copies of the following report for the Central Vacuum Unit 266 Injection Line release project site.

• CVU 266 Injection Line – 2015 Soil Assessment and Delineation Activities Report, Unit E -Section 6 – Township 18 South – Range 35 East, Lea County, NM

This report was prepared by Conestoga-Rovers & Associates (CRA) on behalf of Chevron Environmental Management Company (CEMC) to document assessment activities for a release of 75 bbls of produced water as documented in our January 2011 submittal of form C-141. Soil sampling in the release area indicate that vertical and horizontal delineation of Chlorides have been achieved at the site, and that no further assessment or remediation activities are warranted for this project.

Should you have any questions regarding the content of this report, please do not hesitate to contact me. I look forward to working with you in the future.

Sincerely,

Rob Speer

Environmental Project Manager

State of New Mexico Energy Minerals and Natural Resources

Form C-141 Revised August 8, 2011

Oil Conservation Division 1220 South St. Francis Dr. Santa Ea NIM 97505

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

	Santa I	re, NM 87505			
Rele	ase Notificatio	on and Corrective Actio	n		
		OPERATOR	Initial Report	\boxtimes	Final Report
Name of Company: Chevron (CEMC)		Contact: Rob Speer			
Address: 1400 Smith Street, Houston, Texas 77002		Telephone No. (713) 372-6117			
Facility Name: Central Vacuum Unit No. 266 Facility Type: Injection Vacuum Va Vacuum Vacuum Vac		Facility Type: Injection Well			
Surface Owner: State of New Mexico Mineral Owner: State of New Mexico		API No. 30-025-3	0022		
	LOCATIO	ON OF RELEASE			

Unit Letter S	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
E	6	18S	35 E					Lea

Latitude: <u>32.782766°</u> Longitude: <u>-103.510673°</u>

NATURE	OF RELEASE						
Type of Release: Produced Water/Release to Land	Volume of Release: 75 bbls	Volume Re	ecovered: Zero (0)				
Source of Release: Injection Well	Date and Hour of Occurrence: 01/06/11 and 12:00 Noon	lour of Discovery: nd 12:00 PM					
Was Immediate Notice Given?	If YES, To Whom? Larry Johnson	1					
By Whom? Kim Klahsen	Date and Hour: 03/06/09 and 11:5	58 AM					
Was a Watercourse Reached? If YES, Volume Impacting the Watercourse.							
If a Watercourse was Impacted, Describe Fully.*							
Describe Cause of Problem and Remedial Action Taken.* Visible water on location due to a rupture in the injection line. After excav	vation completed the investigation as	to why line ru	iptured.				
Describe Area Affected and Cleanup Action Taken.*							
Area affected included well pad and down slope lease road to the southeas excavation and repair of ruptured line. Initial sampling activities commenced. Results of soil sampling indicated comprehensive soil assessment was performed to confirm the extents of the	st. The injection line was shut-in and the presence of chloride concentration he soil impacts.	emergency or	e-call was initiated for soils. In response, a				
Results of the additional assessment activities are provided in the attached	l report.						
I hereby certify that the information given above is true and complete to the regulations all operators are required to report and/or file certain release ne public health or the environment. The acceptance of a C-141 report by the should their operations have failed to adequately investigate and remediate or the environment. In addition, NMOCD acceptance of a C-141 report defederal, state, or local laws and/or regulations.	he best of my knowledge and underst otifications and perform corrective ac e NMOCD marked as "Final Report" e contamination that pose a threat to oes not relieve the operator of respon	and that pursu ctions for relea does not relie ground water, sibility for co	ant to NMOCD rules and ases which may endanger we the operator of liability surface water, human health mpliance with any other				
Signature: Rato Sage							
Printed Name: Rob Speer	Approved by Environmental Special	ist:					
Title: Project Manager	Approval Date:	Expiration D	late:				
E-mail Address: rspeer@chevron .com	Conditions of Approval:		Attached				
Date: 7^{-} , 30^{-} Phone: (13) 3/2-011/							

Date: 9-30-15 * Attach Additional Sheets If Necessary



Øãæ



Soil Assessment and Delineation Activities Report

Central Vacuum Unit No. 266 Injection Line Release Unit E, Section 6, Township 18 South, Range 35 East Lovington, New Mexico

Chevron Environmental Management Company

1755 Wittington Place, Suite 500 Dallas Texas 75234 074635 | Report No 3 | September 2Ì Ê2015



Soil Assessment and Delineation Activities Report

Central Vacuum Unit No. 266 Injection Line Release Unit E, Section 6, Township 18 South, Range 35 East Lovington, New Mexico

Chevron Environmental Management Company

Thomas C. Larson Principal, Midland Operations Manager

Jake L. Ferenz Project Manager

1755 Wittington Place Suite 500 Dallas Texas USA 074635 | Report No 3 |September 28, 2015

Table of Contents

1.	Introduction	. 1		
2.	Project Information and Background			
3.	Recommended Remediation Action Limits			
4.	. Drilling and Sampling - 2014			
	4.1 Soil Sampling Analytical Results - 2014	. 2		
5.	Drilling and Sampling - 2015	. 3		
	5.1 Soil Sampling Analytical Results - 2015	. 3		
6.	Conclusions	. 3		

Figure Index

Figure 1	Site Location Map
Figure 2	Site Aerial Map
Figure 3	Site Details and Utilities Map
Figure 4	Site Details and Analytical Results Map

Table Index

Table 1	Soil Analytical Summary – Crain
Table 2	Soil Analytical Summary – 2014
Table 3	Soil Analytical Summary - 2015

Appendices

- Appendix A Original Form C-141
- Appendix B Photograph Log
- Appendix C Soil Boring Logs
- Appendix D Soil Laboratory Analytical Reports

1. Introduction

GHD is pleased to present this Soil Assessment and Delineation Activities Report to Chevron Environmental Management Company (CEMC) for the Central Vacuum Unit No. 266 injection line release location (hereafter referred to as the "Site").

2. Project Information and Background

The Site is located in Unit E, Section 6, Township 18 South, Range 35 East, approximately 0.65miles southwest of Buckeye, New Mexico, in eastern Lea County (Figure 1 and Figure 2).

Chevron submitted an initial C-141 form (Appendix A) to the New Mexico Oil Conservation Division (NMOCD) dated January 10, 2011, describing a release of 75 barrels (bbls) of produced water with zero (0) volume being recovered. The source of the release was recorded to have been a ruptured injection line, and the release was described as follows:

"FS found water running down location. Leak due to rupture in injection line. After excavation is complete.....will investigate cause of rupture."

Crain Environmental (Crain) conducted the initial field assessment activities at the Site in January 2011. Crain's assessment included a site visit, shallow soil sample collection, analytical laboratory analyses and preliminary determinations of impacts to environmental media. GHD met with Ms. Crain on April 21, 2011 to review and transfer the file material for the Site as well as to discuss the history of delineation efforts to date for the Site. A soil analytical summary of Crain's initial sample collection is presented as Table 1.

In 2014, Chevron contracted GHD to perform a comprehensive soil assessment at the Site by implementing a soil boring program. A Site visit was performed on April 8, 2014 by GHD. During the Site visit, boring locations were flagged for utility locating purposes. In addition, the Site was walked to observe Site features; which included oversight of a geophysical site survey by way of Ground Penetrating Radar (GPR) to assess the presence of subsurface utility hazards. Multiple surface and subsurface hazards were identified at the Site. A site details and utility map is presented as Figure 3. On April 14, 2014, GHD advanced eleven soil borings to depths ranging from approximately 35-feet to 60-feet below ground surface (bgs). Results of the 2014 soil boring and sampling program indicated the presence of chloride concentrations in soil.

In October 2014, GHD prepared and submitted a soil assessment and delineation activities report to CEMC detailing recommendations to further investigate and determine the vertical and horizontal extent of chloride impacts at the Site. CEMC concurred with the recommendations outlined in GHD's 2014 report, thus GHD returned to the Site in 2015 to execute the planned field activities. The results of those activities are provided herein.

3. **Recommended Remediation Action Limits**

Information available on the Petroleum Recovery Research Center (PRRC) Mapping Portal and the United States Geological Survey (USGS) Current Water Database for the Nation; indicates the depth to groundwater at the Site is greater than 100-feet bgs; the nearest private domestic water

source is greater than 200-feet from the release site; the nearest public/municipal water source is greater than 1,000-feet from the release site; and the release site lies more than 1,000 horizontal feet from the nearest surface water body. Consequently, the NMOCD total ranking criteria score is zero (0) for the Site. The anticipated site-specific Recommended Remediation Action Levels (RRALs) to be applied to this location by the NMOCD are 10 milligram per kilogram (mg/kg) for benzene; 50 mg/kg for total benzene, toluene, ethylbenzene, and xylenes (BTEX); 5,000 mg/kg for TPH; and an NMOCD accepted 500 mg/kg for chlorides.

4. Drilling and Sampling - 2014

On April 8, 2014, GHD's contracted service provider, Harrison & Cooper, Inc. (HCI) of Lubbock, Texas submitted an initial New Mexico One Call utility locate ticket (2014110877). GHD submitted a MCBU Chevron Dig Plan with appropriate attachments for approval to the Chevron Buckeye Field Management Team. On April 14, 2014 GHD and HCI mobilized to the Site to begin soil boring activities. The soil borings were pre-cleared via air knife techniques to a depth of 5-feet bgs or until refusal. The remainder of each boring was advanced using an air rotary drill rig. Eleven soil borings were advanced across the Site on April 14 and 15, 2014. Eight soil borings were advanced to total depths of 35-feet bgs and three soil borings were advanced to total depths of 60-feet bgs. Chloride concentrations in soil were field screened by mixing soil samples with distilled water. The rinsate was then screened using Hach chloride test strips to measure chloride concentrations in milligrams per liter (mg/L). This field method led to soil boring (SB-10) being advanced to 60-feet bgs, and soil borings (SB-3 and SB-6) being advanced to 35-feet bgs. All eleven soil borings were plugged with bentonite. Soil borings were logged in accordance with the Unified Soil Classification System and recorded.

Soil samples were collected for laboratory analysis from each boring (SB-1 through SB-11) at varying intervals beginning at the surface (0-feet bgs). Soil samples were packed into laboratory prepared jars and stored in a cooler with ice. The soil samples were sent to Xenco Laboratories (Xenco) in Odessa, Texas for analysis of chlorides by EPA Method E300.0.

4.1 Soil Sampling Analytical Results - 2014

The soil type observed in soil samples collected during the drilling program consisted of light gray, dense-weathered caliche from the surface to approximately 8-feet bgs. Light yellow to orange caliche, weathered to dense, interbedded with well cemented very fine grain sandstone was observed from approximately 8-feet bgs to 25-feet bgs. Unconsolidated, very fine grain, yellow/orange/brown sand interbedded with moderate to well cemented very fine grain sandstone lithologies were noted in the 35-feet and 60-feet interval. Moisture content observed in the soil samples was dry in all instances.

Soil boring samples (SB-1, SB-2, SB-3, SB-4, SB-5, SB-7, SB-8, SB-9 and SB-11) collected from the Site for laboratory analyses were below the Site RRAL (500 mg/kg) for chloride concentrations at total depth. Soil boring samples (SB-6 and SB-10) collected from the Site for laboratory analysis exceeded the Site RRAL at total depths of 35-feet and 60-feet for chloride concentrations (500 mg/kg) at 1,410 mg/kg and 631 mg/kg, respectively. Soil laboratory analytical results from GHD's 2014 activities are summarized in Table 2, and on Figure 4.

5. Drilling and Sampling - 2015

On August 11, 2015, HCI of Lubbock, Texas submitted an initial New Mexico One Call utility locate ticket (2015331929). GHD submitted a MCBU Chevron Dig Plan with appropriate attachments for approval to the Chevron Buckeye Field Management Team. On August 19, 2015 GHD and HCI mobilized to the Site to begin soil boring activities. The soil borings were pre-cleared via air knife techniques to a depth of 5-feet bgs or until refusal. The remainder of each boring was advanced using an air rotary drill rig. On August 20, 2015, four soil borings (SB-12, SB-13, SB-14, and SB-15) were advanced to approximately 35-feet bgs and one boring (SB-16) was advanced to 90-feet bgs. All five soil borings were plugged with bentonite. A photo log documenting the 2014 and 2015 drilling activities is included as Appendix B. Soil borings were logged in accordance with the Unified Soil Classification System and recorded. Visual representation of the 2014 and 2015 boring logs can be found in Appendix C.

Soil samples were collected for laboratory analysis from each boring (SB-12 through SB-16) at varying intervals beginning at the surface (0-feet bgs). Soil samples were packed into laboratory prepared jars and stored in a cooler with ice. The soil samples were sent to Xenco in Midland, Texas for analysis of chlorides by EPA Method 300/300.1. The soil laboratory analytical reports for all sampling activities (2011 to 2015) are included as Appendix D.

5.1 Soil Sampling Analytical Results - 2015

The soil type observed in soil samples collected during the 2015 drilling program consisted of dense and weathered dull yellow to orange caliche from the surface to approximately 15-feet bgs. Pale yellow, weathered and dense caliche interbedded with poor to moderately cemented very fine grain sandstone was observed to approximately 21-feet bgs. Dull orange very fine grain sand with broken caliche interbedded with poor to moderately cemented very fine grain sandstone lithologies were noted to a total depth of approximately 35-feet bgs. Moisture content observed in the soil samples was dry in all instances with the exception of soil boring (SB-16) at the 68-foot interval; which was noted as being moist.

Samples collected from four soil borings (SB-12, SB-14, SB-15 and SB-16) were below the Site RRAL (500 mg/kg) for chloride concentrations; with the exception of SB-14 at the 15-foot interval (593 mg/kg). Soil boring (SB-13) exceeded site RRAL (500 mg/kg) at the surface and in the 10-foot to 25-foot interval. This data from the soil boring program demonstrates that the nature and extent of chloride impacts from the release incident are minimal and the potential risk to impact groundwater is extremely low. A soil analytical summary of the 2015 results is presented in Table 3. A Site Details and Analytical Results Map (2014 - 2015) is presented as Figure 4.

6. Conclusions

A thorough subsurface investigation was implemented at the Site. Evaluation of the analytical data obtained from soil assessment and delineation activities performed in April of 2014 and August of 2015 indicates that vertical and horizontal delineation of chloride impacts has been achieved at the Site. Based on data provided in this report, no further delineation or remedial efforts are warranted.

Figures



CAD File: I:\CAD\Files\07----\074635-Chevron-CVU #266\074635-00\074635-00(003)\074635-00(003)GN-DL001.dwg



Source: USDA FSA Imagery, May 10, 2014





CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY LEA COUNTY, NEW MEXICO CENTRAL VACUUM UNIT #266

074635-00 Sep 16, 2015

FIGURE 2

SITE AERIAL MAP

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LEA COUNTY, NEW MEXICO CENTRAL VACUUM UNIT #266

SITE DETAILS AND UTILITIES MAP

CAD File: I:\CAD\Files\07----\074635-Chevron-CVU #266\074635-00\074635-00(003)\074635-00(003)GN-DL001.dwg

FIGURE 3



New Mexico East (US Feet)

SITE DETAILS AND ANALYTICAL RESULTS MAP



Tables

GHD Chevron Environmental Management Company - Soil Assessment and Delineation Activities Report | 074635 (3)

Table 1 Soil Analytical Summary - Crain Central Vacuum Unit No. 266 Lea County, New Mexico

Sample ID	Sample Date	Depth (bgs)	Chlorides (mg/kg)
NMOCD Recomme	ended Remediation A	ction Levels	500 (mg/kg)
SS-1	1/19/11	6"	70,400
SS-1	1/18/11	1'	3,160
SS-1	1/18/11	2'	912
SS-2	1/19/11	6"	19,200
SS-2	1/18/11	1'	2,400
SS-2	1/18/11	2'	1,810
SS-2	1/18/11	3'	1,520
SS-3	1/19/11	6"	46,400
SS-3	1/18/11	1'	1,730
SS-3	1/18/11	2'	2,400
SS-3	1/18/11	3'	1,410
SS-4	1/19/11	6"	57,600
SS-4	1/18/11	1'	8,000
SS-4	1/18/11	2'	4,880
SS-5	1/19/11	6"	51,200
SS-5	1/18/11	1'	11,400
SS-5	1/18/11	2'	5,440
SS-5	1/18/11	3'	5,360
SS-6	1/19/11	6"	42,400
SS-6	1/18/11	1'	2,200
SS-6	1/18/11	2'	6,160
SS-6	1/18/11	3'	3,200

Notes:

1. All analytical results reported in (mg/kg) milligrams per kilogram

2. Chloride analyses by EPA Method E300.0

3. Highlighted cells indicate concentrations exceeding guidance RRALs

4. bgs - below ground surface

5. Depth of samples reported in feet

Table 2Soil Analytical Summary - 2014Central Vacuum Unit No. 266Lea County, New Mexico

Sample ID	Sample Date	Depth (bgs)	Chlorides (mg/kg)
NMOCD Recom	mended Remediation Action	Levels	500
	A /1 E /1 A	0'	(<i>mg/kg</i>)
5B-1	4/15/14	<u>0</u>	7,600
5B-1	4/15/14	D	1,310
5B-1	4/15/14	15	976
5B-1	4/15/14	35	2,760
SB-1	4/15/14	50	143
5B-1	4/15/14	60	95.7
		0'	10.200
5B-2	4/15/14	0	18,300
5B-2	4/15/14	5	3,250
SB-2	4/15/14	10	3,080
SB-2	4/15/14	15	685
SB-2	4/15/14	25	34.9
5B-2	4/15/14	35	16.2
		01	6 200
SB-3	4/15/14	0	6,390
SB-3	4/15/14	5	433
SB-3	4/15/14	15	16.3
SB-3	4/15/14	35	6.73
SB-4	4/15/14	0'	393
SB-4	4/15/14	5'	159
SB-4	4/15/14	15	17.4
SB-4	4/15/14	35'	12.2
SB-5	4/15/14	0'	760
SB-5	4/15/14	5'	173
SB-5	4/15/14	10'	913
SB-5	4/15/14	15'	185
SB-5	4/15/14	25'	32.7
SB-5	4/15/14	35'	22.0
SB-6	4/14/14	0'	15,500
SB-6	4/14/14	5'	1,630
SB-6	4/14/14	10'	1,070
SB-6	4/14/14	15'	2,330
SB-6	4/14/14	25'	269
SB-6	4/14/14	35'	1,410

Table 2 Soil Analytical Summary - 2014 Central Vacuum Unit No. 266 Lea County, New Mexico

Sample ID	Sample Date	Depth (bgs)	Chlorides (mg/kg)
NMOCD Recom	mended Remediation Action	Levels	500 (mg///g)
CD 7	A/15/1A	0'	(<i>IIIg/kg)</i>
	4/15/14	5'	9,000
SB-7	4/15/14	10'	3,430
SB-7	4/15/14	15'	715
SB-7	4/15/14	25'	386
SB-7	4/15/14	25	388
50-1	4/10/14		500
SB-8	4/14/14	0'	29,600
SB-8	4/14/14	5'	3,220
SB-8	4/14/14	10'	2,220
SB-8	4/14/14	15'	1,430
SB-8	4/14/14	25'	133
SB-8	4/14/14	35'	32.2
SB-9	4/14/14	0'	17.8
SB-9	4/14/14	5'	38.1
SB-9	4/14/14	10'	526
SB-9	4/14/14	15'	183
SB-9	4/14/14	25'	17.8
SB-9	4/14/14	35'	18.3
SB-10	4/14/14	0'	4,610
SB-10	4/14/14	5'	851
SB-10	4/14/14	15'	135
SB-10	4/14/14	25'	746
SB-10	4/14/14	35'	1,580
SB-10	4/14/14	60'	631
SB-11	4/14/14	0'	7,360
SB-11	4/14/14	5'	1,150
SB-11	4/14/14	10'	169
SB-11	4/14/14	20'	183
SB-11	4/14/14	40'	7.57
SB-11	4/14/14	60'	7.72

Notes:

1. All analytical results reported in (mg/kg) milligrams per kilogram

2. Chloride analyses by EPA Method E300.0

3. Highlighted cells indicate concentrations exceeding guidance RRALs

4. bgs - below ground surface

5. Depth of samples reported in feet

Sample Date	Depth (bgs)	Chlorides (mg/kg)		
nmended Remediation Action	n Levels	500		
0/00/45	0/00/45			
8/20/15	5'	5.03		
8/20/15	10'	6.76		
8/20/15	15'	4,19		
8/20/15	20'	<2.15		
8/20/15	25'	<2.09		
8/20/15	35'	3.49		
8/20/15	0'	28,300		
8/20/15	5'	260		
8/20/15	10'	527		
8/20/15	15'	599		
8/20/15	20'	613		
8/20/15	25'	1,180		
8/20/15	35'	385		
8/20/15	0'	79.5		
8/20/15	5'	342		
8/20/15	10'	186		
8/20/15	15'	593		
8/20/15	20'	235		
8/20/15	25'	51.6		
8/20/15	35'	13.0		
8/20/15	0'	45.9		
8/20/15	5'	99.1		
8/20/15	10'	27.1		
8/20/15	15'	17.1		
8/20/15	20'	17.9		
8/20/15	25'	13.8		
8/20/15	35'	12.1		
8/20/15	0'	10.7		
8/20/15	5'	248		
8/20/15	10'	10.9		
8/20/15	15'	9.07		
8/20/15	20'	3.24		
8/20/15	30'	5.04		
8/20/15	50'	2.19		
8/20/15	70'	<2.12		
8/20/15	90'	2.13		
	Sample Date Immended Remediation Action 8/20/15 </td <td>Sample Date Depth (bgs) mmended Remediation Action Levels 8/20/15 0' 8/20/15 5' 8/20/15 10' 8/20/15 15' 8/20/15 20' 8/20/15 25' 8/20/15 25' 8/20/15 35' 8/20/15 35' 8/20/15 5' 8/20/15 10' 8/20/15 5' 8/20/15 10' 8/20/15 10' 8/20/15 10' 8/20/15 25' 8/20/15 25' 8/20/15 10' 8/20/15 10' 8/20/15 10' 8/20/15 10' 8/20/15 15' 8/20/15 20' 8/20/15 10' 8/20/15 10' 8/20/15 10' 8/20/15 10' 8/20/15 10' 8/20/15 10'</td>	Sample Date Depth (bgs) mmended Remediation Action Levels 8/20/15 0' 8/20/15 5' 8/20/15 10' 8/20/15 15' 8/20/15 20' 8/20/15 25' 8/20/15 25' 8/20/15 35' 8/20/15 35' 8/20/15 5' 8/20/15 10' 8/20/15 5' 8/20/15 10' 8/20/15 10' 8/20/15 10' 8/20/15 25' 8/20/15 25' 8/20/15 10' 8/20/15 10' 8/20/15 10' 8/20/15 10' 8/20/15 15' 8/20/15 20' 8/20/15 10' 8/20/15 10' 8/20/15 10' 8/20/15 10' 8/20/15 10' 8/20/15 10'		

Notes:

1. All analytical results reported in (mg/kg) milligrams per kilogram

Chloride analyses by EPA Method E300.0
 Highlighted cells indicate concentrations exceeding guidance RRALs

4. bgs - below ground surface

5. Depth of samples reported in feet



GHD Chevron Environmental Management Company - Soil Assessment and Delineation Activities Report | 074635 (3)

Appendix A Original Form C-141

State of New Mexico Energy Minerals and Natural Resources

> Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505

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

Release Notification and Corrective Action

	OPERATOR	X Initial Report	Final Repor
Name of Company CHEVRON	Contact Josie DeLeon		
Address	Telephone No.Office: 575-396-441	4 ext 223 Cellular: 432	-425-1528
56 Texas Camp Road, Lovington NM 88260			
Facility Name: CVU-66	Facility Type: Injection well		

Surface Owner:

Mineral Owner

Lease No.

LOCATION OF RELEASE-API # 30-025-25796

Longitude: degrees minutes seconds Lattitude: degrees minutes seconds									
Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County	
		L.	0					Lea	
Е	6	18.0S	35E		North		West		

NATURE OF RELEASE

Type of Release Produced Water	Volume of Release 75 BW	Volume Recovered0
Source of Release : Injection well	Date and Hour of Occurrence	Date and Hour of Discovery
	Jan 6, 2011 @ approx 12:00	Jan 6, 2011 12:00 p.m.
	Noon	*
Was Immediate Notice Given?	If YES, To Whom? Mr. Larry Joh	nson
x Yes 🗌 No Not Required		
By Whom? /Kim Klahsen		
Was a Watercourse Reached?	If YES, Volume Impacting the Wa	tercourse.
Yes x No		
If a Watercourse was Impacted, Describe Fully.*		
Describe Cause of Problem and Remedial Action Taken.*FS found water	running down location. Leak due to rupture	e in injection line. After excavation complete will
investigate cause of rupture.		
Describe Area Affected and Cleanup Action Taken.*Shut in and called in	"one call" for excavation for repair of line.	
I hereby certify that the information given above is true and complete to	the best of my knowledge and underst	and that pursuant to NMOCD rules and
regulations all operators are required to report and/or file certain release	the NMOCD more and perform corrective as	does not relieve the operator of lightlity
public health or the environment. The acceptance of a C-141 report by	inte contamination that nose a threat to	around water surface water human health
or the environment. In addition NMOCD acceptance of a C-141 renor	t does not relieve the operator of respon	sibility for compliance with any other
federal state or local laws and/or regulations.		and any for complement man any cases
	OIL CONSER	VATION DIVISION
Signature:		
	Approved byDistrict Supervisor:	
Printed Name: Josie DeLeon	· II · · · · ·	
	Assessed Data	Emiration Data:
Title: Safety Specialist	Approval Date:	Expiration Date:
	Con 12 and C American	Attached

Conditions of Approval:

Phone: 432-425-1528

Date: January 10, 2011 * Attach Additional Sheets If Necessary

Appendix B Photograph Log



Photo 1 – View of drilling activities (SB-4) facing south west



Photo 2 – View of drilling activities (SB-2) facing east



Site Photographs



Photo 3 – View of drilling activities (SB-4) facing north east



Photo 4 – View of drilling activities (SB-11) facing south east



Site Photographs



Photo 3 – View of air knife/bore hole clearance activities facing north east



Photo 4 - View of drilling activities (SB-13) facing north east

Site Photographs





Photo 3 - View of air rotary drill rig and overhead utility observation facing north



Photo 4 - View of drilling activities (SB-14) facing north



Site Photographs

Appendix C Soil Boring Logs

						SOIL	BC		00	ì		
Project: Client:	Central Va Lea Coun CEMC	acuum Unit ty, New Me	t #266 exico			1	No.	SB-1		-	File No.:74635Date:4/15/2014Drilling Co.:Harrison & Cooper, Inc.Supervisor:Kenny CooperType Rig:Air/Mud RotaryLogged by:John Fergerson	
	LABC	DRATORY	TEST DAT	ΓA		FIE	LD [DATA			BORING DATA	_
Benzene	Res	Ethyl-	ed in mg/k səuəlx	Fotal TPH (C6-C35)	Chlorides	Photo- Ionization Detection Reading (ppm)	Sampling	Depth (feet)	Water Level	Screen Interval	Start Time: 2:05 pm Finish Time: 2:50 pm	
							\boxtimes	\bigcirc			Pad Material: Caliche, light gray, crushed-broken, dry	Γ.
- - - -								-5-			Caliche: Light gray, dense-weathered, dry	
- - - - - - - - -							\boxtimes	- 10			Caliche: Light yellow-orange, dense-weathered,dry	
- - - - -								- 20			Caliche: Light yellow-orange, weathered-dense, interbedded with well cemented, very fine grain sandstone, dry	
								- 25			Sand: Light yellow-orange, very fine grain unconsolidated, interbedded with moderate-well cemented very fine grain sandstone, dry	
- - - - - -							\boxtimes	-35			Sand: Bright yellowish-brown, very fine grain unconsolidated, interbedded with moderate-well cemented very fine grain sandstone, dry	
	Sampling	Interval	<u> </u>	<u> </u>	So	Stratification is In bil Classification Ba	ferre	40 40 And May No on Visual-Man	t be l ual F	Exac	t. Vater First Noted	

						0.011								_		
Project: Client:	Central Va Lea Coun CEMC	acuum Uni ty, New Me	t #266 exico			SOIL	ВС	SB-1	OG	j	File No.: Date: Drilling Co.: Supervisor: Type Rig: Logged by:	74635 4/15/2014 Harrison & Cooper, Ir Kenny Cooper Air/Mud Rotary John Fergerson	IC.			
	LABC	DRATORY	TEST DAT	A		FIE	LD [DATA			BORING DATA					
	Res	ults Report	ed in mg/kg	1		Photo-	6		e	rval						
Benzene	Toluene	Ethyl- benzene	Xylenes	Total TPH (C6-C35)	Chlorides	Ionization Detection Reading (ppm)	Sampling	Depth (feet)	Water Lev	Screen Inte	Start Time: 2:05 pm	Finish Time:	2:50 pm			
								- 45			Sand: Bright yellowis interbedded with m	sh-brown, very fine grain noderate-well cemented sandstone, dry	unconsolidated, very fine grain			
	Sampling	Interval			S	Stratification is Ir oil Classification Ba	ferre ased	ed And May No on Visual-Man	be E ual P	Exact Proce	dure	¥	Analyzed Sample			

Analyzed Sample

						SOIL	BC	DRING L	OG	;		
Project: Client:	Central Va Lea Coun CEMC	acuum Uni ty, New Me	t #266 exico			1	No.	SB-2	_		File No.:74635Date:4/15/2014Drilling Co.:Harrison & Cooper, Inc.Supervisor:Kenny CooperType Rig:Air/Mud RotaryLogged by:John Fergerson	
	LABC	DRATORY	TEST DAT	Ā		FIE	LD [DATA			BORING DATA	
Benzene	Res	Ethyl- benzene	ed in mg/kg seuel X	Total TPH (C6-C35)	Chlorides	Photo- lonization Detection Reading (ppm)	Sampling	Depth (feet)	Water Level	Screen Interval	Start Time: 1:15 pm Finish Time: 1:45 pm	
- - - - - -							×				Pad Material: Caliche, light gray, crushed-broken, dry Caliche: Light gray, dense-weathered, dry	
- - - - - - - -											Caliche: Light yellow-orange, dense-weathered, dry	
- - - - - - - - - - - - - - - - - - -							\boxtimes	- 20			Caliche: Light yellow-orange, weathered-dense, interbedded with well cemented very fine grain sandstone, dry Sand: Light yellow-orange, very fine grain unconsolidated, interbedded with moderate-well cemented very fine grain sandstone, dry	
								-35			Sand: Bright yellowish brown, very line grain unconsolidated, interbedded with moderate-well cemented very fine grain sandstone, dry. Total Depth = 35-feet	
	Sampling	Interval			S	Stratification is Ir oil Classification Ba	nferre	d And May Not on Visual-Man	be l ual F	Exact Proce	t. vater First Noted dure Analyzed Sample	

	SOIL BORING LOG												
Project: Client:	Central V Lea Coun CEMC	acuum Uni ty, New Me	t #266 exico			ŗ	No.	SB-3			File No.:74635Date:4/15/2014Drilling Co.:Harrison & Cooper, Inc.Supervisor:Kenny CooperType Rig:Air/Mud RotaryLogged by:John Fergerson		
	LABO	DRATORY	TEST DAT	A		FIE	LD [DATA			BORING DATA		
	Res	ults Report	ed in mg/kg	1		Dhata			0	val			
Benzene	Toluene	Ethyl- benzene	Xylenes	Total TPH (C6-C35)	Chlorides	Ionization Detection Reading (ppm)	Sampling	Depth (feet)	Water Lev	Screen Inter	Start Time: 12:30 pm Finish Time: 1:00 pm		
_							\boxtimes	\bigcirc			Pad Material: Caliche, light gray, crushed-broken, dry	Γ.	
- - - 							\boxtimes				Caliche: Light gray, dense-weathered, dry	-	
- - -												-	
- - -							\boxtimes	-15-			Caliche: Light yellow-orange, dense-weathered, dry	- - -	
- - - - -								- 20			Caliche: Light yellow-orange, weathered-dense interbedded with well cemented very fine grain sandstone, dry		
- - - - -								- 25			Sand: Light yellow-orange, very fine grain unconsolidated, interbedded with moderate-well cemented very fine grain sandstone, dry	- - -	
- - - -								- 30			Sand: Bright yellowish brown, very fine grain unconsolidated, interbedded with moderate-well cemented very fine grain	-	
- - - -							\boxtimes	-35			sandstone, dry. Total Depth = 35-feet	-	
\square	Sampling	Interval			So	Stratification is Ir bil Classification Ba	nferre ased	- 40 - 40 - 40 And May Not on Visual-Manu	be I Jal F	Exact	t. dure Water First Noted		

						SOIL	BC	RING L	00	;	
Project: Client:	Central V Lea Cour CEMC	acuum Unit ity, New Me	t #266 exico			ſ	No.	SB-4			File No.:74635Date:4/15/2014Drilling Co.:Harrison & Cooper, Inc.Supervisor:Kenny CooperType Rig:Air/Mud RotaryLogged by:John Fergerson
	LABO	ORATORY	TEST DAT	Ā		FIE	LD [DATA			BORING DATA
Benzene	Loluene	Ethyl- benzene	ed in mg/kg SəuəlX	Total TPH (C6-C35)	Chlorides	Photo- Ionization Detection Reading (ppm)	Sampling	Depth (feet)	Water Level	Screen Interval	Start Time: 10:45 am Finish Time: 11:10 am
							\bowtie	\bigcirc			Pad Material: Caliche, light gray, crushed-broken, dry
- - - - -							\boxtimes	-5-			Caliche: Light gray, dense-weathered, dry
- - - - -							\boxtimes	- 10			Caliche: Light yellow-orange, dense-weathered, dry
- -								- 20			Caliche: Light yellow-orange, weathered-dense interbedded with well cemented very fine grain sandstone, dry
- - - - -								- 25			Sand: Light yellow-orange, very fine grain unconsolidated, interbedded with moderate-well cemented very fine grain sandstone, dry
							\boxtimes	- 30			Sand: Bright yellowish brown, very fine grain unconsolidated, interbedded with moderate-well cemented very fine grain sandstone, dry. Total Depth = 35-feet
- - - -								40			
\square	Sampling	Interval			S	Stratification is Ir oil Classification B	nferre ased	d And May Not on Visual-Man	t be I ual F	Exac Proce	t. <u>Vater First Noted</u> idure Analyzed Sample

						SOIL	BC		00	;			
Project: Client:	Central V Lea Cour CEMC	acuum Uni ty, New Me	t #266 exico			I	No.	SB-5			File No.: Date: Drilling Co.: Supervisor: Type Rig: Logged by:	74635 4/15/2014 Harrison & Cooper, Inc. Kenny Cooper Air/Mud Rotary John Fergerson	
	LABO	DRATORY	TEST DAT	ГА		FIE	LD [DATA				BORING DATA	
Benzene	Loluene	Ethyl- benzene	ed in mg/k Seues	Total TPH (C6-C35)	Chlorides	Photo- Ionization Detection Reading (ppm)	Sampling	Depth (feet)	Water Level	Screen Interval	Start Time: 11:25 am	Finish Time: 11:55 am	
-							\boxtimes	\bigcirc			Top Soil: Clayey, sandy s broker	silt, grayish yellow brown, unconsolidated, n caliche in matrix, dry	
- - - -							\boxtimes	-6			Caliche: Ligh	nt gray, dense-weathered, dry	
- - - - - - - - -											Caliche: Light yell	low-orange, dense-weathered, dry	
- - - - -								- 20			Caliche: Light yellow-ora well cemented	ange, weathered-dense interbedded with I very fine grain sandstone, dry	
								- 25			Sand: Light yellow-or interbedded with mo	range, very fine grain unconsolidated, derate-well cemented very fine grain sandstone, dry	_
- - -							\boxtimes	-35			To	tal Depth = 35-feet	
-								40					
\square	Sampling	Interval			S	Stratification is Ir ioil Classification B	nferre ased	d And May Not on Visual-Man	t be ual F	Exac Proce	t. dure	Water First Noted Analyzed Sample	

						SOIL	BC	DRING L	00	}		-					
Project: Client:	Central V Lea Coun CEMC	acuum Uni ity, New Me	t #266 exico			ŗ	No.	SB-6			File No.:74635Date:4/14/2014Drilling Co.:Harrison & Cooper, Inc.Supervisor:Kenny CooperType Rig:Air/Mud RotaryLogged by:John Fergerson						
	LABO	ORATORY	TEST DAT	Ā		FIE	LD [DATA			BORING DATA						
Benzene	Res euenno L	ults Report Ethyl- benzene	ed in mg/kg səuə X	Total TPH (C6-C35)	Chlorides	Photo- lonization Detection Reading (ppm)	X Sampling	Depth (feet)	Water Level	Screen Interval	Start Time: 4:10 pm Finish Time: 4:40 pm Top Soil: Clayey sandy silt, grayish yellow brown, unconsolidated,						
- - - - - -							\boxtimes	-5			broken caliche in matrix, dry Caliche: Light gray, dense-weathered, dry						
- - - - - - -							X	-10			Caliche: Light yellow-orange, dense-weathered, dry						
- - - - -							M	- 20			Caliche: Light yellow-orange, weathered-dense interbedded with well cemented very fine grain sandstone, dry	-					
								-30-			Sand: Light yellow-orange, very fine grain unconsolidated, interbedded with moderate-well cemented very fine grain sandstone, dry						
- - - - -								- 35			Total Depth = 35-feet						
	Sampling	Interval			S	Stratification is Ir oil Classification Ba	ased	← 40 ← ed And May No on Visual-Man	t be ual f	Exac Proce	t. Edure Water First Noted Analyzed Sample						

	SOIL BORING LOG											
Project: Client:	Central V Lea Coun CEMC	acuum Uni ity, New Me	t #266 exico			I	No.	SB-7			File No.:74635Date:4/15/2014Drilling Co.:Harrison & Cooper, Inc.Supervisor:Kenny CooperType Rig:Air/Mud RotaryLogged by:John Fergerson	
	LABO	ORATORY	TEST DAT	ГА		FIE	LD [DATA			BORING DATA	
Benzene	Loluene	Ethyl- benzene	ed in mg/kg səuəlX	Total TPH (C6-C35)	Chlorides	Photo- Ionization Detection Reading (ppm)	Sampling	Depth (feet)	Water Level	Screen Interval	Start Time: 10:00 am Finish Time: 10:30 am	
- - -											Top Soil: Clayey sandy silt, grayish yellow brown, unconsolidated, broken caliche in matrix, dry	[. .
- - -							\boxtimes	-5			Caliche: Light gray, dense-weathered, dry	
- -							\boxtimes	-10				
- - -							\boxtimes	-15			Caliche: Light yellow-orange, dense-weathered, dry	
- - -								- 20			Caliche: Light yellow-orange, weathered-dense interbedded with well cemented very fine grain sandstone, dry	
-								- 25			Sand: Yellow-orange, very fine grain unconsolidated, interbedded with moderate-well cemented very fine grain sandstone, dry	
- - - -							\boxtimes	- 35			Total Depth = 35-feet	
- - -								40				
\square	Sampling	Interval			s	Stratification is Ir oil Classification B	nferre	d And May Not on Visual-Man	t be I ual F	Exact Proce	ct. eedure → Water First Noted → Analyzed Sample	

						SOIL	BC		00	}		•		
Project: Client:	Central V Lea Cour CEMC	acuum Unit	t #266 exico				No.	SB-8			File No.:74635Date:4/14/2014Drilling Co.:Harrison & Cooper, Inc.Supervisor:Kenny CooperType Rig:Air/Mud RotaryLogged by:John Fergerson			
	LAB	ORATORY	TEST DAT	Ā		FIE	LD [DATA			BORING DATA			
ene	Res	ults Report	ed in mg/kg	TPH (335)	ides	Photo- Ionization Detection	ampling	Depth (feet)	ter Level	en Interval				
Benz	Tolue	Ethyl	Xyler	Total (C6-0	Chlor	Reading (ppm)	ů		Wa	Scre	Start Time: 3:30 pm Finish Time: 4:00 pm			
											Top Soil: Clayey sandy silt, grayish yellow brown, unconsolidated, broken caliche in matrix, dry			
- - - -							\boxtimes	-5			Caliche: Light gray, dense-weathered, dry			
- - -							\boxtimes	-10			 			
- - - 							\boxtimes	-15			Caliche: Light yellow-orange, dense-weathered, dry	-		
- - - -								- 20			Caliche: Light yellow-orange, weathered-dense interbedded with well cemented very fine grain sandstone, dry	-		
- - 								-25			Sand: Yellow-orange, very fine grain unconsolidated, interbedded with moderate-well comented very fine grain sandstone, dry			
- - - -								- 30			Total Death 25 feet	- - -		
-							X	-35			l otal Depth = 35-feet			
-														
\boxtimes	Sampling	Interval			S	Stratification is Ir oil Classification B	nferre ased	ed And May No on Visual-Man	t be ual f	Exac Proce	t. Vater First Noted			
						SOIL	BC		OG	}		-		
-----------------------	--------------------------------	-------------------------	------------------------	-----------------------	-----------	--	----------------	--------------------------------	-----------------	-----------------	--	---		
Project: Client:	Central Va Lea Coun CEMC	acuum Uni ty, New Me	t #266 exico			ŗ	No.	SB-9			File No.:74635Date:4/14/2014Drilling Co.:Harrison & Cooper, Inc.Supervisor:Kenny CooperType Rig:Air/Mud RotaryLogged by:John Fergerson			
	LABC	DRATORY	TEST DAT	A		FIE	LD [DATA			BORING DATA	-		
Benzene	Loluene	Ethyl- benzene	ed in mg/kg Xhlenes	Total TPH (C6-C35)	Chlorides	Photo- Ionization Detection Reading (ppm)	Sampling	Depth (feet)	Water Level	Screen Interval	Start Time: 2:50 pm Finish Time: 3:15 pm			
- - - -								-5-			Caliche: Light gray, dense-weathered, dry			
- - - -							\boxtimes					-		
- - - -							\boxtimes	-15			Caliche: Light yellow-orange, dense-weathered, dry	-		
- - - - -								- 20			Caliche: Light yellow-orange, weathered-dense interbedded with well cemented very fine grain sandstone, dry	-		
- - - - -								-25			Sand: Yellow-orange, very fine grain unconsolidated, interbedded with moderate-well cemented very fine grain sandstone, dry			
- - - -							\boxtimes	- 35			Total Depth = 35-feet	•		
-								40				-		
\boxtimes	Sampling	Interval			S	Stratification is Ir oil Classification B	nferre ased	ed And May No on Visual-Man	t be I ual F	Exac Proce	t. edure Water First Noted			

						SOIL	BC	DRING L	00)			
Project: Client:	Central V Lea Cour CEMC	acuum Unit hty, New Me	t #266 exico			I	No.	SB-10			File No.: Date: Drilling Co.: Supervisor: Type Rig: Logged by:	74635 4/14/2014 Harrison & Cooper, Inc. Kenny Cooper Air/Mud Rotary John Fergerson	
	LAB	ORATORY	TEST DAT	ГА		FIE	LD [DATA				BORING DATA	
3enzene	Res	ults Reporte euseue -Ivhi-	ed in mg/k səuəl⁄i	Fotal TPH C6-C35)	Chlorides	Photo- Ionization Detection Reading (ppm)	Sampling	Depth (feet)	Water Level	Screen Interval	Start Time: 1:10 pm	Finish Time: 2:30 pm	
 - -					0						Top Soil: Clayey sandy s broke	silt, grayish yellow brown, unconsolidated, en caliche in matrix, dry	
- 							\boxtimes	-5-			Caliche: Lig	ht gray, dense-weathered, dry	
- -							\boxtimes	-10-					
- - -								- 15			Caliche: Light ye	llow-orange, dense-weathered, dry	
- 								- 20			Caliche: Light yellow-or well cementer	range, weathered-dense interbedded with d very fine grain sandstone, dry	
							X	- <u>2</u> 5			Sand: Yellow-orange, v with moderate-well c	ery fine grain unconsolidated, interbeddec emented very fine grain sandstone, dry	- - - - - - - - - - - - - - - - - - -
-	Sampling	Interval			s	Stratification is Ir oil Classification Ba	nferre	40	t be I ual F	Exac	dure	Water First Noted Analyzed Sample	l. k

						SOIL	BC		00	;			
Project: Client:	Central Va Lea Coun CEMC	acuum Uni ty, New Me	t #266 exico			1	No.	SB-10			File No.: Date: Drilling Co.: Supervisor: Type Rig: Logged by:	74635 4/14/2014 Harrison & Cooper, Inc. Kenny Cooper Air/Mud Rotary John Fergerson	
	LABC	DRATORY	TEST DAT	Ā		FIE	LD [DATA				BORING DATA	
Benzene	Loluene	Ethyl- benzene	ed in mg/ki səuə/X	Total TPH (C6-C35)	Chlorides	Photo- lonization Detection Reading (ppm)	Sampling	Depth (feet)	Water Level	Screen Interval	Start Time: 1:10 pm	Finish Time: 2:	30 pm
								- 45			Sand: Yellow-orange, v with moderate-well c Sand: Dull yellow-o interbedded with m Sand: Dull orange, ver with slight-moderate c To	ery fine grain unconsolidat emented very fine grain sa range, very fine grain, unc oderate-well cemented ver sandstone, dry y fine grain, unconsolidate emented very fine grain sa otal Depth = 60-feet	ed, interbedded ndstone, dry
\boxtimes	Sampling	Interval			S	Stratification is Ir oil Classification Ba	nferre	d And May No on Visual-Man	t be I ual F	Exac Proce	t. dure		/ater First Noted nalyzed Sample

						SOIL	BC		00	}	
Project: Client:	Central V Lea Coun CEMC	acuum Unii ity, New Me	t #266 exico			I	No.	SB-11			File No.:74635Date:4/14/2014Drilling Co.:Harrison & Cooper, Inc.Supervisor:Kenny CooperType Rig:Air/Mud RotaryLogged by:John Fergerson
	LABO	DRATORY	TEST DAT	Ā		FIE	LD [DATA			BORING DATA
Benzene	Res	Ethyl- Senzene	ed in mg/kg Kylenes	Total TPH (C6-C35)	Chlorides	Photo- Ionization Detection Reading (ppm)	Sampling	Depth (feet)	Water Level	Screen Interval	Start Time: 11:55 pm Finish Time: 12:45 pm
								\bigcirc		0,	Top Soil: Clayey sandy silt, grayish yellow brown, unconsolidated, broken caliche in matrix, dry
- - - - -								-6			Caliche: Light gray, dense-weathered, dry
							\boxtimes	- 10			Caliche: Light yellow-orange, dense-weathered, dry
							\boxtimes	- 20			Caliche: Light yellow-orange, weathered-dense interbedded with well cemented very fine grain sandstone, dry
- - - - - - - - - - -								- 30			Sand: Yellow-orange, very fine grain unconsolidated, interbedded with moderate-well cemented very fine grain sandstone, dry
-	Sampling	Interval			S	Stratification is Ir oil Classification B	nferre ased	ed And May Not on Visual-Man	t be ual F	Exac	t. edure Water First Noted Analyzed Sample

						SOIL	BC		OG	;		-
Project: Client:	Central V Lea Coun CEMC	acuum Unit ty, New Me	t #266 exico			ļ	No.	SB-11			File No.:74635Date:4/14/2014Drilling Co.:Harrison & Cooper, Inc.Supervisor:Kenny CooperType Rig:Air/Mud RotaryLogged by:John Fergerson	
	LABO	DRATORY	TEST DAT	ГА		FIE	LD [DATA			BORING DATA	_
Benzene	Res	Ethyl- benzene	ed in mg/k Saual X	Total TPH (C6-C35)	Chlorides	Photo- Ionization Detection Reading (ppm)	Sampling	Depth (feet)	Water Level	Screen Interval	Start Time: 11:55 pm Finish Time: 12:45 pm	
-											Sand: Yellow-orange, very fine grain unconsolidated, interbedded with moderate-well cemented very fine grain sandstone, dry	-
- - - - -								- 45			Sand: Dull yellow-orange, very fine grain, unconsolidated,	
- - - - -								- 55			sandstone, dry	
F											Total Dopth – 60 fact	-
								- 60 - 65 - 70 - 75 - 80			Total Depth = 60-feet	
	Sampling	Interval			S	Stratification is In oil Classification B	nferre ased	d And May No on Visual-Man	t be I ual F	Exac Proce	t. edure	



PROJECT NAME: CVU # 266 PROJECT NUMBER: 074635 CLIENT: CEMC LOCATION: Lea County, New Mexico

DEPTH			DEPTH			SAMP	LE	
ft BGS			ft BGS	(#)	AL	(H)	s	
				EPTH	TER	SEC (nsc	
		<u> </u>		B	Ľ	Ľ		
-	Well Pad Material, crushed caliche mixed with sand, dry							
-								
-2			2.00					
-	CALICHE, dull yellowish orange, dense-weathered, slightly moist				AIR	1.0		
-								
4								
-								
-								
6								
-								
-								
-8						1.0		
Ļ								
-								
-10	hecomes light vellowish orange weathered-dense, dry							
-	becomes light yellowish orange, weathered achise, dry							
-								
-12		\triangle						
- 12					AIR	1.0		
-								
- 14					Ĭ			
2_	becomes pale yellow, weathered-dense, interbedded with poor-moderately				-			
16	cemented very fine grained sandstone, dry							
<u><u>ś</u> -</u>								
						1.0		
5-								
20			20.00				SP	
	SAND, dull orange, very fine grained, unconsolidated with broken caliche in matrix, interbedded with poor-moderately cemented very fine grained sandstone		20.00					
	dry							
22								
<u>~</u>					AIR	1.0		
24								
24								
	NOTES:							
							Page	1 of 2
							0	



PROJECT NAME: CVU # 266 PROJECT NUMBER: 074635 CLIENT: CEMC LOCATION: Lea County, New Mexico

DEPTH	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH			SAMP	LE	
ft BGS		ft BGS	(lt)	VAL	(#)	Ś	
			EPT	TER	REC	nsc	
				≤			
- 26							
- 20							
					1.0		
-28					1.0		
-							
_				V I			
- 30	becomes dull yellowish orange, moderate-well cemented very fine grained						
	Sandstone, no caliche						
-							
- 32				AIR	1.0		
-							
-							
	BOREHOLE TERMINATED @ 35.0ft BGS	35.00					
- 36							
-							
-							
- 10							
-42							
5 – 44 8 –							
16							
48							
й	NOTES:		I				
						Page	2 of 2



PROJECT NAME: CVU # 266 PROJECT NUMBER: 074635 CLIENT: CEMC LOCATION: Lea County, New Mexico

DEPTH	STRATIGRAPHIC DESCRIPTION & REMARKS		DEPTH			SAMF	LE	
ft BGS			ft BGS	(I)	VAL	(#)	S	
				EPTH	TER	SEC	nsc	
	Well Pad Material, crushed caliche mixed with sand, dry	12800			Ľ			
_	Weil Fau Wateria, Gusheu Calche mixeu with Sand, dry							
-								
-2	CALICHE, dull yellowish orange, dense-weathered, slightly moist		2.00			1.0		
_						1.0		
-								
- 4					Ĭ			
-					-			
-6								
_								
F					AIR	1.0		
-8								
_								
-								
— 10 -	becomes light yellowish orange, weathered-dense, dry							
-								
- 								
_					AIR	1.0		
_								
- 14					V			
11	becomes pale yellow, weathered-dense, interbedded with poor-moderately							
9/23	cemented very fine grained sandstone, dry							
10 								
SNOL								
- 						1.0		
⊒_ 2								
266.G					ľ			
<u>}</u> −20	SAND, dull orange, very fine grained, unconsolidated with broken caliche in		20.00		+		SP	
4635	matrix, interbedded with poor-moderately cemented very fine grained sandstone, dry							
NSN 22					AIR	1.0		
ຂ24								
	NOTES:							
VERE							Page	1 of 2



PROJECT NAME: CVU # 266 PROJECT NUMBER: 074635 CLIENT: CEMC LOCATION: Lea County, New Mexico

DEPTH	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH			SAMP	LE	
ft BGS		ft BGS	(lt)	VAL	(#)	Ś	
			EP T	TER	REC	nsc	
				≤			
- 26							
- 20							
_				AIR	10		
-28					1.0		
L							
-		•		I V			
30	becomes dull yellowish orange, moderate-well cemented very fine grained sandstone, no caliche						
_							
- 32							
- 52				AIR	1.0		
L							
- 34							
		35.00					
F	BOREHOLE TERMINATED @ 35.0ft BGS	35.00					
- 36							
-							
- 20							
- 50							
_							
2-40							
-42							
44							
é −46							
8							
6 ⊢ 48							
í – I – – – – – – – – – – – – – – – – – –							
	NOTES:					Deet	2 . 6 . 2
						raye	2012



PROJECT NAME: CVU # 266 PROJECT NUMBER: 074635 CLIENT: CEMC LOCATION: Lea County, New Mexico

DEPTH		DEPTH			SAMP	LE	
ft BGS		ft BGS	(H)	VAL	(ft)	Ś	
			EPTH	VTER	REC (nsc	
	Well Pad Material, crushed caliche mixed with sand, slightly moist			=			
F							
		2.00					
-	CALICHE, dull yellowish orange, dense-weathered, slightly moist			AIR	1.0		
-							
4				V			
-							
-6							
L							
+				AIR	1.0		
	becomes light yellowish orange, weathered-dense, dry						
_				V			
- 10							
- 12							
-				AIR	1.0		
-	becomes pale yellow, weathered-dense, interbedded with poor-moderately cemented very fine grained sandstone, dry						
				V			
3/12							
16							
				AIR	1.0		
≝⊢18 ≝⊢	SAND, dull orange, very fine grained, unconsolidated with broken caliche in matrix, interbedded with poor-moderately cemented very fine grained sandstone	18.00				SP	
	dry			V			
20							
-0004							
5⊢ ?; 							
ő				AIR	1.0		
5 – 24				1 V			
	NOTES:						
EKBU						Page	1 of 2
ò							



PROJECT NAME: CVU # 266 PROJECT NUMBER: 074635 CLIENT: CEMC

LOCATION: Lea County, New Mexico

DEPTH	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH			SAMP	LE	
ft BGS		ft BGS	H (#)	VAL	(#)	ပ	
			EPTH	NTER'	REC	nsc	
- 26 				AIR	1.0		
28 	becomes dull yellowish orange, moderate-well cemented very fine grained sandstone, no caliche			V			
32 				AIR	1.0		
34 				V			
-	BOREHOLE TERMINATED @ 35.0ft BGS	- 35.00					
— 36 -							
- - 38							
-							
e — 40 −							
- 42							
- 							
-46							
-							
- 48 -							
	NOTES:	1	1	1		Page	2 of 2



PROJECT NAME: CVU # 266 PROJECT NUMBER: 074635 CLIENT: CEMC LOCATION: Lea County, New Mexico

DEPTH	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH			SAMP	LE	
ft BGS		ft BGS	(tt)	VAL	(ft)	က	
			EPTH	ITER	REC	nsc	
	Clayey SILT, gravish vellow brown, with broken caliche in matrix, slightly moist					ML	
-							
-							
-2	CALICHE, dull yellowish orange, dense-weathered, slightly moist	2.00		AIR	1.0		
-							
-4							
L					_		
F							
6							
-							
-8	becomes light yellowish orange, weathered-dense, drv			AIR	1.0		
-							
F				ľ			
10							
-							
- 12							
- 12				AIR	1.0		
	becomes pale yellow, weathered-dense, interbedded with poor-moderately cemented very fine grained sandstone, dry						
14							
-							
16							
					10		
18	SAND dull orange very fine grained unconsolidated with broken caliche in	18.00			1.0	SP	
	matrix, interbedded with poor-moderately cemented very fine grained sandstone, dry						
7007							
20 20							
² / ₂ - 22							
				AIR	1.0		
5 – 24				1 V			
	NOTES:						
RBU						Page	e 1 of 2



PROJECT NAME: CVU # 266 PROJECT NUMBER: 074635 CLIENT: CEMC

LOCATION: Lea County, New Mexico

DEPTH	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH	- SAM			LE	
ft BGS		ft BGS	(#)	VAL	(t)	S	
			DEPTH	INTER	REC (nsc	
- 26 - -				AIR	1.0		
28 30	becomes dull yellowish orange, moderate-well cemented very fine grained sandstone, no caliche			Y			
- - 				AIR	1.0		
- 34 - -		35.00		Y			
- 	BOREHOLE TERMINATED @ 35.0ft BGS						
- 38 							
- 							
44 							
46							
- 48							
	NOTES:					Page	2 of 2



PROJECT NAME: CVU # 266 PROJECT NUMBER: 074635 CLIENT: CEMC LOCATION: Lea County, New Mexico

DEPTH	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH			SAMP	LE	
ft BGS		ft BGS	T (#)	VAL	(#)	Ś	
			DEPTH	INTER	REC	nsc	
_	Clayey SILT, grayish yellow brown, with broken caliche in matrix, slightly moist					ML	
_							
-2	CALICHE, dull yellowish orange, dense-weathered, slightly moist	2.00					
-				AIR	1.0		
-							
-							
— 6 _							
L					1.0		
-8	becomes light yellowish orange, weathered-dense, dry				1.0		
-							
					-		
-							
				AIR	1.0		
-	becomes pale yellow, weathered-dense, interbedded with poor-moderately cemented very fine grained sandstone, dry						
- 14				V			
3/15					T		
16							
		19.00		AIR	1.0	SD.	
	SAND, dull orange, very fine grained, unconsolidated with broken caliche in matrix, interbedded with poor-moderately cemented very fine grained sandstone,	18.00				J	
766.64	dry			Ĭ			
20							
0/463							
22							
				AIR	1.0		
24							
BUKLI	NOTES:	 				D	1 -5 4
OVER						Page	; 1014



PROJECT NAME: CVU # 266 PROJECT NUMBER: 074635 CLIENT: CEMC

LOCATION: Lea County, New Mexico

INDEX INDEX INDEX INDEX INDEX INDEX INDEX -28 -28 -30 -31 -31 -31 -31 -30 -32 -33 -34 -34 -34 -34 -34 -34 -34 -34 -34 -34 -40 -44 -44 -44 -44 -46	DEPTH	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH			LE		
	ft BGS		ft BGS	(ff)	VAL	(#)	ပ	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$				EPTH	TER	SEC (nsc	
$ \begin{array}{c} -26\\ -28\\ -30\\ -32\\ -34\\ -36\\ -38\\ -44\\ -48\\ -48\\ -48\\ -48\\ -48\\ -48\\ -4$		K to the second s		ä	≚			
$ \begin{array}{c} 28 \\ -28 \\ -30 \\ -32 \\ -34 \\ -36 \\ -38 \\ -40 \\ -42 \\ -44 \\ -46 \\ -48 \\ -48 \\ -48 \\ -48 \\ -48 \\ -48 \\ -48 \\ -48 \\ -48 \\ -48 \\ -48 \\ -48 \\ -48 \\ -46 \\ -48 \\ -$	-)					
$ \begin{array}{c} $	- 26					-		
$ \begin{array}{c} -28\\ -30\\ -32\\ -34\\ -34\\ -36\\ -40\\ -42\\ -44\\ -46\\ -48\\ -48\\ -48\\ -48\\ -48\\ -48\\ -48\\ -48$	-							
$ \begin{array}{c} 30\\ -32\\ -34\\ -36\\ -38\\ -40\\ -42\\ -44\\ -46\\ -48\\ \end{array} $	-28				AIR	1.0		
	-							
$ \begin{array}{c} 30 \\ -32 \\ -34 \\ -36 \\ -38 \\ -42 \\ -44 \\ -46 \\ -48 \\ -48 \\ \end{array} $					V I			
-32 -34 -36 -38 -40 -42 -44 -46 -48	- 30					ľ		
-32 -34 -36 -38 -40 -42 -42 -44 -46 -48	Ĺ		1			ĺ		
-32 -34 -36 -40 -42 -44 -46 -48	-							
-34 -36 -38 -40 -42 -42 -42 -44 -44 -44 -44 -46 -48	-32					10		
-34 -36 -38 -40 -42 -42 -44 -44 -46 -48	-		•			1.0		
-36 -38 -40 -42 -44 -46 -48 -48	- 31							
	- 34							
	E		1			ľ		
	-36							
	-							
	F				AIR	1.0		
	- 38							
40 42 44 46 48	Ē							
40 42 42 44 46 48								
42 44 46 48	40							
42 44 46 48	<u></u>							
AIR 1.0 AIR 1.0 AIR 1.0 AIR 1.0 AIR 1.0	2 0 2 							
					AIR	1.0		
	44							
46 						_		
46 20	<u>ا</u> د		1					
	46							
	3							
]		AIR	1.0		
	2 48 2 -							
	2							
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PROJECT NAME: CVU # 266 PROJECT NUMBER: 074635 CLIENT: CEMC LOCATION: Lea County, New Mexico

DEPTH	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH		SAMP			
πBGS		πBGS	TH (ft)	RVAL	C (#)	scs	
			DEP.	INTE	REC	SU	
_							
-							
- 52				AIR	10		
-					1.0		
_					_		
-							
- 56 -					-		
-				AIR	1.0		
- 58							
F							
- 60					-		
-							
_					_		
62 -				AIR	1.0		
_							
-64				V			
-							
- 66							
-							
-				AIR	1.0		
68 							
L				V I			
-70							
-							
- 72							
-				AIR	1.0		
-							
- 74 -				V I			
	NOTES:	1			_		
						Page	3 of 4



PROJECT NAME: CVU # 266 PROJECT NUMBER: 074635 CLIENT: CEMC LOCATION: Lea County, New Mexico

DEPTH		DEPTH			LE		
ft BGS		ft BGS	(#)	/AL	(H)	S	
			DEPTH	INTER	REC (nsc	
- 				AIR	1.0		
- 78 - - - - 80 -	becomes bright yellowish brown, dry			Y			
- - - 82 -				AIR	1.0		
84 - - -				Y			
- 86 - - - 88				AIR	1.0		
- - - - - - - - - - - - - - - - - - -		90.00		Y			
92							
94							
96							
98							
	NOTES:		<u> </u>			Page	4 of 4

Appendix D Soil Laboratory Analytical Reports

CARDINAL Laboratories

January 24, 2011

CINDY CRAIN CRAIN ENVIRONMENTAL 2925 E. 17TH STREET ODESSA, TX 79761

RE: CVU #266

Enclosed are the results of analyses for samples received by the laboratory on 01/19/11 14:19.

Cardinal Laboratories is accredited through Texas NELAP for:

Method SW-846 8021	Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method SW-846 8260	Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method TX 1005	Total Petroleum Hydorcarbons

Certificate number T104704398-08-TX. Accreditation applies to solid and chemical materials and non-potable water matrices.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Celey D. Keine

Celey D. Keene Lab Director/Quality Manager



CRAIN ENVIRONMENTAL CINDY CRAIN 2925 E. 17TH STREET ODESSA TX, 79761 Fax To: (432) 272-0304

Received:	01/19/2011	Sampling Date:	01/18/2011
Reported:	01/24/2011	Sampling Type:	Soil
Project Name:	CVU #266	Sampling Condition:	Cool & Intact
Project Number:	0111-002	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

Sample ID: SS - 1 (1') (H100143-01)

Chloride, SM4500CI-B	mg/	kg	Analyzed By: LR						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3160	16.0	01/21/2011	ND	432	108	400	0.00	

Sample ID: SS - 1 (2') (H100143-02)

Chloride, SM4500CI-B	mg,	/kg	Analyzed By: LR					-	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	912	16.0	01/21/2011	ND	432	108	400	0.00	

Sample ID: SS - 2 (1') (H100143-03)

Chloride, SM4500Cl-B	mg/kg		Analyzed By: LR						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2400	16.0	01/21/2011	ND	432	108	400	0.00	

Sample ID: SS - 2 (2') (H100143-04)

Chloride, SM4500Cl-B	mg/	kg	Analyzed By: LR						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1810	16.0	01/21/2011	ND	432	108	400	0.00	

Sample ID: SS - 2 (3') (H100143-05)

Chloride, SM4500CI-B	mg/kg		Analyzed By: LR						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1520	16.0	01/21/2011	ND	432	108	400	0.00	

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager



CRAIN ENVIRONMENTAL CINDY CRAIN 2925 E. 17TH STREET ODESSA TX, 79761 Fax To: (432) 272-0304

Received:	01/19/2011	Sampling Date:	01/18/2011
Reported:	01/24/2011	Sampling Type:	Soil
Project Name:	CVU #266	Sampling Condition:	Cool & Intact
Project Number:	0111-002	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

Sample ID: SS - 3 (1') (H100143-06)

Chloride, SM4500CI-B	mg/kg		Analyzed By: LR						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1730	16.0	01/21/2011	ND	432	108	400	0.00	

Sample ID: SS - 3 (2') (H100143-07)

Chloride, SM4500Cl-B Analyte	mg/kg		Analyzed By: LR						
	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2400	16.0	01/21/2011	ND	432	108	400	0.00	

Sample ID: SS - 3 (3') (H100143-08)

Chloride, SM4500CI-B	mg/kg		Analyzed By: LR						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1410	16.0	01/21/2011	ND	432	108	400	0.00	

Sample ID: SS - 4 (1') (H100143-09)

Chloride, SM4500CI-B	mg/kg		Analyzed By: LR						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	8000	16.0	01/21/2011	ND	432	108	400	0.00 .	

Sample ID: SS - 4 (2') (H100143-10)

Chloride, SM4500CI-B	mg/kg		Analyzed By: LR						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	4880	16.0	01/21/2011	ND	432	108	400	0.00	

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Celey D.Keine

Celey D. Keene, Lab Director/Quality Manager



CRAIN ENVIRONMENTAL CINDY CRAIN 2925 E. 17TH STREET ODESSA TX, 79761 Fax To: (432) 272-0304

Received:	01/19/2011	Sampling Date:	01/18/2011
Reported:	01/24/2011	Sampling Type:	Soil
Project Name:	CVU #266	Sampling Condition:	Cool & Intact
Project Number:	0111-002	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

Sample ID: SS - 5 (1') (H100143-11)

Chloride, SM4500CI-B	mg/kg		Analyzed By: LR						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	11400	16.0	01/21/2011	ND	432	108	400	0.00	

Sample ID: SS - 5 (2') (H100143-12)

Chloride, SM4500Cl-B	mg/kg		Analyzed By: LR						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	5440	16.0	01/21/2011	ND	432	108	400	0.00	

Sample ID: SS - 5 (3') (H100143-13)

Chloride, SM4500CI-B	mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	5360	16.0	01/21/2011	ND	432	108	400	0.00	

Sample ID: SS - 6 (1') (H100143-14)

Chloride, SM4500Cl-B Analyte	mg/kg		Analyzed By: HM						
	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2200	16.0	01/21/2011	ND	432	108	400	0.00	

Sample ID: SS - 6 (2') (H100143-15)

Chloride, SM4500CI-B	mg	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	6160	16.0	01/21/2011	ND	432	108	400	0,00	

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Celey D.Keine

Celey D. Keene, Lab Director/Quality Manager



CRAIN ENVIRONMENTAL CINDY CRAIN 2925 E. 17TH STREET ODESSA TX, 79761 Fax To: (432) 272-0304

Received:	01/19/2011	Sampling Date:	01/18/2011
Reported:	01/24/2011	Sampling Type:	Soil
Project Name:	CVU #266	Sampling Condition:	Cool & Intact
Project Number:	0111-002	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

Sample ID: SS - 6 (3') (H100143-16)

Chloride, SM4500CI-B	mg	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3200	16.0	01/21/2011	ND	432	108	400	0.00	

Sample ID: SS - 1 (6") (H100143-17)

Chloride, SM4500CI-B	mg	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	70400	16.0	01/21/2011	ND	432	108	400	0.00	

Sample ID: SS - 2 (6") (H100143-18)

Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	19200	16.0	01/21/2011	ND	432	108	400	0.00	

Sample ID: SS - 3 (6") (H100143-19)

Chloride, SM4500CI-B	mg/	kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	46400	16.0	01/21/2011	ND	432	108	400	0.00	

Sample ID: SS - 4 (6") (H100143-20)

Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	57600	16.0	01/21/2011	ND	432	108	400	0.00	

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Celey D.Keine

Celey D. Keene, Lab Director/Quality Manager



CRAIN ENVIRONMENTAL CINDY CRAIN 2925 E. 17TH STREET ODESSA TX, 79761 Fax To: (432) 272-0304

Received:	01/19/2011	Sampling Date:	01/19/2011
Reported:	01/24/2011	Sampling Type:	Soil
Project Name:	CVU #266	Sampling Condition:	Cool & Intact
Project Number:	0111-002	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

Sample ID: SS - 5 (6") (H100143-21)

Chloride, SM4500CI-B	mg/	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	51200	16.0	01/21/2011	ND	432	108	400	0.00	

Sample ID: SS - 6 (6") (H100143-22)

Chloride, SM4500CI-B	mg/	kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	42400	16.0	01/21/2011	ND	432	108	400	0.00	

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Celevit Keine

Celey D. Keene, Lab Director/Quality Manager



Notes and Definitions

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

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any daim arising, whether based in contract or tort, shall be limited to the amount paid by dient for analyses. All daims, including those for negligence and any other cause whistoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such daim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

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Celey D. Keene, Lab Director/Quality Manager

Page 7 of 10

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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ARDINAL LABORATORIES 101 East Marland, Hobbs, NM 88240

	(575) 393-2326 FAX	(575) 393-24	76									2						
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oject Manager: ,	Cindy Cra	in				P.O.#												
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one #:432	-530-4799 F	ax #: 452-	226	-03	04	Addre	ss:											
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oject Narne: 🤇	CVU #	266				State:)	Zip:										
oject Location:	Lea Co.	NW				Phone	,#;											
impler Name:						Fax #:				7-				<u> </u>				,
OH LAB USE ONLY				M	ATRIX	PR	ESERV.	SAMP	DNI	₹7								
			EBS (C)OMP.	RATER RER						201								
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Page 8 of 10

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JSTODY AND ANALYSIS REQUEST	ANALYSIS REQUEST															res 🗆 No Add' Phone #: Ves 🗆 No Add' Eax #:	wil Results to:	r. crained grail.com		to 575-393-2476
CHAIN-OF-CU	01 71/8	P.O. #:	Company:	Attn: Address: "IV	city: /2	State: Zip:	Fax #:	PRESERV SAMPLING	2.27 72 2.17 72 7	1-12-11 12:20 1	12.40 1	123:27	13:00		or terre, streau per larretes to mee findeuer Bund by the chefit for the series of by Continent with in S0 days after control longer of the applicable stratures, or logg of profits on thread by shown its applicables.	Find Fax Result:	ULUNDU REMARKS: EM	C:nd	dition CHECKED 3Y. t. Yes No	pt verbal champes. Please fax written changes t \mathcal{IL}
AL LABORATORIES (ast Mariand, Hobbs, NM 88240	0) 333-2320 FAX (310) 333-2410 14.11.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1	indy crain	Flast 19th St	50-4791/ Fax#4,22-272-6304	202 Project Owner CheVrol2	W # 266	rail Quantiesi	U MATRIX	Samp pe	S-6-(1) 6 +/	5-0 8 8 61 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	5-6 (1) 61	5-6 (2') (C)		৫০ - উল্লেখ্য বিজ্ঞান, এনে মটনাই ধন্যব্যাদৰ বেলাক্র্য পির সাঁহ সিন্দ কিন্দা ফার্বান্ত প্রাক্ষান্ত ব্রহারে দা এইদিবার ে লার্চুপ্রদারে এনে সাগ্র মেন্টা বেনেরে প্রায়ারেছেলের রাজনি যে উর্জাপের সালগ্রের মিনেটার লার্চু লা দেরাসু এনে মেরলে বিংগালকালের যে বিজালবারে যে বিজালবার্দ্রার ব্রায়ার্ডুবের লারাধ্যে বিংগালেরেন সালগ্রের সির্বাহি ব্যাব্য		eglici menologi de la	Time: Accelved by.	rcle One) Sample Con Cool Intee s - Other: U. S. Cher B	+ Cardinal cannot accel
ARDIN	Company Name:	Project Manager: C	Address: 2.9 R.C	City: しんにんだ	Project #: 0/1/-C	Project Name: C/	Project Location:	PON LLO USE ON Y	Lab I.D.	HIDDING IN	7 N	E (<u>م بر بر</u>		רוב האל העל דבי בי במצר אות בשורמן. עד שקטטר - לעיר היוני שמובר עורבים לבו ערואבס - הוואס פיפה אומו באכמהו, כפי א	Relinquished By:	Viel Sta	Keilinguisned by:	Delivered Bv: (Cil Sampler - UPS - Bus	FORM-006 Revision 1.0

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Analytical Report 483548

for

Conestoga Rovers & Associates

Project Manager: Chris Knight

CEMC- CVU#226

074635

28-APR-14

Collected By: Client





12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122): Texas (T104704215-14-16-TX), Arizona (AZ0765), Florida (E871002), Louisiana (03054) New Jersey (TX007), North Carolina(681), Oklahoma (9218), Pennsylvania (68-03610)

Xenco-Atlanta (EPA Lab Code: GA00046): Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135) Louisiana (04176), USDA (P330-07-00105)

> Xenco-Lakeland: Florida (E84098) Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX) Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX) Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757) Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757) Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)



28-APR-14

Project Manager: **Chris Knight Conestoga Rovers & Associates** 2135 S Loop 250 W Midland, TX 79703

Reference: XENCO Report No(s): **483548 CEMC- CVU#226** Project Address: Lea County, NM

Chris Knight:

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) 483548. 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. 483548 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Ams boah

 Kelsey Brooks

 Project Manager

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Sample Cross Reference 483548



Conestoga Rovers & Associates, Midland, TX

CEMC- CVU#226

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
074635-JMF-SB11	S	04-14-14 12:00	- 0 ft	483548-001
074635-JMF-SB11	S	04-14-14 12:15	- 5 ft	483548-002
074635-JMF-SB11	S	04-14-14 12:20	- 10 ft	483548-003
074635-JMF-SB11	S	04-14-14 12:25	- 20 ft	483548-004
074635-JMF-SB11	S	04-14-14 12:30	- 40 ft	483548-005
074635-JMF-SB11	S	04-14-14 12:35	- 60 ft	483548-006
074635-JMF-SB10	S	04-14-14 13:10	- 0 ft	483548-007
074635-JMF-SB10	S	04-14-14 13:15	- 5 ft	483548-008
074635-JMF-SB10	S	04-14-14 13:25	- 15 ft	483548-009
074635-JMF-SB10	S	04-14-14 13:30	- 25 ft	483548-010
074635-JMF-SB10	S	04-14-14 13:35	- 35 ft	483548-011
074635-JMF-SB9	S	04-14-14 14:50	- 0 ft	483548-012
074635-JMF-SB9	S	04-14-14 14:55	- 5 ft	483548-013
074635-JMF-SB9	S	04-14-14 15:00	- 10 ft	483548-014
074635-JMF-SB9	S	04-14-14 15:05	- 15 ft	483548-015
074635-JMF-SB9	S	04-14-14 15:10	- 25 ft	483548-016
074635-JMF-SB9	S	04-14-14 15:15	- 35 ft	483548-017
074635-JMF-SB10	S	04-14-14 14:25	- 60 ft	483548-018
074635-JMF-SB8	S	04-14-14 15:30	- 0 ft	483548-019
074635-JMF-SB8	S	04-14-14 15:35	- 5 ft	483548-020
074635-JMF-SB8	S	04-14-14 15:40	- 10 ft	483548-021
074635-JMF-SB8	S	04-14-14 15:45	- 15 ft	483548-022
074635-JMF-SB8	S	04-14-14 15:50	- 25 ft	483548-023
074635-JMF-SB8	S	04-14-14 15:55	- 35 ft	483548-024
074635-JMF-SB6	S	04-14-14 16:10	- 0 ft	483548-025
074635-JMF-SB6	S	04-14-14 16:15	- 5 ft	483548-026
074635-JMF-SB6	S	04-14-14 16:20	- 10 ft	483548-027
074635-JMF-SB6	S	04-14-14 16:25	- 15 ft	483548-028
074635-JMF-SB6	S	04-14-14 16:30	- 25 ft	483548-029
074635-JMF-SB6	S	04-14-14 16:35	- 35 ft	483548-030
074635-JMF-SB7	S	04-15-14 10:00	- 0 ft	483548-031
074635-JMF-SB7	S	04-15-14 10:05	- 5 ft	483548-032
074635-JMF-SB7	S	04-15-14 10:10	- 10 ft	483548-033
074635-JMF-SB7	S	04-15-14 10:15	- 15 ft	483548-034
074635-JMF-SB7	S	04-15-14 10:20	- 25 ft	483548-035
074635-JMF-SB7	S	04-15-14 10:25	- 35 ft	483548-036
074635-JMF-SB4	S	04-15-14 10:45	- 0 ft	483548-037
074635-JMF-SB4	S	04-15-14 10:50	- 5 ft	483548-038
074635-JMF-SB4	S	04-15-14 11:00	- 15 ft	483548-039
074635-JMF-SB4	S	04-15-14 11:05	- 35 ft	483548-040
074635-JMF-SB5	S	04-15-14 11:25	- 0 ft	483548-041
074635-JMF-SB5	S	04-15-14 11:30	- 5 ft	483548-042
074635-JMF-SB5	S	04-15-14 11:35	- 10 ft	483548-043



Sample Cross Reference 483548



Conestoga Rovers & Associates, Midland, TX

CEMC- CVU#226

074635-JMF-SB5	S	04-15-14 11:40	- 15 ft	483548-044
074635-JMF-SB5	S	04-15-14 11:45	- 25 ft	483548-045
074635-JMF-SB5	S	04-15-14 11:50	- 35 ft	483548-046
074635-JMF-SB3	S	04-15-14 12:30	- 0 ft	483548-047
074635-JMF-SB3	S	04-15-14 12:35	- 5 ft	483548-048
074635-JMF-SB3	S	04-15-14 12:45	- 15 ft	483548-049
074635-JMF-SB3	S	04-15-14 12:55	- 35 ft	483548-050
074635-JMF-SB2	S	04-15-14 13:15	- 0 ft	483548-051
074635-JMF-SB2	S	04-15-14 13:20	- 5 ft	483548-052
074635-JMF-SB2	S	04-15-14 13:25	- 10 ft	483548-053
074635-JMF-SB2	S	04-15-14 13:30	- 15 ft	483548-054
074635-JMF-SB2	S	04-15-14 13:35	- 25 ft	483548-055
074635-JMF-SB2	S	04-15-14 13:40	- 35 ft	483548-056
074635-JMF-SB1	S	04-15-14 14:05	- 0 ft	483548-057
074635-JMF-SB1	S	04-15-14 14:10	- 5 ft	483548-058
074635-JMF-SB1	S	04-15-14 14:20	- 15 ft	483548-059
074635-JMF-SB1	S	04-15-14 14:35	- 35 ft	483548-060
074635-JMF-SB1	S	04-15-14 14:40	- 50 ft	483548-061
074635-JMF-SB1	S	04-15-14 14:45	- 60 ft	483548-062



CASE NARRATIVE



Client Name: Conestoga Rovers & Associates Project Name: CEMC- CVU#226

 Project ID:
 074635

 Work Order Number(s):
 483548

Report Date: 28-APR-14 Date Received: 04/17/2014

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-939306 Inorganic Anions by EPA 300/300.1 Chloride recovered above QC limits in the Matrix Spike. Samples affected are: 483548-033, -047, -032, -043, -042, -030, -031, -041, -029, -035, -037, -044, -036, -045, -046, -034, -038, -039, -040. The Laboratory Control Sample for Chloride is within laboratory Control Limits



Project Id: 074635 Contact: Chris Knight Project Location: Lea County, NM

Certificate of Analysis Summary 483548

Conestoga Rovers & Associates, Midland, TX

Project Name: CEMC- CVU#226



Date Received in Lab: Thu Apr-17-14 10:20 am

Report Date: 28-APR-14

								Project Ma	nager:	Kelsey Brook	s			
	Lab Id:	483548-0	001	483548-002		483548-003		483548-004		483548-005		483548-006		
Analysis Poguested	Field Id:	074635-JMF-SB11		074635-JMF-SB11		074635-JMF-SB11		074635-JMF-SB11		074635-JMF-SB11		074635-JMF-SB11		
Analysis Kequesieu	Depth:	0 ft		5 ft		10 ft		20 ft		40 ft		60 ft		
	Matrix:	SOIL	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	: Apr-14-14 12:00		Apr-14-14 12:15		Apr-14-14 12:20		Apr-14-14 12:25		Apr-14-14 12:30		Apr-14-14 12:35		
Inorganic Anions by EPA 300/300.1	Extracted:	Apr-21-14 10:30		Apr-21-14 10:30		Apr-21-14 10:30		Apr-21-14 10:30		Apr-21-14 10:30		Apr-21-14 10:30		
	Analyzed:	Apr-22-14	Apr-22-14 02:51		Apr-22-14 03:14		03:37	Apr-22-14 04:45		Apr-22-14 05:07		Apr-22-14 05:30		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	
Chloride		7360	211	1150	42.9	169	10.9	183	10.7	7.57	2.09	7.72	2.11	
Percent Moisture	Extracted:													
	Analyzed:	Apr-18-14 12:25		Apr-18-14 12:25		Apr-18-14 12:25		Apr-18-14 12:25		Apr-18-14 12:25		Apr-18-14 12:25		
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL	
Percent Moisture		5.23	1.00	6.76	1.00	8.20	1.00	6.42	1.00	4.52	1.00	5.32	1.00	

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.

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Huns Roah

Kelsey Brooks Project Manager



Project Id: 074635 Contact: Chris Knight Project Location: Lea County, NM

Certificate of Analysis Summary 483548

Conestoga Rovers & Associates, Midland, TX

Project Name: CEMC- CVU#226



Date Received in Lab: Thu Apr-17-14 10:20 am

Report Date: 28-APR-14

Tojeet Docutont Dou County, 100								Project Ma	nager:	Kelsey Brooks	5		
	Lab Id:	483548-0	007	483548-0	008	483548-0	009	483548-0	10	483548-0	11	483548-0	012
Analysis Poquested	Field Id:	074635-JMF-SB10		074635-JMF-SB10		074635-JMF-SB10		074635-JMF-SB10		074635-JMF-SB10		074635-JMF-SB9	
Analysis Kequestea	Depth:	0 ft SOIL		5 ft SOIL		15 ft SOIL		25 ft SOIL		35 ft SOIL		0 ft SOIL	
	Matrix:												
	Sampled:	Apr-14-14 13:10		Apr-14-14 13:15		Apr-14-14 13:25		Apr-14-14 13:30		Apr-14-14 13:35		Apr-14-14 14:50	
Inorganic Anions by EPA 300/300.1	Extracted:	Apr-21-14 10:30		Apr-21-14 10:30		Apr-21-14 10:30		Apr-21-14 10:30		Apr-21-14 10:30		Apr-21-14 10:30	
	Analyzed:	Apr-22-14	Apr-22-14 05:53		Apr-22-14 06:15		08:31	Apr-22-14 09:57		Apr-22-14 10:19		Apr-22-14 10:42	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		4610	102	851	108	135	11.3	746	42.4	1580	106	17.8	4.25
Percent Moisture	Extracted:												
	Analyzed:	Apr-18-14 12:25		Apr-18-14 12:25		Apr-18-14	12:25	Apr-18-14 12:25		Apr-18-14 12:25		Apr-18-14 12:25	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		1.56	1.00	7.33	1.00	11.3	1.00	5.77	1.00	5.62	1.00	5.89	1.00

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.

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Huns Roah

Kelsey Brooks Project Manager



Project Id: 074635 Contact: Chris Knight Project Location: Lea County, NM

Certificate of Analysis Summary 483548

Conestoga Rovers & Associates, Midland, TX

Project Name: CEMC- CVU#226



Date Received in Lab: Thu Apr-17-14 10:20 am

Report Date: 28-APR-14

Toject Location. Lea County, Thir								Project Ma	nager:	Kelsey Brook	s			
	Lab Id:	483548-0	013	483548-0	014	483548-0	015	483548-0	016	483548-0	017	483548-0	018	
Analysis Doguostod	Field Id:	074635-JMF-SB9		074635-JMF-SB9		074635-JMF-SB9		074635-JMF-SB9		074635-JMF-SB9		074635-JMF-SB10		
Analysis Kequestea	Depth:	5 ft		10 ft		15 ft		25 ft		35 ft		60 ft		
	Matrix:	SOIL	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Apr-14-14	Apr-14-14 15:00		Apr-14-14 15:05		Apr-14-14 15:10		Apr-14-14 15:15		Apr-14-14 14:25			
Inorganic Anions by EPA 300/300.1	Extracted:	Apr-21-14	Apr-21-14 10:30		Apr-21-14 10:30		Apr-21-14 10:30		10:30	Apr-21-14 10:30		Apr-21-14 10:30		
	Analyzed:	Apr-22-14	Apr-22-14 11:05		Apr-22-14 11:27		14:51	Apr-22-14 15:14		Apr-22-14 15:37		Apr-22-14 15:59		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	
Chloride		38.1	4.41	526	10.8	183	11.0	17.8	2.10	18.3	2.07	631	14.6	
Percent Moisture	Extracted:													
	Analyzed:	Apr-18-14 12:25		Apr-18-14 12:25		Apr-18-14	12:25	Apr-18-14 12:25		Apr-18-14 12:25		Apr-18-14 12:25		
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL	
Percent Moisture		9.21	1.00	7.82	1.00	9.30	1.00	4.59	1.00	3.57	1.00	31.4	1.00	

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Kelsey Brooks Project Manager

Page 8 of 32


Certificate of Analysis Summary 483548

Conestoga Rovers & Associates, Midland, TX

Project Name: CEMC- CVU#226



Date Received in Lab: Thu Apr-17-14 10:20 am

Report Date: 28-APR-14

Toject Location. Lea County, Thir								Project Ma	nager:	Kelsey Brook	s		
	Lab Id:	483548-0	019	483548-0	020	483548-0	021	483548-0	22	483548-0	023	483548-0	024
Analysis Doguostod	Field Id:	074635-JM	F-SB8	074635-JMI	F-SB8	074635-JMF	F-SB8	074635-JMI	-SB8	074635-JMI	F-SB8	074635-JM	F-SB8
Analysis Kequestea	Depth:	0 ft	0 ft		5 ft		10 ft		15 ft		25 ft		
	Matrix:	SOIL	,	SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Apr-14-14	15:30	Apr-14-14	15:35	Apr-14-14 1	15:40	Apr-14-14	15:45	Apr-14-14	15:50	Apr-14-14	15:55
Inorganic Anions by EPA 300/300.1	Extracted:	Apr-21-14	Apr-21-14 10:30		Apr-21-14 10:30		Apr-21-14 10:30		10:30	Apr-21-14 10:30		Apr-21-14 10:30	
	Analyzed:	Apr-22-14	16:22	Apr-22-14 17:07		Apr-22-14 1	17:30	Apr-22-14	17:52	Apr-22-14	18:15	Apr-22-14	19:23
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		29600	1020	3220	113	2220	109	1430	41.7	133	4.34	32.2	2.21
Percent Moisture	Extracted:												
	Analyzed:	Apr-18-14	12:25	Apr-18-14	12:25	Apr-17-14 1	12:25	Apr-17-14	12:25	Apr-17-14	12:25	Apr-17-14	12:25
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		2.40	1.00	11.2	1.00	8.05	1.00	4.00	1.00	7.82	1.00	9.39	1.00

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Kelsey Brooks Project Manager



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Conestoga Rovers & Associates, Midland, TX

Project Name: CEMC- CVU#226



Date Received in Lab: Thu Apr-17-14 10:20 am

Report Date: 28-APR-14

								Project Mai	nager:	Kelsey Brook	s		
	Lab Id:	483548-0)25	483548-0	26	483548-0	27	483548-0	28	483548-0)29	483548-0	030
Analysis Poquested	Field Id:	074635-JMI	F-SB6	074635-JMF	-SB6	074635-JMH	F-SB6	074635-JMF	-SB6	074635-JMI	F-SB6	074635-JM	F-SB6
Analysis Kequesieu	Depth:	0 ft	0 ft		5 ft		10 ft		15 ft		25 ft		
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Apr-14-14	16:10	Apr-14-14 1	16:15	Apr-14-14	16:20	Apr-14-14 1	6:25	Apr-14-14	16:30	Apr-14-14	16:35
Inorganic Anions by EPA 300/300.1	Extracted:	Apr-21-14	Apr-21-14 10:30		Apr-21-14 10:30		Apr-21-14 10:30		0:30	Apr-21-14 10:30		Apr-21-14	10:30
	Analyzed:	Apr-22-14	Apr-22-14 19:46		Apr-22-14 20:08		20:31	Apr-22-14 2	20:54	Apr-23-14	12:11	Apr-23-14	12:56
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		15500	407	1630	106	1070	41.9	2330	108	269	11.0	1410	42.9
Percent Moisture	Extracted:												
	Analyzed:	Apr-17-14	12:25	Apr-17-14 1	12:25	Apr-17-14	12:25	Apr-17-14 1	2:25	Apr-17-14	12:25	Apr-17-14	12:25
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		1.82	1.00	5.79	1.00	4.64	1.00	7.83	1.00	9.14	1.00	6.68	1.00

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Kelsey Brooks Project Manager



Conestoga Rovers & Associates, Midland, TX

Project Name: CEMC- CVU#226



Date Received in Lab: Thu Apr-17-14 10:20 am

Report Date: 28-APR-14

Toject Docation. Lea County, NW								Project Ma	nager:	Kelsey Brooks	5		
	Lab Id:	483548-0	483548-031		483548-032		33	483548-034		483548-035		483548-036	
Analysis Boguested	Field Id:	074635-JM	F-SB7	074635-JMI	F-SB7	074635-JMF	F-SB7	074635-JMI	F-SB7	074635-JMF	-SB7	074635-JM	F-SB7
Analysis Kequestea	Depth:	0 ft	0 ft		5 ft		10 ft		15 ft		25 ft		
	Matrix:	SOIL	SOIL			SOIL		SOIL		SOIL		SOIL	
	Sampled:	Apr-15-14	10:00	Apr-15-14	10:05	Apr-15-14 1	10:10	Apr-15-14	10:15	Apr-15-14	10:20	Apr-15-14	10:25
Inorganic Anions by EPA 300/300.1	Extracted:	Apr-21-14	Apr-21-14 10:30		Apr-21-14 10:30		10:30	Apr-21-14 10:30		Apr-21-14 10:30		Apr-21-14 10:30	
	Analyzed:	Apr-23-14	Apr-23-14 13:19		Apr-23-14 13:42		14:04	Apr-23-14	14:27	Apr-23-14	15:35	Apr-23-14	15:58
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		9000	420	3430	113	3950	110	715	21.6	386	10.6	388	10.5
Percent Moisture	Extracted:												
	Analyzed:	Apr-17-14	12:25	Apr-17-14	12:25	Apr-17-14 1	12:25	Apr-17-14	12:25	Apr-17-14	12:25	Apr-17-14	12:25
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		4.77	1.00	11.4	1.00	9.16	1.00	7.36	1.00	5.48	1.00	5.12	1.00

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Kelsey Brooks Project Manager



Certificate of Analysis Summary 483548

Conestoga Rovers & Associates, Midland, TX

Project Name: CEMC- CVU#226



Date Received in Lab: Thu Apr-17-14 10:20 am

Report Date: 28-APR-14

Toject Location. Lea County, Twi								Project Ma	nager:	Kelsey Brook	s		
	Lab Id:	483548-0	037	483548-0)38	483548-0	39	483548-0	40	483548-0	041	483548-0	042
Analysis Proprietod	Field Id:	074635-JM	F-SB4	074635-JMH	F-SB4	074635-JMF	F-SB4	074635-JMI	-SB4	074635-JMI	F-SB5	074635-JM	F-SB5
Analysis Kequeslea	Depth:	0 ft	0 ft		5 ft		15 ft			0 ft		5 ft	
	Matrix:	SOIL	,	SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Apr-15-14	10:45	Apr-15-14	10:50	Apr-15-14 1	11:00	Apr-15-14	1:05	Apr-15-14	11:25	Apr-15-14	11:30
Inorganic Anions by EPA 300/300.1	Extracted:	Apr-21-14	Apr-21-14 10:30		Apr-21-14 10:30		Apr-21-14 10:30		0:30	Apr-21-14 10:30		Apr-21-14	10:30
	Analyzed:	Apr-23-14	16:21	Apr-23-14	Apr-23-14 16:43		17:06	Apr-23-14	8:14	Apr-23-14	18:37	Apr-23-14	19:00
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		393	10.0	159	10.3	17.4	2.08	12.2	2.14	760	42.0	173	10.4
Percent Moisture	Extracted:												
	Analyzed:	Apr-17-14	12:25	Apr-17-14	12:25	Apr-17-14 1	12:25	Apr-17-14	2:25	Apr-21-14	13:00	Apr-21-14	13:00
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		ND	1.00	2.69	1.00	3.80	1.00	6.36	1.00	4.65	1.00	4.19	1.00

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Kelsey Brooks Project Manager



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Conestoga Rovers & Associates, Midland, TX

Project Name: CEMC- CVU#226



Date Received in Lab: Thu Apr-17-14 10:20 am

Report Date: 28-APR-14

roject Location. Lea County, NW								Project Ma	nager:	Kelsey Brooks	5		
	Lab Id:	483548-0)43	483548-0	944	483548-0	045	483548-0)46	483548-0	47	483548-0	048
Analysis Pogyostad	Field Id:	074635-JM	F-SB5	074635-JMI	F-SB5	074635-JMI	F-SB5	074635-JMI	F-SB5	074635-JMF	F-SB3	074635-JM	F-SB3
Analysis Kequesieu	Depth:	10 ft	10 ft		15 ft		25 ft		35 ft		0 ft		
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Apr-15-14	11:35	Apr-15-14	11:40	Apr-15-14	11:45	Apr-15-14	11:50	Apr-15-14	12:30	Apr-15-14	12:35
Inorganic Anions by EPA 300/300.1	Extracted:	Apr-21-14	Apr-21-14 10:30		10:30	Apr-21-14 10:30		Apr-21-14 10:30		Apr-21-14 10:30		Apr-24-14	10:30
	Analyzed:	Apr-23-14	20:08	Apr-23-14	20:31	Apr-23-14	20:53	Apr-23-14	21:16	Apr-23-14 2	21:39	Apr-25-14	09:54
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		913	43.3	185	10.8	32.7	4.69	22.0	3.99	6390	204	433	21.3
Percent Moisture	Extracted:												
	Analyzed:	Apr-21-14	13:00	Apr-21-14	13:00	Apr-21-14	13:00	Apr-21-14	13:00	Apr-21-14	13:00	Apr-21-14	13:00
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		7.67	1.00	7.20	1.00	14.7	1.00	49.9	1.00	1.81	1.00	6.13	1.00

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Kelsey Brooks Project Manager



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Conestoga Rovers & Associates, Midland, TX

Project Name: CEMC- CVU#226



Date Received in Lab: Thu Apr-17-14 10:20 am

Report Date: 28-APR-14

Toject Docation. Lea County, NW								Project Mai	nager:	Kelsey Brooks	5		
	Lab Id:	483548-0	049	483548-050		483548-0	51	483548-052		483548-053		483548-054	
Analysis Boguested	Field Id:	074635-JM	F-SB3	074635-JMI	F-SB3	074635-JMF	-SB2	074635-JMF	S-SB2	074635-JMF	-SB2	074635-JM	F-SB2
Analysis Kequestea	Depth:	15 ft	15 ft		35 ft		0 ft		5 ft		10 ft		
	Matrix:	SOIL	SOIL			SOIL		SOIL		SOIL		SOIL	
	Sampled:	Apr-15-14	12:45	Apr-15-14	12:55	Apr-15-14 1	3:15	Apr-15-14 1	3:20	Apr-15-14	3:25	Apr-15-14	13:30
Inorganic Anions by EPA 300/300.1	Extracted:	Apr-21-14	Apr-21-14 10:30		Apr-21-14 10:30		Apr-21-14 10:30		0:30	Apr-21-14 10:30		Apr-21-14	10:30
	Analyzed:	Apr-23-14	23:55	Apr-24-14	Apr-24-14 00:40		01:03	Apr-24-14 (01:26	Apr-24-14 (01:48	Apr-24-14	02:11
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		16.3	2.08	6.73	2.16	18300	405	3250	108	3080	107	685	20.9
Percent Moisture	Extracted:												
	Analyzed:	Apr-21-14	13:00	Apr-21-14	13:00	Apr-21-14 1	3:00	Apr-21-14 1	3:00	Apr-21-14	3:00	Apr-21-14	13:00
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		3.71	1.00	7.51	1.00	1.18	1.00	7.47	1.00	6.46	1.00	4.52	1.00

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Conestoga Rovers & Associates, Midland, TX

Project Name: CEMC- CVU#226



Date Received in Lab: Thu Apr-17-14 10:20 am

Report Date: 28-APR-14

n

Project Manager: Kelsey Brooks													
	Lab Id:	483548-	055	483548-0	56	483548-0	57	483548-0	58	483548-0	59	483548-0	060
Analysis Poguested	Field Id:	074635-JM	F-SB2	074635-JMF	074635-JMF-SB2		F-SB1	074635-JMF-SB1		074635-JMF-SB1		074635-JMI	F-SB1
Analysis Kequestea	Depth:	25 ft		35 ft		0 ft		5 ft		15 ft		35 ft	
	Matrix:	SOIL		SOIL	SOIL		SOIL		SOIL		SOIL		,
	Sampled:	Apr-15-14	13:35	Apr-15-14 1	13:40	Apr-15-14	14:05	Apr-15-14 14:10		Apr-15-14 14:20		Apr-15-14	14:35
Inorganic Anions by EPA 300/300.1	Extracted:	Apr-21-14	Apr-21-14 10:30		10:30	Apr-21-14 10:30		Apr-21-14 10:30		Apr-21-14 10:30		Apr-21-14 10:30	
	Analyzed:	Apr-24-14	03:19	Apr-24-14 (Apr-24-14 03:42		Apr-24-14 04:05		04:27	Apr-24-14 (04:50	Apr-24-14	05:35
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		34.9	2.05	16.2	2.12	7600	404	1310	42.3	976	41.2	2760	106
Percent Moisture	Extracted:												
	Analyzed:	Apr-21-14	pr-21-14 13:00		13:00	Apr-21-14	13:00	Apr-21-14	13:00	Apr-21-14	13:00	Apr-21-14	13:00
	Units/RL:	RL: % RL		%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		2.49	1.00	5.54	1.00	1.05	1.00	5.40	1.00	3.02	1.00	6.05	1.00

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Kelsey Brooks Project Manager



Percent Moisture

Project Id: 074635

Contact: Chris Knight

Certificate of Analysis Summary 483548

Conestoga Rovers & Associates, Midland, TX

Project Name: CEMC- CVU#226



Date Received in Lab: Thu Apr-17-14 10:20 am Report Date: 28-APR-14

Project Location: Lea County, NM Project Manager: Kelsey Brooks Lab Id: 483548-061 483548-062 Field Id: 074635-JMF-SB1 074635-JMF-SB1 Analysis Requested Depth: 50 ft 60 ft Matrix: SOIL SOIL Sampled: Apr-15-14 14:40 Apr-15-14 14:45 Inorganic Anions by EPA 300/300.1 Extracted: Apr-21-14 10:30 Apr-21-14 10:30 Apr-24-14 05:58 Apr-24-14 06:21 Analyzed: Units/RL: mg/kg RL mg/kg RL 4.32 4.24 Chloride 143 95.7 **Percent Moisture** Extracted: Apr-21-14 13:00 Analyzed: Apr-21-14 13:00 Units/RL: % RL % RL

5.64

1.00

1.00

7.37

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Kms Boah

Kelsey Brooks Project Manager

Page 16 of 32



Flagging Criteria



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

MDL Method Detection Limit	SDL Sample Detection Limit	LOD Limit of Detection
PQL Practical Quantitation Limit	MQL Method Quantitation Limit	LOQ Limit of Quantitation

- **DL** Method Detection Limit
- NC Non-Calculable
- + NELAC certification not offered for this compound.
- * (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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6017 Financial Drive, Norcross, GA 30071
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(813) 620-2000	(813) 620-2033
(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	



BS / BSD Recoveries



Project Name: CEMC- CVU#226

Work Order #: 483548	Project ID: 074635											
Analyst: AMB	D	ate Prepar	red: 04/21/201	14			Date A	nalyzed: (04/21/2014			
Lab Batch ID: 939208 Sample: 654348-1-E	BKS	Batcl	h #: 1					Matrix:	Solid			
Units: mg/kg		BLAN	K/BLANK	SPIKE / 1	BLANK	SPIKE DUP	LICATE	RECOV	ERY STUI	DY		
Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag	
Chloride	<2.00	50.0	47.0	94	50.0	47.1	94	0	80-120	20		
Analyst: AMB	D	Date Prepared: 04/21/2014 Date Analyzed: 04/22/2014										
Lab Batch ID: 939281 Sample: 654349-1-H	KS Batch #: 1 Matrix: Solid											
Units: mg/kg		BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag	
Chloride	<2.00	50.0	48.1	96	50.0	45.7	91	5	80-120	20		
Analyst: AMB	D	ate Prepar	red: 04/21/201	4	+		Date A	nalyzed: (04/23/2014	ł	·'	
Lab Batch ID: 939306 Sample: 654350-1-H	BKS	Batcl	h #: 1					Matrix:	Solid			
Units: mg/kg		BLAN	K/BLANK	SPIKE / 2	BLANK S	SPIKE DUP	LICATE	RECOV	ERY STUI	DY		
Inorganic Anions by EPA 300/300.1	Blank Sample Result [A]	BlankSpikeBlankBlankSpikeBlankSpikeBlankBlankSpikeBlankBlk. SpkDup.RPDControlControlControl[A]AddedSpikeSpikeAddedSpikeAddedSpikeDup.NRNRLimitsLimits[A][B][C][D][E]Result [F][G]NR%%%%%										
1 mary tes												

Relative Percent Difference RPD = $200^{*}|(C-F)/(C+F)|$ Blank Spike Recovery [D] = $100^{*}(C)/[B]$ Blank Spike Duplicate Recovery [G] = $100^{*}(F)/[E]$ All results are based on MDL and Validated for QC Purposes



BS / BSD Recoveries



Project Name: CEMC- CVU#226

Work Order #: 483548							Proj	ect ID:	074635		
Analyst: AMB	D	ate Prepar	ed: 04/21/20	14			Date A	nalyzed: (04/23/2014		
Lab Batch ID: 939364 Sample: 654351-1-1	BKS	Batcl	h #: 1					Matrix:	Solid		
Units: mg/kg		BLAN	K /BLANK	SPIKE / 1	BLANK	SPIKE DUP	LICATE	RECOV	ERY STUI	ŊҮ	
Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<2.00	50.0	49.5	99	50.0	48.7	97	2	80-120	20	
Analyst: AMB	D	ate Prepar	red: 04/24/20	14			Date A	nalyzed: (04/25/2014	•	,
Lab Batch ID: 939494 Sample: 654464-1-1	BKS	Batcl	h #: 1					Matrix:	Solid		
Units: mg/kg		BLAN	K/BLANK	SPIKE /]	BLANK S	SPIKE DUP	LICATE	RECOV	ERY STUI	DY	
Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<2.00	50.0	52.0	104	50.0	51.8	104	0	80-120	20	

Relative Percent Difference RPD = $200^{*}|(C-F)/(C+F)|$ Blank Spike Recovery [D] = $100^{*}(C)/[B]$ Blank Spike Duplicate Recovery [G] = $100^{*}(F)/[E]$ All results are based on MDL and Validated for QC Purposes

XENCO Laboratories

Form 3 - MS Recoveries

Project Name: CEMC- CVU#226



Work Order #: 483548						
Lab Batch #: 939208			Proj	ect ID: ⁽⁾	074635	
Date Analyzed: 04/21/2014	Date Prepared: 04/2	21/2014	A	Analyst: A	AMB	
QC- Sample ID: 483546-001 S	Batch #:		1	Matrix: S	Soil	
Reporting Units: mg/kg	MAT	RIX / MA	ATRIX SPIKE	RECO	VERY STU	DY
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	4 56	50.4	53.0	96	80-120	1
Lab Batch #: 939208	4.50	50.4	55.0	20	00 120	
Date Analyzed: 04/22/2014	Date Prenared: 04/2	21/2014	Δ	Analyst: A	MB	
OC- Sample ID: 483546-011 S	Batch #:		1	Matrix: S	Soil	
Reporting Units: mg/kg	MAT	RIX / MA	TRIX SPIKE	RECO	VERY STU	DY
Inorganic Anions by EPA 300	Parent Sample Result	Spike	Spiked Sample Result	%R	Control Limits	Flag
Analytes	[A]	[B]	[C]	נשן	70K	
Chloride	4 38	50.8	51.2	92	80-120	
Lab Batch #: 939281		1 0000				
Date Analyzed: 04/22/2014	Date Prepared: 04/2	21/2014	A	Analyst: A	AMB	
QC- Sample ID: 483548-009 S	Batch #:		1	Matrix: S	Soil	
Reporting Units: mg/kg	MAT	RIX / MA	TRIX SPIKE	RECO	VERY STI	DY
Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	135	282	415	99	80-120	
Lab Batch #: 939281		1	<u> </u>			
Date Analyzed: 04/22/2014	Date Prepared: 04/2	21/2014	A	Analyst: A	AMB	
QC- Sample ID: 483548-019 S	Batch #:		1	Matrix: S	Soil	
Reporting Units: mg/kg	MAT	RIX / MA	TRIX SPIKE	RECO	VERY STU	DY
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	29600	25600	54200	96	80-120	

Matrix Spike Percent Recovery [D] = 100*(C-A)/BRelative Percent Difference [E] = 200*(C-A)/(C+B)All Results are based on MDL and Validated for QC Purposes

XENCO
Laboratories

Form 3 - MS Recoveries

Project Name: CEMC- CVU#226



Work Order #: 483548						
Lab Batch #: 939306			Proj	ect ID: 0	074635	
Date Analyzed: 04/23/2014	Date Prepared: 04	/21/2014	Α	analyst: A	AMB	
QC- Sample ID: 483548-029 S	Batch #:	1	I	Matrix: S	Soil	
Reporting Units: mg/kg	MA	TRIX / MA	ATRIX SPIKE	RECO	VERY STU	JDY
Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	269	2.75	753	176	80-120	X
Lab Batch #: 939306			100		00 120	
Date Analyzed: 04/23/2014	Date Prepared: 04	/21/2014	А	nalvst: A	AMB	
OC- Sample ID: 483548-039 S	Batch #:	1	1	Matrix: S	Soil	
Reporting Units: mg/kg	MA	TRIX / MA	TRIX SPIKE	RECO	VERY STU	JDY
Inorganic Anions by EPA 300	Parent Sample Result	Spike Added	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes	[A]	[B]				
Chloride	17.4	52.0	62.3	86	80-120	1
Lab Batch #: 939364						
Date Analyzed: 04/24/2014	Date Prepared: 04	/21/2014	Α	nalyst: A	AMB	
QC- Sample ID: 483548-049 S	Batch #:	1	I	Matrix: S	Soil	
Reporting Units: mg/kg	MA	TRIX / MA	ATRIX SPIKE	RECO	VERY STU	JDY
Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	16.3	51.9	67.8	99	80-120	1
Lab Batch #: 939364		1				
Date Analyzed: 04/24/2014	Date Prepared: 04	/21/2014	A	analyst: A	AMB	
QC- Sample ID: 483548-059 S	Batch #:	1	I	Matrix: S	Soil	
Reporting Units: mg/kg	MA	TRIX / MA	TRIX SPIKE	RECO	VERY STU	JDY
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	976	1030	2130	112	80-120	
L		1	1		1	1

Matrix Spike Percent Recovery [D] = 100*(C-A)/BRelative Percent Difference [E] = 200*(C-A)/(C+B)All Results are based on MDL and Validated for QC Purposes



Form 3 - MS Recoveries



Project Name: CEMC- CVU#226

Work Order #:	483548							
Lab Batch #:	939494				Proje	ect ID: 0'	74635	
Date Analyzed:	04/25/2014	Date P	repared: 04/2	4/2014	А	nalyst: A	MB	
QC- Sample ID:	483806-002 S		Batch #: 1		ľ	Matrix: S	oil	
Reporting Units:	mg/kg		MATE	RIX / MA	TRIX SPIKE	RECO	VERY STU	DY
Ι	norganic Anions by EPA 300		Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
	Analytes			[2]				
Chloride			228	583	814	101	80-120	

Matrix Spike Percent Recovery [D] = 100*(C-A)/BRelative Percent Difference [E] = 200*(C-A)/(C+B)All Results are based on MDL and Validated for QC Purposes



Work Order #: 483548



Project Name: CEMC- CVU#226

Lab Batch #: 938962 Date Analyzed: 04/18/2014 12:25 QC- Sample ID: 483548-001 D	ate Prepare Batch	d: 04/18/2014 #: 1	Ana Mat	Project I lyst: WRU t rix: Soil	D: 074635	
Reporting Units: %		SAMPLE /	SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture Analyte	F	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture		5.23	5.22	0	20	
Lab Batch #: 938962 Date Analyzed: 04/18/2014 12:25 D: OC- Sample ID: 483548-011 D	ate Prepare Batch	d: 04/18/2014 #: 1	Ana Mat	lyst: WRU trix: Soil		
Reporting Units: %	Г	SAMPLE /	SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture	F	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Anaryte		5.62	4.92	13	20	
		5.02	4.92	15	20	
Lab Batch #: 938964 Date Analyzed: 04/17/2014 12:25 Da	ate Prepare	d: 04/17/2014	Ana	lyst:WRU		
QC- Sample ID: 483548-021 D	Batch	#: 1 SAMDLE		$\frac{\mathbf{r}\mathbf{x}}{\mathbf{D}\mathbf{U}\mathbf{D}\mathbf{U}\mathbf{C}}$	ATE DEC	OVEDV
Percent Moisture Analyte	F	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture		8.05	6.67	19	20	
Lat Batch # 938964				-	-	
Date Analyzed: 04/17/2014 12:25 Date Analyzed: 04/17/2014 12:25	ate Prepare	d: 04/17/2014	Ana	lyst:WRU		
QC- Sample ID: 483548-031 D	Batch	#: 1	Mat	rix: Soil		
Reporting Units: %	Г	SAMPLE /	SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture Analyte	F	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture		4.77	2.87	50	20	F

Spike Relative Difference RPD 200 * $|\,(B\text{-}A)/(B\text{+}A)\,|$ All Results are based on MDL and validated for QC purposes.



Work Order #: 483548



Project Name: CEMC- CVU#226

Lab Batch #: 939116 Date Analyzed: 04/21/2014 13:00 QC- Sample ID: 483548-041 D	Prepared: 04/21/2014 Batch #: 1	4 Ana Mat	Project I lyst: WRU trix: Soil	D: 074635	
Reporting Units: %	SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	4.65	4.53	3	20	
Lab Batch #: 939116 Date Analyzed: 04/21/2014 13:00 Date OC- Sample ID: 483548-051 D	Prepared: 04/21/2014 Batch #: 1	4 Ana Mat	lyst: WRU trix: Soil		
Reporting Units: %	SAMPLE	/ SAMPLE	DUPLIC.	ATE REC	OVERY
Percent Moisture Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	1.18	1.18	0	20	
Lab Batch #: 939121 Date Analyzed: 04/21/2014 13:00 QC- Sample ID: 483548-061 D	Prepared: 04/21/2014 Batch #: 1	4 Ana Mat	lyst: WRU t rix: Soil		
Reporting Units: %	SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	7.37	7.19	2	20	
Lab Batch #: 939121 Date Analyzed: 04/21/2014 13:00 Date	Prepared: 04/21/2014	4 Ana	lyst: WRU		
QC- Sample ID: 483561-003 D	Batch #: 1		rix: Soll		OVEDX
Reporting Units: %	SAMPLE	/ SAMPLE	DUPLIC	ATE RECO	OVERY
Percent Moisture Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	5.27	5.48	4	20	

Spike Relative Difference RPD 200 * $|\,(B\text{-}A)/(B\text{+}A)\,|$ All Results are based on MDL and validated for QC purposes.

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Page 25 of 32

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ww= waste water		orid	ar of preserved bottles	Numbe		Collection		John - Scizor
		es]	1	Samplers's Name:
W = Wipe 0 = 0il		>			er:	PO Numb	crent	Project Contact: Chris Knicht / Suke F
SL = Sludge WW= Waste Water						1	230	432-686-00
P = Product SW = Surface water			5160	Newrle	County	LCG. Invoice To		Email: Email: Phone No:
GW =Ground Water DW = Drinking Water				4266	C-CUV	Project Lo	lest	company Address: 2135 S. LOOP 256 M
A= Air S = Soil/Sed/Solid			·	074635	ame/Number:	Project N		Company Name / Branch:
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Matrix Codes	Analytical Information							
Job #	Xenco	Xenco Quote #		www.xenco.com				Service Center - San Antonio, Texas (210-509-3334)
Tampa, Florida (813-620-2000)	eorgia (770-449-8800)	Norcross, Ge						Dallas, Texas (214-902-0300)
Lakeland, Florida (863-646-8526)	as (432-563-1800)	Odessa, Tex						Setting the Standard since 1990 Stafford, Texas (281-240-4200)
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Setting the Standard since 1990 Stafford,Texas (281-240-4200) Dallas, Texas (214-902-0300)	CHAIN O	of ZUSTODY	a, Texas (432-563-1800) ss, Georgia (770-449-8800)	Lakeland, Florida (863-646-8526) Tampa, Florida (813-620-2000)
Service Center - San Antonio, Texas (210-509-3334)	www.xenco.c	OIM Xenco Q	uote # Xenco Job #	
Client / Reporting Information	Drofoat Information		Analytical Information	Matrix Codes
Company Name/Branch:	Project Name/Number: 0746	2		A= Air
Company Address: 21355 LCop256 West	Project Location: CVD #246			S = Sol/Sed/Solid GW =Ground Water
Email: Phone No:	Invoice To: New	Mexico		P = Product SW - Surface water
432-686-0686				Str = Studge WW= Waste Water
Chris Knight I Jake Feren	2 PO Number:	S		W = Wipe 0 = 0il
Sampless Malle John Fergerson		de		WW= Waste Water
No. Field ID / Point of Collection	Collection	Zn of preserved bottles		
1074635-JMF-588 10	UT Date Time Matrix bottles X	Na HN H2 Na Na ME X NC		Field Comments
2 074635-JME-SB8 19	4/14/14 1545 5 1	× 1		
3 674635 - JMF- SB8 2	5 4/14/14 1550 S 1	×		
4 074635-JMF-588 3	5 H/H/H 1555 5 1	XX		
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Same Day TAT 5 Day TAT	Level II Std QC	Level IV (Full Data Pkg /raw data)		
Next Day EMERGENCY	Level III Std QC+ Forms	TRRP Level IV		
2 Day EMERGENCY	Level 3 (CLP Forms)	UST/RG -411		
3 Day EMERGENCY	TRRP Checklist			
TAT Starts Day received by Lab, if received by 3:00 pr			FED-EX / UPS: Tracking #	
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5 lotice: Signature of this document and relinquishment of samples constitutes a valid p	5 Inchase order from client company to XENCO Laboratorie	and its affiliates, su	bcontractors and assigns XENCO	bcontractors and assigns XENCO's standard terms and conditions of service unless

XENCO		CHAIN OH	^c CUSTOD	Y		
Setting the Standard since 1990						
Stafford, Texas (281-240-4200)				Odessa, Texas (432-563-	-1800) Lak	celand, Florida (863-646-8526)
Dallas, Texas (214-902-0300)				Norcross, Georgia (770-4	449-8800) Tan	npa, Florida (813-620-2000)
Service Center - San Antonio, Texas (210-509-3334)		www.xenco.con		Xenco Quote #	Xenco Job #	
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Company Name / Branch:	Project N	Lame/Number: 07463	้า			A= Air S = Soil/Sed/Solid
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1 074635-JMF-SB7	0 4/15/14	1000 5 1		×		
2 074635-JMF-5B7	HIKI/H S	1 5 5001		×		
3 074635-JMF-587	NO WISHH	1 5 0101		×		
4 074635 - JMF - 587	h/s1/4 21	1015 5 1		×		
5 074635-JMF-587	25 4/15/M	1020 5 1		×		
6 074635 - JMF-5137	35 4/15/14	1025 5 1		×		
7 074635 - JMF - SB4	0 4/15/14	1045 5 1		×		
8 074635-JMF-SB4	5 4/15/14	1050 5 1		×		
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Turnaround Time (Business days)		Data Deliverable Inf	ormation		Notes:	
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Next Day EMERGENCY		Level III Std QC+ Forms	TRRP Level IV			
2 Day EMERGENCY Contract TAT		Level 3 (CLP Forms)	UST / RG -411			
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Notice: Signature of this document and relinquishment of samples constitutes a va	alid purchase order from	client company to XENCO Laboratories a	ind its affiliates, subcontractors and a	ssigns XENCO's standard terms and	I conditions of service unless previ	lously neglotiated under a fully executed client contract.

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Setting the Standard since 1990 Satisford, Texas (281-240-4200) Odessa, Texas (232-563-1800) Lakeland, Florida (863-545-5526) Dallas, Texas (281-240-4200) Norcross, Caorgia (770-443-8800) Tampa, Florida (863-545-5526) Dallas, Texas (210-509-3334) WWW.xenco.com Xemoo Quole # Service Center - San Antonio, Texas (210-509-3334) WWW.xenco.com Xemoo Quole # Client / Reporting Information Project Name/Number: 07-14(2, 3, 55 Company Name/B Franch: Project Name/Number: 07-14(2, 3, 55 Company Address: 21355 Loop 2.50 Wesst Project Name/Number: 07-14(2, 3, 55 Company Address: 21355 Loop 2.50 Wesst Project Name/Number: 07-14(2, 3, 55 Company Address: 21355 Loop 2.50 Wesst Project Name/Number: 07-14(2, 3, 55 Switz = Soul/Sed/So Switz = Soul/Sed/So Switz = Soul/Sed/So Switz = Soul/Sed/So Switz = Suitz = Switz = Soul/Sed/So Project Name/Number: 07-14(1, 3, 55 Switz = Soul/Sed/So Switz = Switz	V = Wipe O = Oil		es	nber:	EVENZ PO Nur	roject Contact: Chris Knight / Jake 1
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Setting the Standard since 1990		Page 🖌 Of	7		
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Company Name / Branch:	Project N	Vame/Number:074635			A= Air S = Soil/Sed/Solid
Company Address: 21355 6000 250 We	St Project Lo	ocation: A HIN HOLL			GW =Ground Water
Midland, TX 79703	LE.	Courty, New Ma	Exico		P = Product
1227 - C. 2/ 60	01	ŝ			SW = Studge
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No. Field ID / Point of Collection	Sample	d 4# 2 Cl aOH/Zn cetate	NO3 2SO4 aOH aHSO4 IEOH ONE		
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2 074635 JMF- 582	hilsila S	1320 5 1	XX		
3 074635 -JMF- 582	10 4/15/14	1325 5 1	××		
4 074635-JMF- 5B2	15 Wishi	1330 5 1	××		
5 074635-JMF-SB2	25 4/5/14	1335 5 1	××		
6 074635-JMF-SB2	hilsign 52.	1 5 0461	×××		
7 074635-JM1 SB1	milsily 0	1405 5 1	××		
: 074635-JMF-581	5 4/15/14	1410 5 1	XX		
, 074635 -JMF - SBI	15 11/15/14	1420 5 1	XX		
10 074635-JMF-5B1	HISIN 52	1435 5 1	XXX		
Turnaround Time (Business days)		Data Deliverable Informa	ion	Notes:	
Same Day TAT 5 Day TAT		Level II Std QC	Level IV (Full Data Pkg /raw	data)	
Next Day EMERGENCY		Level III Std QC+ Forms	TRRP Level IV		
2 Day EMERGENCY		Level 3 (CLP Forms)	UST / RG -411		
3 Day EMERGENCY		TRRP Checklist			
TAT Starts Day received by Lab, if received by 3:00	pm			FED-EX / UP	S: Tracking #
Feinduisted by Sampler:	AUST BE DOCUMENTE	Received By:	OSSESSION, INCLUDING COURIER Relinquished By:	Date Time:	Received By:
Relinquisher by:	ate Time:	Received By:	Pelinquíshed By:	Date Time: 10: 20	- Received By: 4
Felinquished by:	ate Time:	Received By:	Custody Seal #	Preserved where applicable	On the Cooler Temp. Thermo. Corr. Factor
Notice: Signature of this document and relinquishment of samples constitutes a value of the second s	alid purchase order from	1 client company to XENCO Laboratories and its	Affiliates, subcontractors and assigns >	ENCO's standard terms and conditio	ons of service unless previously neglotiated under a fully executed client contra

Page 30 of 32



Client: Conestoga Rovers & Associates

XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient Date/ Time Received: 04/17/2014 10:20:00 AM **Temperature Measuring device used :** Work Order #: 483548 Comments Sample Receipt Checklist 1 #1 *Temperature of cooler(s)? #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 Sample instructions complete on Chain of Custody? Yes #9 Any missing/extra samples? No #10 Chain of Custody signed when relinquished/ received? Yes #11 Chain of Custody agrees with sample label(s)? Yes #12 Container label(s) legible and intact? Yes #13 Sample matrix/ properties agree with Chain of Custody? Yes #14 Samples in proper container/ bottle? Yes #15 Samples properly preserved? Yes #16 Sample container(s) intact? Yes #17 Sufficient sample amount for indicated test(s)? Yes #18 All samples received within hold time? Yes #19 Subcontract of sample(s)? Yes #20 VOC samples have zero headspace (less than 1/4 inch bubble)? N/A #21 <2 for all samples preserved with HNO3,HCL, H2SO4? N/A #22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH? N/A

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

Analyst:

PH Device/Lot#:

Date: 04/18/2014

Checklist completed by: Mmg Hoak Kelsey Brooks Checklist reviewed by: Mmg Hoak

Date: 04/18/2014

Analytical Report 514049

for GHD Services, INC- Midland

Project Manager: Jacob Ferenz

CEMC- CVU#226

074635

01-SEP-15

Collected By: Client





12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122): Texas (T104704215-15-19), Arizona (AZ0765), Florida (E871002), Louisiana (03054) Oklahoma (9218)

Xenco-Atlanta (EPA Lab Code: GA00046): Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135) Texas (T104704477), Louisiana (04176), USDA (P330-07-00105)

> Xenco-Lakeland: Florida (E84098) Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX) Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX) Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757) Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757) Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)



01-SEP-15

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

Reference: XENCO Report No(s): **514049** CEMC- CVU#226 Project Address: NM

Jacob Ferenz:

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) 514049. 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. 514049 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Ams boah

 Kelsey Brooks

 Project Manager

 Recipient of the Prestigious Small Business Administration Award of Excellence in 1994. Certified and approved by numerous States and Agencies.

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

Houston - Dallas - Odessa - San Antonio - Tampa - Lakeland - Atlanta - Phoenix - Oklahoma - Latin America



Sample Cross Reference 514049



GHD Services, INC- Midland, Midland, TX

CEMC- CVU#226

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS-082015-JR-SB-13 0'	S	08-20-15 09:45	- 0 ft	514049-001
SS-082015-JR-SB-13 5'	S	08-20-15 09:50	- 5 ft	514049-002
SS-082015-JR-SB-13 10'	S	08-20-15 09:55	- 10 ft	514049-003
SS-082015-JR-SB-13 15'	S	08-20-15 10:00	- 15 ft	514049-004
SS-082015-JR-SB-13 20'	S	08-20-15 10:05	- 20 ft	514049-005
SS-082015-JR-SB-13 25'	S	08-20-15 10:10	- 25 ft	514049-006
SS-082015-JR-SB-13 35'	S	08-20-15 10:15	- 35 ft	514049-007
SS-082015-JR-SB-12 0'	S	08-20-15 10:20	- 0 ft	514049-008
SS-082015-JR-SB-12 5'	S	08-20-15 10:25	- 5 ft	514049-009
SS-082015-JR-SB-12 10'	S	08-20-15 10:30	- 10 ft	514049-010
SS-082015-JR-SB-12 15'	S	08-20-15 10:35	- 15 ft	514049-011
SS-082015-JR-SB-12 20'	S	08-20-15 10:40	- 20 ft	514049-012
SS-082015-JR-SB-12 25'	S	08-20-15 10:45	- 25 ft	514049-013
SS-082015-JR-SB-12 35'	S	08-20-15 10:50	- 35 ft	514049-014
SS-082015-JR-SB-15 0'	S	08-20-15 10:55	- 0 ft	514049-015
SS-082015-JR-SB-15 5'	S	08-20-15 11:00	- 5 ft	514049-016
SS-082015-JR-SB-15 10'	S	08-20-15 11:05	- 10 ft	514049-017
SS-082015-JR-SB-15 15'	S	08-20-15 11:10	- 15 ft	514049-018
SS-082015-JR-SB-15 20'	S	08-20-15 11:15	- 20 ft	514049-019
SS-082015-JR-SB-15 25'	S	08-20-15 11:20	- 25 ft	514049-020
SS-082015-JR-SB-15 35'	S	08-20-15 11:25	- 35 ft	514049-021
SS-082015-JR-SB-14 0'	S	08-20-15 11:30	- 0 ft	514049-022
SS-082015-JR-SB-14 5'	S	08-20-15 11:35	- 5 ft	514049-023
SS-082015-JR-SB-14 10'	S	08-20-15 11:40	- 10 ft	514049-024
SS-082015-JR-SB-14 15'	S	08-20-15 11:45	- 15 ft	514049-025
SS-082015-JR-SB-14 20'	S	08-20-15 11:50	- 20 ft	514049-026
SS-082015-JR-SB-14 25'	S	08-20-15 11:55	- 25 ft	514049-027
SS-082015-JR-SB-14 35'	S	08-20-15 12:00	- 35 ft	514049-028
SS-082015-JR-SB-16 0'	S	08-20-15 14:05	- 0 ft	514049-029
SS-082015-JR-SB-16 5'	S	08-20-15 14:10	- 5 ft	514049-030
SS-082015-JR-SB-16 10'	S	08-20-15 14:15	- 10 ft	514049-031
SS-082015-JR-SB-16 15'	S	08-20-15 14:20	- 15 ft	514049-032
SS-082015-JR-SB-16 20'	S	08-20-15 14:25	- 20 ft	514049-033
SS-082015-JR-SB-16 30'	S	08-20-15 14:30	- 30 ft	514049-034
SS-082015-JR-SB-16 50'	S	08-20-15 14:35	- 50 ft	514049-035
SS-082015-JR-SB-16 70'	S	08-20-15 14:40	- 70 ft	514049-036
SS-082015-JR-SB-16 90'	S	08-20-15 14:45	- 90 ft	514049-037



CASE NARRATIVE



Client Name: GHD Services, INC- Midland Project Name: CEMC- CVU#226

Project ID: 074635 Work Order Number(s): 514049 Report Date:01-SEP-15Date Received:08/21/2015

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Project Location: NM

Certificate of Analysis Summary 514049

GHD Services, INC- Midland, Midland, TX

Project Name: CEMC- CVU#226



Date Received in Lab: Fri Aug-21-15 04:15 pm

Report Date: 01-SEP-15

0								Project Ma	nager:	Kelsey Brooks	5		
	Lab Id:	514049-0	01	514049-0	02	514049-0	03	514049-0	004	514049-0	05	514049-0	06
Analysis Paguested	Field Id:	SS-082015-JR-5	SB-13 0'	SS-082015-JR-5	SB-13 5'	SS-082015-JR-S	B-13 10'	SS-082015-JR-S	B-13 15'	SS-082015-JR-S	B-13 20'	SS-082015-JR-S	B-13 25'
Anaiysis Kequesiea	Depth:	0 ft		5 ft		10 ft		15 ft		20 ft		25 ft	
	Matrix:	SOIL											
	Sampled:	Aug-20-15 (09:45	Aug-20-15 ()9:50	Aug-20-15 0	9:55	Aug-20-15	10:00	Aug-20-15	10:05	Aug-20-15	10:10
Inorganic Anions by EPA 300/300.1	Extracted:	Aug-29-15	11:30	Aug-29-15	11:30	Aug-29-15 1	1:30	Aug-29-15	11:30	Aug-29-15	11:30	Aug-29-15	11:30
	Analyzed:	Aug-30-15	06:06	Aug-30-15 (06:29	Aug-30-15 ()6:52	Aug-30-15	07:14	Aug-30-15 (08:00	Aug-30-15 (38:22
	Units/RL:	mg/kg	RL										
Chloride		28300	1220	260	21.2	527	28.0	599	46.2	613	27.8	1180	61.2
Percent Moisture	Extracted:												
	Analyzed:	Aug-28-15	17:30	Aug-28-15	17:30	Aug-28-15 1	7:30	Aug-28-15	17:30	Aug-28-15	17:30	Aug-28-15	17:30
	Units/RL:	%	RL										
Percent Moisture		17.8	1.00	5.56	1.00	28.7	1.00	13.3	1.00	28.1	1.00	34.7	1.00

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Huns Boah

Kelsey Brooks Project Manager



Project Location: NM

Certificate of Analysis Summary 514049

GHD Services, INC- Midland, Midland, TX

Project Name: CEMC- CVU#226



Date Received in Lab: Fri Aug-21-15 04:15 pm

Report Date: 01-SEP-15

0								Project Ma	nager:	Kelsey Brooks	5		
	Lab Id:	514049-0	007	514049-0	08	514049-0	09	514049-0	10	514049-0	11	514049-0	12
Analysis Paguested	Field Id:	SS-082015-JR-5	SB-13 35'	SS-082015-JR-S	SB-12 0'	SS-082015-JR-S	B-12 5'	SS-082015-JR-S	B-12 10'	SS-082015-JR-S	B-12 15'	SS-082015-JR-S	B-12 20'
Analysis Kequestea	Depth:	35 ft		0 ft		5 ft		10 ft		15 ft		20 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Aug-20-15	10:15	Aug-20-15	10:20	Aug-20-15 1	0:25	Aug-20-15	10:30	Aug-20-15	10:35	Aug-20-15 1	10:40
Inorganic Anions by EPA 300/300.1	Extracted:	Aug-29-15	11:30	Aug-29-15	11:30	Aug-29-15 1	1:30	Aug-29-15	11:30	Aug-29-15	11:30	Aug-29-15 1	11:30
	Analyzed:	Aug-30-15	08:45	Aug-30-15 ()9:08	Aug-30-15 1	0:16	Aug-30-15	10:39	Aug-30-15	11:24	Aug-30-15 1	11:47
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		385	16.0	3.03	2.11	5.02	2.13	6.76	2.08	4.19	2.11	ND	2.15
Percent Moisture	Extracted:												
	Analyzed:	Aug-28-15	17:30	Aug-28-15	17:30	Aug-28-15 1	7:30	Aug-28-15	17:30	Aug-28-15	17:30	Aug-28-15 1	17:30
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		37.5	1.00	5.19	1.00	6.31	1.00	4.03	1.00	5.37	1.00	6.84	1.00

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Huns Boah

Kelsey Brooks Project Manager



Project Location: NM

Certificate of Analysis Summary 514049

GHD Services, INC- Midland, Midland, TX

Project Name: CEMC- CVU#226



Date Received in Lab: Fri Aug-21-15 04:15 pm

Report Date: 01-SEP-15

								Project Ma	nager:	Kelsey Brook	s		
	Lab Id:	514049-0	013	514049-0	014	514049-0	15	514049-0	016	514049-0	017	514049-0	018
Analysis Paguastad	Field Id:	SS-082015-JR-5	SB-12 25'	SS-082015-JR-S	B-12 35'	SS-082015-JR-S	B-15 0'	SS-082015-JR-	SB-15 5'	SS-082015-JR-S	SB-15 10'	SS-082015-JR-S	SB-15 15'
Analysis Kequestea	Depth:	25 ft		35 ft		0 ft		5 ft		10 ft		15 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Aug-20-15	10:45	Aug-20-15	10:50	Aug-20-15	0:55	Aug-20-15	11:00	Aug-20-15	11:05	Aug-20-15	11:10
Inorganic Anions by EPA 300/300.1	Extracted:	Aug-29-15	11:30	Aug-30-15	16:00	Aug-30-15	6:00	Aug-30-15	16:00	Aug-30-15	16:00	Aug-30-15	16:00
	Analyzed:	Aug-30-15	12:10	Aug-30-15	17:48	Aug-30-15	8:34	Aug-30-15	18:56	Aug-30-15	19:19	Aug-30-15	19:42
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		ND	2.09	3.49	2.20	45.9	10.4	99.1	11.2	27.1	2.24	17.1	2.20
Percent Moisture	Extracted:												
	Analyzed:	Aug-28-15	17:30	Aug-28-15	17:30	Aug-28-15	7:30	Aug-28-15	17:30	Aug-28-15	17:30	Aug-28-15	17:30
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		4.43	1.00	9.20	1.00	3.87	1.00	10.8	1.00	10.5	1.00	9.04	1.00

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Kms Boah

Kelsey Brooks Project Manager



Project Location: NM

Certificate of Analysis Summary 514049

GHD Services, INC- Midland, Midland, TX

Project Name: CEMC- CVU#226



Date Received in Lab: Fri Aug-21-15 04:15 pm

Report Date: 01-SEP-15

								Project Mai	nager:	Kelsey Brooks	3		
	Lab Id:	514049-0	019	514049-0	020	514049-0	21	514049-0	22	514049-0	23	514049-0	024
Analysis Paguested	Field Id:	SS-082015-JR-	SB-15 20'	SS-082015-JR-S	SB-15 25'	SS-082015-JR-S	B-15 35'	SS-082015-JR-S	SB-14 0'	SS-082015-JR-5	SB-14 5'	SS-082015-JR-5	SB-14 10'
Analysis Kequestea	Depth:	20 ft		25 ft		35 ft		0 ft		5 ft		10 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Aug-20-15	11:15	Aug-20-15	11:20	Aug-20-15	11:25	Aug-20-15	1:30	Aug-20-15	1:35	Aug-20-15	11:40
Inorganic Anions by EPA 300/300.1	Extracted:	Aug-30-15	16:00	Aug-30-15	16:00	Aug-30-15	16:00	Aug-30-15	16:00	Aug-30-15	16:00	Aug-30-15	16:00
	Analyzed:	Aug-30-15	20:04	Aug-30-15	21:12	Aug-30-15 2	21:35	Aug-30-15 2	21:57	Aug-30-15 2	22:20	Aug-30-15	22:43
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		17.9	2.21	13.8	2.16	12.1	2.12	79.5	10.8	342	21.0	186	12.3
Percent Moisture	Extracted:												
	Analyzed:	Aug-28-15	17:30	Aug-28-15	17:30	Aug-31-15	17:30	Aug-31-15	17:30	Aug-31-15	17:30	Aug-31-15	17:30
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		9.58	1.00	7.44	1.00	5.83	1.00	7.10	1.00	4.70	1.00	18.9	1.00

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Huns Boah

Kelsey Brooks Project Manager



Project Location: NM

Certificate of Analysis Summary 514049

GHD Services, INC- Midland, Midland, TX

Project Name: CEMC- CVU#226



Date Received in Lab: Fri Aug-21-15 04:15 pm

Report Date: 01-SEP-15

								Project Mar	nager:	Kelsey Brooks	6		
	Lab Id:	514049-0)25	514049-0	26	514049-0	27	514049-0	28	514049-0	29	514049-0	030
Analysis Paguastad	Field Id:	SS-082015-JR-S	SB-14 15'	SS-082015-JR-S	B-14 20'	SS-082015-JR-S	B-14 25'	SS-082015-JR-S	B-14 35'	SS-082015-JR-5	SB-16 0'	SS-082015-JR-5	SB-16 5'
Analysis Kequesieu	Depth:	15 ft		20 ft		25 ft		35 ft		0 ft		5 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Aug-20-15	11:45	Aug-20-15 1	1:50	Aug-20-15 1	1:55	Aug-20-15	12:00	Aug-20-15	14:05	Aug-20-15	14:10
Inorganic Anions by EPA 300/300.1	Extracted:	Aug-30-15	16:00	Aug-30-15 1	16:00	Aug-30-15 1	6:00	Aug-30-15	16:00	Aug-30-15	16:00	Aug-30-15	16:00
	Analyzed:	Aug-30-15	23:28	Aug-30-15 2	23:51	Aug-31-15 (00:13	Aug-31-15	00:36	Aug-31-15)1:44	Aug-31-15	02:07
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		593	21.3	235	11.4	51.6	2.11	13.0	2.08	10.7	10.3	248	10.3
Percent Moisture	Extracted:												
	Analyzed:	Aug-31-15	17:30	Aug-31-15 1	17:30	Aug-31-15 1	7:30	Aug-31-15	17:30	Aug-31-15	17:30	Aug-31-15	17:30
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		6.16	1.00	12.1	1.00	5.15	1.00	4.02	1.00	2.80	1.00	3.19	1.00

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Huns Boah

Kelsey Brooks Project Manager



Project Location: NM

Certificate of Analysis Summary 514049

GHD Services, INC- Midland, Midland, TX

Project Name: CEMC- CVU#226



Date Received in Lab: Fri Aug-21-15 04:15 pm

Report Date: 01-SEP-15

								Project Ma	nager:	Kelsey Brooks	3		
	Lab Id:	514049-0	031	514049-0	32	514049-03	33	514049-0	034	514049-0	35	514049-0)36
Analysis Paguastad	Field Id:	SS-082015-JR-S	B-16 10'	SS-082015-JR-S	B-16 15'	SS-082015-JR-SI	B-16 20'	SS-082015-JR-S	B-16 30'	SS-082015-JR-S	B-16 50'	SS-082015-JR-S	B-16 70'
Analysis Kequesiea	Depth:	10 ft		15 ft		20 ft		30 ft		50 ft		70 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Aug-20-15	14:15	Aug-20-15	14:20	Aug-20-15 1	4:25	Aug-20-15	14:30	Aug-20-15	14:35	Aug-20-15	14:40
Inorganic Anions by EPA 300/300.1	Extracted:	Aug-30-15	16:00	Aug-30-15	16:00	Aug-30-15 1	6:00	Aug-31-15	14:30	Aug-31-15	14:30	Aug-31-15	14:30
	Analyzed:	Aug-31-15	02:29	Aug-31-15 (02:52	Aug-31-15 0	3:15	Aug-31-15	23:01	Aug-31-15 2	23:46	Sep-01-15 (00:08
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		10.9	2.15	9.07	2.27	3.24	2.25	5.04	2.15	2.19	2.09	ND	2.12
Percent Moisture	Extracted:												
	Analyzed:	Aug-31-15	17:30	Aug-31-15	17:30	Aug-31-15 1	7:30	Aug-31-15	17:30	Aug-31-15	17:30	Aug-31-15	17:30
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		7.19	1.00	11.9	1.00	11.1	1.00	6.93	1.00	4.09	1.00	5.48	1.00

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Huns Boah

Kelsey Brooks Project Manager



Project Location: NM

Certificate of Analysis Summary 514049

GHD Services, INC- Midland, Midland, TX

Project Name: CEMC- CVU#226



Date Received in Lab:Fri Aug-21-15 04:15 pmReport Date:01-SEP-15

Project Manager: Kelsey Brooks

	Lab Id:	514049-037			
Analysis Paguastad	Field Id:	SS-082015-JR-SB-16 90'			
Analysis Kequestea	Depth:	90 ft			
	Matrix:	SOIL			
	Sampled:	Aug-20-15 14:45			
Inorganic Anions by EPA 300/300.1	Extracted:	Aug-31-15 14:30			
	Analyzed:	Sep-01-15 00:31			
	Units/RL:	mg/kg RL			
Chloride		2.13 2.02			
Percent Moisture	Extracted:				
	Analyzed:	Aug-31-15 17:30			
	Units/RL:	% RL			
Percent Moisture		1.04 1.00			

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

Huns Roah

Kelsey Brooks Project Manager



Flagging Criteria



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

MDL Method Detection Limit	SDL Sample Detection Limit	LOD Limit of Detection
PQL Practical Quantitation Limit	MQL Method Quantitation Limit	LOQ Limit of Quantitation

- **DL** Method Detection Limit
- NC Non-Calculable
- + NELAC certification not offered for this compound.
- * (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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(281) 240-4280

(214) 351-9139

(210) 509-3335


BS / BSD Recoveries



Project Name: CEMC- CVU#226

Work Order #: 514049							Proj	ject ID:	074635					
Analyst: JUM	D	ate Prepar	red: 08/29/202	15			Date A	nalyzed:	08/30/2015					
Lab Batch ID: 975769 Sample: 697375-1-1	BKS	Batcl	h#: 1					Matrix:	Solid					
Units: mg/kg		BLAN	K/BLANK	SPIKE /]	BLANK	PIKE DUPLICATE RECOVERY STUDY								
Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag			
Chloride	<2.00	50.0	49.6	99	50.0	50.0	100	1	90-110	20				
Analyst: JUM	D	ate Prepar	ed: 08/30/20	15			Date A	nalyzed: (08/30/2015					
Lab Batch ID: 975781 Sample: 697396-1-1	BKS	Batcl	h #: 1					Matrix:	Solid					
Units: mg/kg	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY													
Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag			
Chloride	<2.00	50.0	51.4	103	50.0	50.8	102	1	90-110	20				
Analyst: JUM	D	ate Prepar	ed: 08/31/202	15	+		Date A	nalyzed: ()8/31/2015	ł	·'			
Lab Batch ID: 975899 Sample: 697473-1-	BKS	Batcl	h #: 1					Matrix:	Solid					
Units: mg/kg	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY													
Inorganic Anions by EPA 300/300.1	Blank	Spike Added	Blank Spike	Blank	Spike	Blank Spike	Blk. Spk Dup.	RPD	Control Limits	Control Limits	Flag			
Analytes	[A]	[B]	Result [C]	%R [D]	[E]	Duplicate Result [F]	% R [G]	%	%R	%RPD				

Relative Percent Difference RPD = $200^{*}|(C-F)/(C+F)|$ Blank Spike Recovery [D] = $100^{*}(C)/[B]$ Blank Spike Duplicate Recovery [G] = $100^{*}(F)/[E]$ All results are based on MDL and Validated for QC Purposes



Form 3 - MS Recoveries

Project Name: CEMC- CVU#226



Work Order #: 514049							
Lab Batch #: 975769			Proj	ect ID: ⁰	74635		
Date Analyzed: 08/30/2015	Date Prepared: 08/2	29/2015	Α	analyst: J	UM		
QC- Sample ID: 514048-010 S	Batch #:	l	1	Matrix: S	oil		
Reporting Units: mg/kg	MAT	RIX / MA	ATRIX SPIKE	RECO	VERY STU	JDY	
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag	
Chloride	20.4	51.1	70.6	98	80-120	1	
Lab Batch #: 975769	20.1		/0.0	70	00 120		
Date Analyzed: 08/30/2015	Date Prepared: 08/2	29/2015	A	nalvst: J	UM		
OC- Sample ID: 514049-004 S	Batch #: 1	l	1	Matrix: S	oil		
Reporting Units: mg/kg	MAT	RIX / MA	ATRIX SPIKE	RECO	VERY STU	JDY	
Inorganic Anions by EPA 300	Parent Sample Result	Spike Added	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag	
Analytes	[A]	[B]					
Chloride	599	1150	1840	108	80-120		
Lab Batch #: 975781	÷.		· · · ·		<u>.</u>	·	
Date Analyzed: 08/30/2015	Date Prepared: 08/3	30/2015	Α	analyst: J	UM		
QC- Sample ID: 514049-014 S	Batch #:	l	I	Matrix: S	oil		
Reporting Units: mg/kg	MAT	RIX / MA	ATRIX SPIKE	RECO	VERY STU	JDY	
Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag	
Chloride	3.49	55.1	61.9	106	80-120	1	
Lab Batch #: 975781		1				<u> </u>	
Date Analyzed: 08/30/2015	Date Prepared: 08/3	30/2015	A	analyst: J	UM		
QC- Sample ID: 514049-024 S	Batch #: 1	l	I	Matrix: S	oil		
Reporting Units: mg/kg	MAT	RIX / MA	ATRIX SPIKE	RECO	VERY STU	JDY	
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag	
Chloride	186	308	504	103	80-120	<u> </u>	
	130	1 500	501	105	00 120	<u> </u>	

Matrix Spike Percent Recovery [D] = 100*(C-A)/BRelative Percent Difference [E] = 200*(C-A)/(C+B)All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit

XENCO	Form 3 - M	n 3 - MS Recoveries									
Laboratories Pro	ject Name: CEMC-	CVU#226	5		1ABORAT	JRY					
Work Order #: 514049											
Lab Batch #: 975899			Proj	ect ID: 0	74635						
Date Analyzed: 08/31/2015	Date Prepared: 0	8/31/2015	A	Analyst: J	UM						
QC- Sample ID: 514049-034 S	Batch #:	1]	Matrix: S	oil						
Reporting Units: mg/kg	MA	TRIX / MA	TRIX SPIKE	RECO	VERY STU	DY					
Inorganic Anions by EPA 300	Parent Sample Result	Spike Added	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag					
Analytes	[A]	[B]									
Chloride	5.04	53.7	58.4	99	80-120						
Lab Batch #: 975899											
Date Analyzed: 09/01/2015	Date Prepared: 0	8/31/2015	A	Analyst: J	UM						
QC- Sample ID: 514050-007 S	Batch #:	1]	Matrix: S	oil						
Reporting Units: mg/kg	MA	MATRIX / MATRIX SPIKE RECOVERY STUDY									
Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag					
Chloride	68.9	75.4	143	98	80-120						





Project Name: CEMC- CVU#226

Work Order #: 514049					
Lab Batch #: 975826			Project I	D: 074635	
Date Analyzed: 08/28/2015 17:30 Date	e Prepared: 08/28/201	5 Ana	lyst: WRU		
QC- Sample ID: 514049-001 D	Batch #: 1	Mat	t rix: Soil		
Reporting Units: %	SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	17.8	15.9	11	20	
Lab Batch #: 975826		•			
Date Analyzed: 08/28/2015 17:30 Date	e Prepared: 08/28/201	5 Ana	lyst: WRU		
QC- Sample ID: 514049-011 D	Batch #: 1	Mat	t rix: Soil		
Reporting Units: %	SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	5 37	4.91	9	20	
	5.57	4.91	9	20	
Lab Batch #: 9/3930	Propared 08/31/201	5 Ana	lvet•WRI]		
OC- Sample ID: 514049-021 D	Batch #: 1	- Ana Mai	t rix: Soil		
Reporting Units: %	SAMPLE	/SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	5.83	5.94	2	20	
Lah Batch #• 975936	<u> </u>	1	1	1	1
Date Analyzed: 08/31/2015 17:30 Date	e Prepared: 08/31/201	5 Ana	lyst: WRU		
QC- Sample ID: 514049-031 D	Batch #: 1	Mat	trix: Soil		
Reporting Units: %	SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	7.19	7.18	0	20	

Spike Relative Difference RPD 200 * $|\,(B\text{-}A)/(B\text{+}A)\,|$ All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit





Project Name: CEMC- CVU#226

Work Order #: 514049

Lab Batch #: 975939				Project I	D: 074635	
Date Analyzed: 08/31/2015 17:30	Date Prepar	ed: 08/31/2015	5 Anal	lyst:WRU		
QC- Sample ID: 514049-037 D	Batch	n#: 1	Mat	rix: Soil		
Reporting Units: %		SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture		Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte			[B]			
Percent Moisture		1.04	<1.00	NC	20	U
Lab Batch #: 975939						
Date Analyzed: 08/31/2015 17:30	Date Prepar	ed: 08/31/2015	5 Anal	lyst:WRU		
QC- Sample ID: 514050-014 D	Batch	n#: 1	Mat	rix: Soil		
Reporting Units: %		SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture		Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte			נטן			
Percent Moisture		6.59	6.60	0	20	

Spike Relative Difference RPD 200 * | (B-A)/(B+A) | All Results are based on MDL and validated for QC purposes. BRL - Below Reporting Limit

TAT Starts Day received by Lab, if received by 3:00 pm SAMPLE CUSTOP MUST B Pelinquished by Sampler: Sampler: Date Tir 3 Balinquished by: Balinquished by: Date Tir 5 Date Tir Notice: Signature of this document and relinquishment of samples constitutes a valid purce	Same Day TAT 5 Day TAT Next Day EMERGENCY X 7 Day TAT 2 Day EMERGENCY Contract TAT 3 Day EMERGENCY Contract TAT	2 SS - DB2015-UR - SB-13 5 3 SS - DB2015-UR - SB-13 16 4 SS - DB2015-UR - SB-13 15 5 SS - DB2015-UR - SB-13 15 6 SS - DB2015-UR - SB-13 16 7 SS - DB2015-UR - SB-13 26 8 SS - DB2015-UR - SB-13 26 9 SS - DB2015-UR - SB-13 35 9 SS - DB2015-UR - SB-12 00 9 SS - DB2015-UR - SB-12 100 10 SS - DB2015-UR - SB-12 100 Turnaround Time (Bueiness days)	Company Name / Branch: Company Name / Branch: Company Address: 1755 W1 Hth gtbn 71., St. , Email: SK Phone No: Jak Project Contact: Jak C	Setting the Standard since 1990 Stafford, Texas (281-240-4200) Dallas, Texas (214-902-0300) Service Center - San Antonio, Texas (210-509-3334)
EDOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY FED-EX / UPS: Tracking # me: Received By: Page Time: 1445 1 2 1445 1 1445 1 1445 1 1445 1 1445 1 14 1 14 1 14 1 15 1 14 1 14 1 14 1 15 1 16 1 17 1 18 1 19 1 19 1 19 1 19 1 10 1 10 1 11 1 11 1 11 1 11 1 11 1 11 1 11 1 11 1 11 1 12 1 14 1 15 1 16 1	Level II Std QC Level IV (Full Data Pkg /raw data) Sol SON Level III Std QC+ Forms TRRP Level IV TRRP Level IV Level 3 (CLP Forms) UST / RG -411 UST / RG -411	Image: Solution of the second seco	Project Information A= Air Softwoject Location: MC, DTH, 35 Softwoject Location: MU-AUU Invoice To: WU-AUU PO Number: NUL-AUU PO Number: Number of preserved bottles Online time Nacetate Will Date HN304 Will Date HN304 Will Date NoNe Vill Date HN304 HN204 NoNe Field Comments Field Comments	CHAIN OF age L of L o

3 Pelinquished by: Date 5 5 Date Notice: Signature of this document and relinquishment of samples constitutes a valid State	1 J. A. 81. Berlinguished by: Dat	Relipqvisted by Sampler: Dat	TAT Starts Day received by Lab, if received by 3:00 p	3 Day EMERGENCY	2 Day EMERGENCY Contract TAT	Next Day EMERGENCY	Same Day TAT 5 Day TAT	Turnaround Time (Business days)	10 SS-082015-JR-SB-15	· 55-062015-JR-SB-15	· SS-082015-JR-SB-15	7 SS-082015-JR-SB-15	· SS-082015-JR-SB-15	5 SS-082015-JR-SB-15	4 55-062015-JR-SB-12	3 JS-DEADIS-JK-SB-12	2 JS-082015-JK-SB-12 4	1 35-082015-JR-SB-12		No. Field ID / Point of Collection	ADIN ATTAN	Samplers's Name: Jon A. G. O. A. A.	Project Contact:	Jack Ferenz@and.com 3312	Email: AND Dallas TX 7523	Company Address: 1755 WI HINGTON PL. St	Company Name / Branch:		Service Center - San Antonio, Texas (210-509-3334)		Dallon Torono (201-240-4200)	Setting the Standard since 1990	LABORATORIES	
e Time:	e Time: Received By: Relinquished By:	ST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COUI e Time: Received By: / Relinquished By:	n	TRRP Checklist	Level 3 (CLP Forms) UST / RG -411	Level III Std QC+ Forms TRRP Level IV	Level II Std QC Level IV (Full Data Pkg	Data Deliverable Information	35' Blad 11 20 S 1	0' 8a0 1115 S 1	5' 8/201110 S 1	0' 8/a0 1105 S 1	5' Blac 1100 S 1	0' 8/20 1055 S 1	35' 8/20 1050 S 1	15' ⁸ /ac 1045 S 1	NO' BLAG ICHOS I	15' Blab 1035 S 1	Depth Date Time Matrix bottles HCI NaOH/Zr Acetate HN03 H2SO4 NaOH VAOH VAOH VAOH VAOH VAOH VAOH VAOH VA	Collection Number of preserved bottles		PO Number:		Invoice Io:	4 CNN-delo	500 Project Location	Project Information		<u>www.xenco.com</u>				Page A of 4	CHAIN OF CITCHON
Preserved where applicable On Joe Cooler Temp. Thermo. Corr. Factor	Date Time: KIS Received By:	IRIER DELIVERY					J /raw data) S.e. SSDW	Notes:										Held Comments			WW= Waste Water	0=0il	WW= Waste Water	SW = Stridage water	DW = Diroking Water	A= Air S= Soi/Sed/Solid		Analytical Information Matrix Codes	Xenco Guote # Xenco Job # SIA0A0	Norcross, Georgia (770-449-8800) Tampa, Florida (813-620-2000)	Odessa, Texas (432-563-1800) Lakeland, Florida (863-646-8526)		X	

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Relinquished by: Dat 5 5 Notice: Signature of this document and relinquishment of samples constitutes a valid	3	Bolymiated hard	Relinguished by Sampler: Dat	TAT Starts Day received by Lab, if received by 3:00 pi	3 Day EMERGENCY	2 Day EMERGENCY	Next Day EMERGENCY	Same Day TAT 5 Day TAT	Turnaround Time (Business days)	10 SS-082015-JR-SB-16	· SS-082015-JR-SB-110	" SS-DBADIS-UR-SR-14	· US-UDAUIS-UK-SD-14	5 JS-082015-JK-JK-14	4 SS-082015-JR-SB-14	3 SS-082045-JR-SB-14	2 SS-082015-UR-SB-14 1	1 SS-082015-JR-SB-15	No. Field ID / Point of Collection S		Samplers's Name: Jonnifer Riode	Project Contact: Jacob Ferenz	Jake ferenz@ghd.com 331-8	1755 Withington Place, Str. 50	Company Address: ETHTY- IZallas	Client / Reporting Information		Service Center - San Antonio, Texas (210-509-3334)	Dallas, Texas (214-902-0300)	Stafford,Texas (281-240-4200)	Setting the Standard since 1990	LABORATORIES
e Time: Received By: 5 purchase order from client company to XENCO Laboratories and	e nme: Heceived By:	allo 1115 11 Carpon by	TIME: Received By:	3	TRRP Checklist	Level 3 (CLP Forms)	Level III Std QC+ Forms	Level II Std QC	Data Deliverable Inforr	5' BLAD HIND S 1	Sab Why S I	5 CUCH DAL 2	10 PAD WEE O I	I C CHILORD C	0' 8/ab 1140 S 1	5' Blav 1135 S 1	0' 8/20 1130 S 1	35' Blao 1125 S 1	ample # of # of # of # OH/Zn Acetate	Collection		PO Number:		CNU-dub	CEMC/07463	Project Information		www.xenco.com				CHAIN OF
s affiliates, subcontractors and assigns XENCO's standard terms and conditions and the standard terms and conditions affiliates and the standard terms and conditions and the standard terms and conditions affiliates and standard terms and conditions and standard terms and conditions and terms and conditions are standard terms are standard terms and conditions are standard terms are standard t	Relinquished By: Date Time:	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	POSSESSION, INCLUDING COURIER DELIVERY	FED-EX / U		UST / RG -411	TRRP Level IV	Level IV (Full Data Pkg /raw data)	ation Notes:	4								××	HNO3 H2SO4 NaOH NaHSO4 MEOH NONE	ber of preserved bottles	ìd	es					Analytical Informat	Xenco Quote #	Norcross, Georgia (770-449-8)	Odessa, Texas (432-563-1800)		CUSTODY
4 On Ice Cooler Temp. Thermo. Corr. Factor Supervise unless previously neglibilated under a fully executed client contract.	Received By:	Received By: 2		PS: Tracking #				LSOW											Field Common's	ww=waste water		W = Wipe	SW = Surface water SL = Sludge	GW =Ground Water DW = Drinking Water P = Product	A= Air S = Soil/Sed/Solid		tion Matrix Codes	Xenco Job# SIAGAG	800) Tampa, Florida (813-620-2000)) Lakeland, Florida (863-646-8526)		

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2. 4 unless previously neglotilated under a fully executed client contract.	itandard terms and conditions of service	affiliates, subcontractors and assigns XENCO's s	5 srder from client company to XENCO Laboratories and its :	of samples constitutes a valid purchase o	5 Notice: Signature of this document and relinquishment
On lee Cooler Temp Thermo Corr Factor	ved where applicable (4 Custody Seal # Preser	3 Received By:	Date Time:	3 Relinguished by:
¥:	Date Time: Received By	Relinquished By:	Received By:	Date Time:	Rélinquished by
iy:	Date Time: LIS Received By	Relinquished By:	HIS Received By:	Date Time:	Refinquished by Sempler:
g #	FED-EX / UPS: Tracking	OSSESSION, INCLUDING COURIER DELIVER	JUMENTED BELOW EACH TIME SAMPLES CHANGE P	if received by 3:00 pm	TAT Starts Day received by Lab,
			TRRP Checklist		3 Day EMERGENCY
		UST/RG-411	Level 3 (CLP Forms)	Contract TAT	2 Day EMERGENCY
		TRRP Level IV	Level III Std QC+ Forms	X7 Day TAT	Next Day EMERGENCY
SOW	Ser Si	Level IV (Full Data Pkg /raw data)	Level II Std QC	5 Day TAT	Same Day TAT
	Notes:		Data Deliverable Informat		10 Turnaround Time (Business days)
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		4	ad 1445 S I	SB-16 90'8	7 SS-082015-JR-
			lau 1440 S I	SB-16 70' 8	· SS-082015-JR-
			ao 1435 S 1	SB-16 50' 8	5 SS-082015-JR-2
			120 S 1	SB-16 30' B	4 SS-082015-JR-
			lav 1425 S 1	SB-16 20' B	3 SS-082015-JR-
			lao Iyav S I	SB-16 151 8	2 SS-082015-JR-
		XX	lao 1415 S 1	SB-16 10 8	1 SS-082015-JR-
Field Comments		HNO3 H2SO4 NaOH NaHSO4 MEOH NONE	Date Time Matrix bottles HCI NaOH/Zn Acctate	ection Sample Depth	No. Field ID / Point of Coll
WWW = WASIC WAIC		r of preserved bottles	ollection Numbe		
WW Waste Water		id.		Rioniel	Samplers's Name: Jonnifer
W = Wipe		es	O Number:	10D2	Project Contact: JACDH FCY
SL = Sludge WW= Waste Water				X. LOM 3315	Jake ferenz @gh
DW = Drinking Water P = Product			UNT-JUP	Phone No: 973-	Str. 500, Dallas
S = Soil/Sed/Solid GW =Ground Water			roject Location:	nation Place, P	Company Address: 1755 With
A= Air			Project Information	7-00-0 P	Client / Reporting Information Company Name / Branch:
Matrix Codes	Analytical Information				
* AAAA	# Xenco Job #	Xenco Quote	www.xenco.com	210-509-3334)	Service Center - San Antonio, Texas (
Tampa, Florida (813-620-2000)	Georgia (770-449-8800)	Norcross,			Dallas, Texas (214-902-0300)
Lakeland, Florida (863-646-8526)	exas (432-563-1800)	Odessa, T			Stafford, Texas (281-240-4200)
					Setting the Standard since 1990
			Page 4 of		LABORATORIES
		VICTOR			

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Work Order #: 514049

XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: GHD Services, INC- Midland Date/ Time Received: 08/21/2015 04:15:00 PM

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

Temperature Measuring device used :

:	Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	3.4	ŧ
#2 *Shipping container in good condition?	Yes	S
#3 *Samples received on ice?	Ye	S
#4 *Custody Seals intact on shipping contain	er/ cooler? N/A	4
#5 Custody Seals intact on sample bottles?	N/A	4
#6 *Custody Seals Signed and dated?	N/A	4
#7 *Chain of Custody present?	Yes	S
#8 Sample instructions complete on Chain of	Custody? Yes	S
#9 Any missing/extra samples?	No)
#10 Chain of Custody signed when relinquish	ned/ received? Yes	S
#11 Chain of Custody agrees with sample lab	pel(s)? Ye	S
#12 Container label(s) legible and intact?	Yes	S
#13 Sample matrix/ properties agree with Cha	ain of Custody? Yes	S
#14 Samples in proper container/ bottle?	Yes	S
#15 Samples properly preserved?	Yes	S
#16 Sample container(s) intact?	Yes	S
#17 Sufficient sample amount for indicated te	est(s)? Ye	S
#18 All samples received within hold time?	Yes	5
#19 Subcontract of sample(s)?	No)
#20 VOC samples have zero headspace (les	s than 1/4 inch bubble)? N/A	4
#21 <2 for all samples preserved with HNO3, samples for the analysis of HEM or HEM-SGT analysts.	HCL, H2SO4? Except for N/A which are verified by the	A
#22 >10 for all samples preserved with NaAs	O2+NaOH, ZnAc+NaOH? N/A	4

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

Analyst:

PH Device/Lot#:

Date: 08/23/2015

Checklist completed by: Murg Moah Kelsey Brooks Checklist reviewed by: Murg Moah Kelsey Brooks

Date: 08/25/2015