

Incident ID	nRM2023058280
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	95 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas not on an exploration, development, production, or storage site?	☐ Yes ☒ No

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

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

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

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

State of New Mexico
Oil Conservation Division

Page 4

Incident ID	nRM2023058280
District RP	
Facility ID	
Application ID	

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

Printed Name: Amy Barnhill Title: Waste and Water Specialist

Signature: _____ Date: _____

email: ABarnhill@chevron.com Telephone: 432-687-7108**OCD Only**

Received by: _____ Date: _____

Incident ID	nRM2023058280
District RP	
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Remediation Plan

Remediation Plan Checklist: Each of the following items must be included in the plan.

- ☒ Detailed description of proposed remediation technique
- ☒ Scaled sitemap with GPS coordinates showing delineation points
- ☒ Estimated volume of material to be remediated
- ☒ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- ☒ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

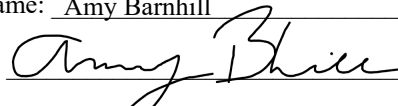
Deferral Requests Only: Each of the following items must be confirmed as part of any request for deferral of remediation.

- ☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- ☐ Extents of contamination must be fully delineated.
- ☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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

Printed Name: Amy Barnhill

Title: Waste and Water Specialist

Signature: 

Date: 3-21-21

email: ABarnhill@chevron.com

Telephone: 432-687-7108

OCD Only

Received by: Chad Hensley

Date: 05/05/2021

☒ Approved☐ Approved with Attached Conditions of Approval☐ Denied☐ Deferral ApprovedSignature: 

Date: 05/05/2021

Tracking Number: nRM2023058280
Delineation Report and Remediation Plan
Vacuum Glorietta West Unit #27
Produced Water Release
Lea County, New Mexico

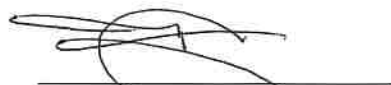
Latitude: N 32.805222°
Longitude: W -103.522848°

LAI Project No. 20-0107-20

March 15, 2021

Prepared for:
Chevron USA Inc.
6301 Deauville Blvd.
Midland, Texas 79706

Prepared by:
Larson & Associates, Inc.
507 North Marienfeld Street, Suite 202
Midland, Texas 79701



Mark J. Larson, P.G.
Certified Professional Geologist #10490



Robert Nelson
Sr. Geoscientist

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Table of Contents

1.0	INTRODUCTION.....	4
1.1	Background.....	4
1.2	Physical Setting.....	4
1.3	Remediation Action Levels.....	4
2.0	DELINEATION.....	5
3.0	REMEDICATION PLAN.....	5

Tables

Table 1	Delineation Soil Sample Analytical Data Summary
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Figures

Figure 1	Topographic Map
Figure 2	Aerial Map Showing Sample Locations
Figure 3	Aerial Map Showing Proposed Excavation Areas

Appendices

Appendix A	Chevron Spill Calculation
Appendix B	Karst Risk Potential
Appendix C	Laboratory Reports
Appendix D	Photographs

Tracking Number: nRM2023058280
Delineation Report and Remediation Plan
Chevron USA, Inc., Vacuum Glorietta West Unit #27
Produced Water Release
March 15, 2021

1.0 INTRODUCTION

Larson & Associates, Inc. (LAI), has prepared this delineation report and remediation plan on behalf of Chevron USA Inc. (Chevron) for submittal to the New Mexico Oil Conservation Division (OCD) District 1 for a produced water release at the Vacuum Glorietta West Unit #27 (Site) located in Unit I (NE/4, NW/4), Section 26, Township 17 South, Range 34 East in Lea County, New Mexico. The geodetic position is North 32.805222° and West -103.522848°. Figure 1 presents a topographic map. Figure 2 presents an aerial map.

1.1 Background

The release was discovered on July 29, 2020, due to corrosion in a buried steel injection line. Chevron reported that approximately 75.4 barrels (bbls) of produced water were released with approximately 30 bbls recovered. The affected area measures approximately 18,094 square feet. Chevron submitted the initial C-141 OCD and was assigned incident number nRM2023058280. Appendix A presents initial Chevron spill documentation.

1.2 Physical Setting

The physical setting is as follows:

- The surface elevation is approximately 4,016 feet above mean sea level (msl).
- The surface topography gradually slopes to the southeast.
- There are no surface water features within 1,000 feet of the Site.
- Karst data provided by the USGS describes the Site as “Low Risk” potential.
- The soils are designated as “Kimbrough-Lea complex”, consisting of 3 inches of gravelly loam, underlain by 7 inches of loam and 70 inches of cemented material, in descending order.
- The geology consists of the Pliocene age sand, silt, clay, gravel, and caliche (USGS).
- Groundwater was reported at approximately 95 feet below ground surface (bgs) in 1963.
- According to the New Mexico Office of the State Engineer (OSE) the nearest freshwater well is located approximately 0.16 miles or 830 feet southeast of the Site in Section 25, Township 17 South, Range 34, East.

Appendix B presents data depicting karst risk potential.

1.3 Remediation Action Levels

The following remediation standards are based on closure criteria for soils impacted by a release as presented in Table 1 of 19.15.29 NMAC:

- Benzene 10 mg/Kg
- BTEX 50 mg/Kg
- TPH 2,500 mg/Kg
- Chloride 10,000 mg/Kg

Further, 19.15.29.13 NMAC (Restoration, Reclamation and Re-Vegetation) requires the operator to restore the impacted surface area that existed prior to the release or their final land use.

Tracking Number: nRM2023058280
Delineation Report and Remediation Plan
Chevron USA, Inc., Vacuum Glorietta West Unit #27
Produced Water Release
March 15, 2021

2.0 DELINEATION

On September 2, 2020 and November 10, 2020, LAI personnel used a stainless-steel hand auger to collect soil samples from five (5) locations inside of the spill area (S-1 through S-5) and in each cardinal direction of the spill (S-6 and S-8 through S-10). The samples were collected between approximately 0.5 and 2.5 feet bgs depending on subsurface conditions. Sample location S-7 was omitted due to its location being within a historic drilling pit (circa 1993). The soil samples were delivered under chain of custody and preservation to Xenco Laboratories (Xenco) in Midland, Texas, which analyzed the samples for benzene, toluene, ethylbenzene, and xylenes (BTEX) and total petroleum hydrocarbons (TPH), including gasoline range organics (C6-C12), diesel range organics (>C12-C28) and oil range organics (>C28-C35), and chloride by EPA SW-846 Methods 8021B and 8015M, and 300.0, respectively. Figure 2 presents an aerial map showing the sample locations.

Benzene, BTEX, and TPH were below the OCD remediation standards in Table 1 (19.15.29 NMAC) of 10 milligrams per kilogram (mg/Kg), 50 mg/Kg, and 100 mg/Kg, respectively. Chloride exceeded the OCD delineation limit of 600 mg/Kg in the following samples:

Sample ID	Depth (Feet)	Chloride Concentration (mg/Kg)
S-1	0.5	2,120
S-2	0.5	12,800
S-3	0.5	10,600
S-4	0.5	18,900
S-5	0.5	7,950

On November 9 and 10, 2020, LAI personnel used a Geoprobe® 7822DT direct push rig to further delineate chloride at sample locations S-1 through S-5. Soil samples were collected at approximately one (1), three (3), five (5), and ten (10) feet bgs, depending on subsurface conditions. The one (1) foot interval samples were analyzed for BTEX, TPH, and chloride, subsequent intervals were only analyzed for chloride. Laboratory analysis confirmed chloride concentrations above NMOCd delineation limit of 600 mg/Kg at sample locations S-2 through S-5.

On January 26, 2021, Scarborough Drilling, Inc. (SDI), under supervision from LAI, utilized an air rotary rig to further delineate sample locations S-2 through S-5. Soil samples were collected at approximately 5, 10 and 15 feet bgs depending on location and were analyzed in the field for field delineation. The laboratory results demonstrate the release was delineated according to the OCD remediation and closure requirements (19.15.29.12 NMAC Table 1) for groundwater between 50 and 100 feet bgs. Table 1 presents the soil sample analytical data summary. Appendix C presents the laboratory report.

3.0 REMEDIATION PLAN

Chevron proposes the following remedial actions:

- Excavate soil from an area measuring approximately 2,017 square feet encompassing S-1 to approximately 1-foot bgs.

Tracking Number: nRM2023058280
Delineation Report and Remediation Plan
Chevron USA, Inc., Vacuum Glorietta West Unit #27
Produced Water Release
March 15, 2021

- Excavate soil from an area measuring approximately 2,971 square feet encompassing S-2 to approximately 2 feet bgs.
- Excavate soil from an area measuring approximately 14,112 square feet encompassing S-3 and S-4 to approximately 3 feet bgs.
- Excavate soil from an area measuring approximately 1,817 square feet encompassing S-5 to approximately 4.1 feet bgs.
- Collect five (5) point composite bottom and sidewall confirmation soil samples every 200 square feet of excavation and analyze for BTEX, TPH and chloride.
- Backfill excavations with clean caliche confirmed clean by laboratory analysis assuming achievement of OCD remediation levels; and
- Prepare report with photographs for submittal to OCD District 1.

Figure 3 presents the proposed excavation areas.

Tables

Table 1
Soil Sample Analytical Data Summary
Vacuum Glorietta West Unit #27
Lea County, New Mexico
North 32° 48' 18.75", West 103° 31' 23.51"

Page 1 of 2

Sample	Depth (Feet)	Collection Date	Status	Benzene (mg/Kg)	BTEX (mg/Kg)	C6 - C12 (mg/Kg)	C12 - C28 (mg/Kg)	C28 - C35 (mg/Kg)	TPH (mg/Kg)	Chloride (mg/Kg)							
Remediation Level:						10					50	100 / 2,500					600 / 10,000
S-1	0.5	9/2/2020	In-Situ	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	2,120							
	1	11/9/2020	In-Situ	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	62.3							
	3	11/9/2020	In-Situ	--	--	--	--	--	--	39.5							
	5	11/9/2020	In-Situ	--	--	--	--	--	--	16.2							
	8	11/9/2020	In-Situ	--	--	--	--	--	--	469							
S-2	0.5	9/2/2020	In-Situ	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	12,800							
	1	11/10/2020	In-Situ	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	2,350							
	1.5	11/10/2020	In-Situ	--	--	--	--	--	--	3,750							
	5	1/26/2021	In-Situ	--	--	--	--	--	--	472							
	10	1/26/2021	In-Situ	--	--	--	--	--	--	514							
	15	1/26/2021	In-Situ	--	--	--	--	--	--	147							
S-3	0.5	9/2/2020	In-Situ	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	10,600							
	1	11/10/2020	In-Situ	<0.00198	<0.00198	<49.9	<49.9	<49.9	<49.9	7,640							
	2.5	11/10/2020	In-Situ	--	--	--	--	--	--	3,420							
	5	1/26/2021	In-Situ	--	--	--	--	--	--	52.9							
S-4	0.5	9/2/2020	In-Situ	<0.00200	<0.00200	<49.9	53.9	<49.9	53.9	18,900							
	1	11/10/2020	In-Situ	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	5,490							
	2.5	11/10/2020	In-Situ	--	--	--	--	--	--	3,040							
	5	1/26/2021	In-Situ	--	--	--	--	--	--	260							
S-5	0.5	9/2/2020	In-Situ	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	7,950							
	1	11/10/2020	In-Situ	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	13,900							

Table 1
Soil Sample Analytical Data Summary
Vacuum Glorietta West Unit #27
Lea County, New Mexico
North 32° 48' 18.75", West 103° 31' 23.51"

Page 2 of 2

Sample	Depth (Feet)	Collection Date	Status	Benzene (mg/Kg)	BTEX (mg/Kg)	C6 - C12 (mg/Kg)	C12 - C28 (mg/Kg)	C28 - C35 (mg/Kg)	TPH (mg/Kg)	Chloride (mg/Kg)
Remediation Level:						10	50	100 / 2,500		600 / 10,000
	2.5	11/10/2020	In-Situ	--	--	--	--	--	--	3,860
	5	1/26/2021	In-Situ	--	--	--	--	--	--	1,250
	10	1/26/2021	In-Situ	--	--	--	--	--	--	104
S-6	0.5	9/2/2020	In-Situ	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	39.1
S-8	0.5	9/2/2020	In-Situ	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	<5.05
S-9	0.5	9/2/2020	In-Situ	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	274
S-10	0.5	11/10/2020	In-Situ	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	13.5
	1.5	11/10/2020	In-Situ	<0.00201	<0.00201	<49.9	<49.9	<49.9	<49.9	11.2

Notes: Analysis performed by Xenco Laboratories (Xenco) in Midland, Texas for BTEX, TPH, and chloride by EPA SW-846 Method 8021B, 8015M and 300, respectively.

Depth in feet below ground surface (bgs)

mg/Kg: milligrams per kilogram equivalent to parts per million (ppm)

<: denotes concentration less than analytical method reporting limit

Bold and Highlighted exceeds OCD remediation action limits

Figures

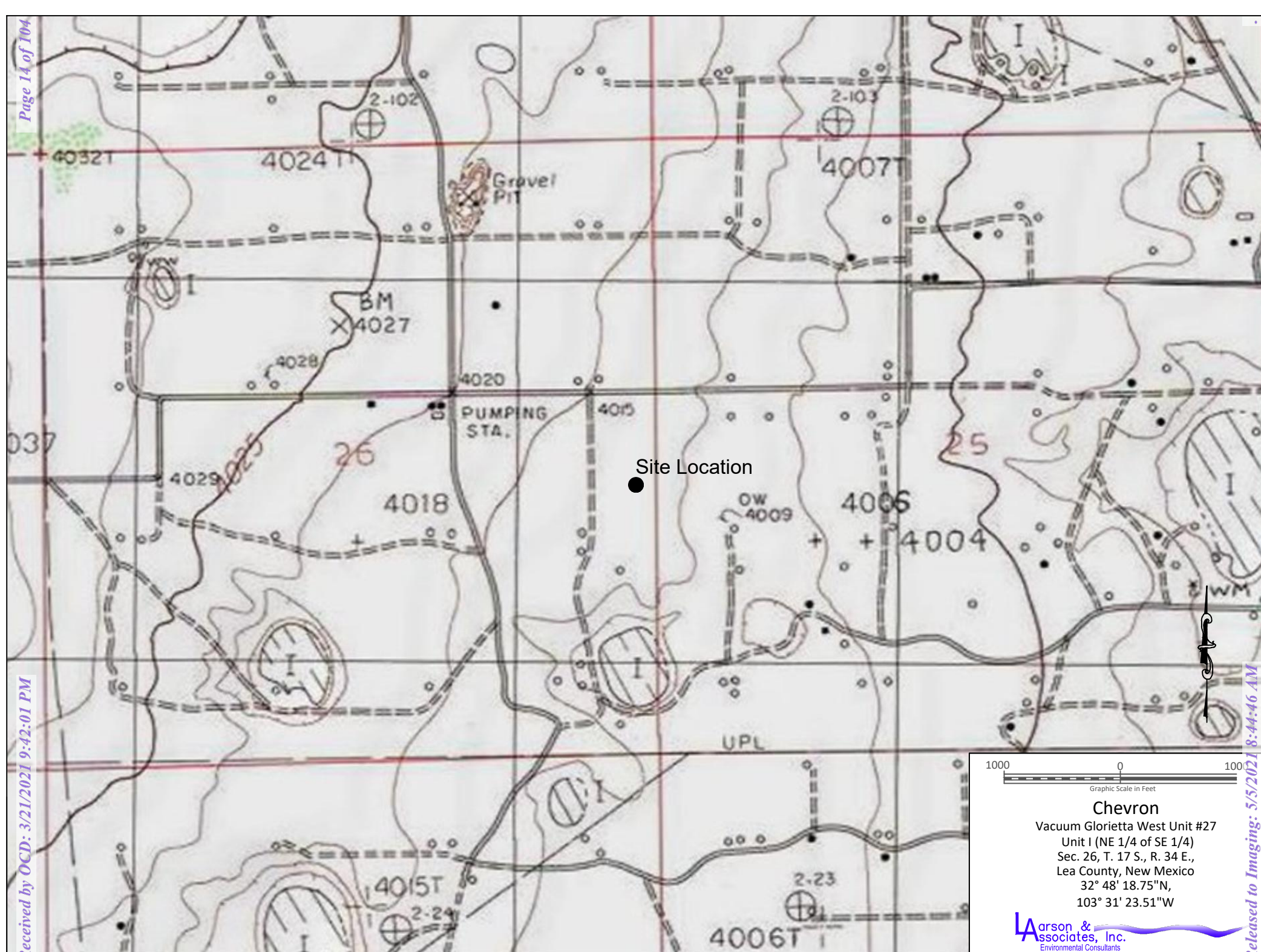
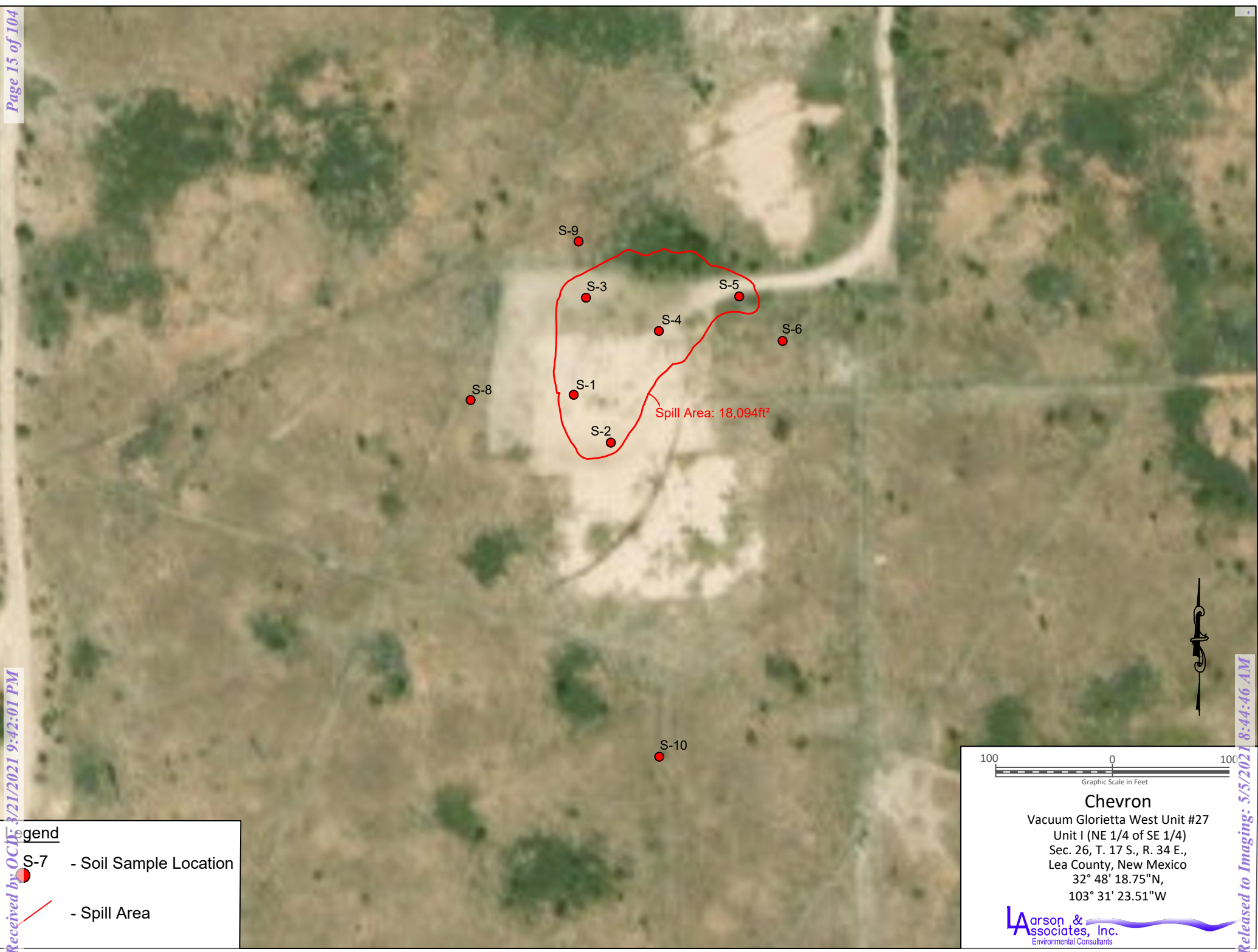


Figure 1 - Topographic Map



Legend

 S-7 - Soil Sample Location

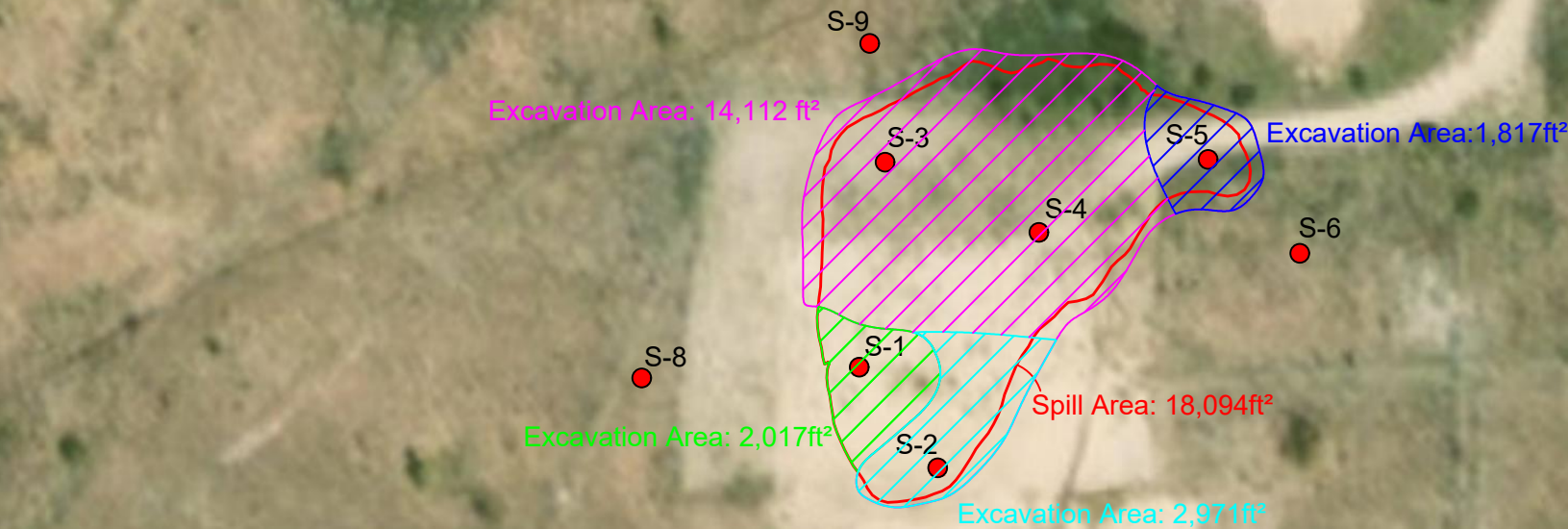
 - Spill Area

100 0 100
Graphic Scale in Feet

Chevron
Vacuum Glorietta West Unit #27
Unit I (NE 1/4 of SE 1/4)
Sec. 26, T. 17 S., R. 34 E.,
Lea County, New Mexico
32° 48' 18.75"N,
103° 31' 23.51"W

**Larson & Associates, Inc.**
Environmental Consultants

Figure 2 - Aerial Map



Legend

-  S-7 - Soil Sample Location
-  - Spill Area
-  - Proposed Excavation Area: 1'
-  - Proposed Excavation Area: 2'
-  - Proposed Excavation Area: 3'
-  - Proposed Excavation Area: 4.1'



Chevron

Vacuum Glorietta West Unit #27
 Unit I (NE 1/4 of SE 1/4)
 Sec. 26, T. 17 S., R. 34 E.,
 Lea County, New Mexico
 32° 48' 18.75"N,
 103° 31' 23.51"W

Larson & Associates, Inc.
 Environmental Consultants

Figure 3 - Aerial Map Showing Proposed Excavation Locations

Appendix A
Chevron Spill Calculation

State of New Mexico
Oil Conservation Division

Page 3

Incident ID	
District RP	
Facility ID	
Application ID	

Incident Date		7/29/2020			
Incident Time		Start Time	End Time		
		6:00 AM	3:20 PM		
Location	VGWU 27				
Lat/Long	32.805213, -103522840				
All volumes in following table in barrels					
Area	Standing Liquid	In Soil	dimensions / shape	Oil Volume	Water Volume
1		2	30X30	0	2
2		40.06	120x150		40.06
3	33.34		120X150		33.34
4					
5					
6					
7					
8					
Total Fluid				0	75.4
1 Fluid Recovered in barrels					
				0	30

Appendix B
Karst Risk Potential

 GeoNode

☒ Bing Satellite

Low

Appendix C
Laboratory Reports

Certificate of Analysis Summary 671698



Larson and Associates, Inc., Midland, TX

Project Name: VGWV 27

Project Id: 20-0107-20

Date Received in Lab: Thu 09.03.2020 07:58

Contact: Mark Larson

Report Date: 02.19.2021 13:05

Project Location:

Project Manager: Holly Taylor

<i>Analysis Requested</i>	<i>Lab Id:</i>	671698-001	671698-002	671698-003	671698-004	671698-005	671698-006
	<i>Field Id:</i>	S-1 .5'	S-2 .5'	S-3 .5'	S-4 .5'	S-5 .5'	S-6 .5'
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	09.02.2020 12:05	09.02.2020 12:10	09.02.2020 11:02	09.02.2020 11:00	09.02.2020 10:58	09.02.2020 10:55
BTEX by EPA 8021B	<i>Extracted:</i>	09.03.2020 14:00	09.03.2020 14:00	09.03.2020 14:00	09.03.2020 14:00	09.03.2020 14:00	09.03.2020 14:00
	<i>Analyzed:</i>	09.03.2020 15:44	09.03.2020 16:05	09.03.2020 16:25	09.03.2020 16:46	09.03.2020 17:06	09.03.2020 17:27
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199
Toluene		<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199
Ethylbenzene		<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199
m,p-Xylenes		<0.00399 0.00399	<0.00404 0.00404	<0.00403 0.00403	<0.00401 0.00401	<0.00403 0.00403	<0.00398 0.00398
o-Xylene		<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199
Total Xylenes		<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199
Total BTEX		<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199
Chloride by EPA 300	<i>Extracted:</i>	09.03.2020 12:24	09.03.2020 12:24	09.03.2020 12:24	09.03.2020 12:24	09.03.2020 12:24	09.03.2020 12:24
	<i>Analyzed:</i>	09.03.2020 17:44	09.03.2020 18:00	09.03.2020 18:05	09.03.2020 18:21	09.03.2020 18:26	09.03.2020 18:32
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		2120 25.2	12800 250	10600 50.4	18900 250	7950 49.8	39.1 4.98
TPH by SW8015 Mod	<i>Extracted:</i>	09.04.2020 11:00	09.04.2020 11:00	09.04.2020 11:00	09.04.2020 11:00	09.04.2020 11:00	09.04.2020 11:00
	<i>Analyzed:</i>	09.04.2020 13:00	09.04.2020 14:06	09.04.2020 14:28	09.04.2020 14:50	09.04.2020 15:12	09.04.2020 15:41
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0	<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.9 49.9
Diesel Range Organics (DRO)		<50.0 50.0	<50.0 50.0	<50.0 50.0	53.9 49.9	<50.0 50.0	<49.9 49.9
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.9 49.9
Total TPH		<50.0 50.0	<50.0 50.0	<50.0 50.0	53.9 49.9	<50.0 50.0	<49.9 49.9

BRL - Below Reporting Limit

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

Certificate of Analysis Summary 671698

Larson and Associates, Inc., Midland, TX

Project Name: VGWV 27

Project Id: 20-0107-20

Contact: Mark Larson

Project Location:

Date Received in Lab: Thu 09.03.2020 07:58

Report Date: 02.19.2021 13:05

Project Manager: Holly Taylor

Analysis Requested	Lab Id:	671698-008	671698-009				
	Field Id:	S-8 .5'	S-9 .5'				
	Depth:						
	Matrix:	SOIL	SOIL				
	Sampled:	09.02.2020 10:35	09.02.2020 10:20				
BTEX by EPA 8021B	Extracted:	09.03.2020 14:00	09.03.2020 14:00				
	Analyzed:	09.03.2020 18:08	09.03.2020 18:28				
	Units/RL:	mg/kg RL	mg/kg RL				
Benzene		<0.00201 0.00201	<0.00201 0.00201				
Toluene		<0.00201 0.00201	<0.00201 0.00201				
Ethylbenzene		<0.00201 0.00201	<0.00201 0.00201				
m,p-Xylenes		<0.00402 0.00402	<0.00402 0.00402				
o-Xylene		<0.00201 0.00201	<0.00201 0.00201				
Total Xylenes		<0.00201 0.00201	<0.00201 0.00201				
Total BTEX		<0.00201 0.00201	<0.00201 0.00201				
Chloride by EPA 300	Extracted:	09.03.2020 12:24	09.03.2020 14:30				
	Analyzed:	09.03.2020 18:42	09.03.2020 15:18				
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		<5.05 5.05	274 4.96				
TPH by SW8015 Mod	Extracted:	09.04.2020 11:00	09.04.2020 11:00				
	Analyzed:	09.04.2020 16:25	09.04.2020 16:46				
	Units/RL:	mg/kg RL	mg/kg RL				
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0	<50.0 50.0				
Diesel Range Organics (DRO)		<50.0 50.0	<50.0 50.0				
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<50.0 50.0				
Total TPH		<50.0 50.0	<50.0 50.0				

BRL - Below Reporting Limit

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



Analytical Report 671698

for

Larson and Associates, Inc.

Project Manager: Mark Larson

VGWV 27

20-0107-20

02.19.2021

Collected By: Client



**1211 W. Florida Ave
Midland TX 79701**

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-38), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2020-014), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-20-26), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-24)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-20-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)



02.19.2021

Project Manager: **Mark Larson**
Larson and Associates, Inc.
P. O. Box 50685
Midland, TX 79710

Reference: Eurofins Xenco, LLC Report No(s): **671698**
VGWV 27
Project Address:

Mark Larson:

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 Eurofins Xenco, LLC Report Number(s) 671698. 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 Eurofins Xenco, LLC. 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. 671698 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads "Holly Taylor".

Holly Taylor
Project Manager

A Small Business and Minority Company

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

**Sample Cross Reference 671698****Larson and Associates, Inc., Midland, TX**

VGWV 27

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
S-1 .5'	S	09.02.2020 12:05		671698-001
S-2 .5'	S	09.02.2020 12:10		671698-002
S-3 .5'	S	09.02.2020 11:02		671698-003
S-4 .5'	S	09.02.2020 11:00		671698-004
S-5 .5'	S	09.02.2020 10:58		671698-005
S-6 .5'	S	09.02.2020 10:55		671698-006
S-8 .5'	S	09.02.2020 10:35		671698-008
S-9 .5'	S	09.02.2020 10:20		671698-009
S-7 .5'	S	09.02.2020 10:45		Not Analyzed

**CASE NARRATIVE****Client Name: Larson and Associates, Inc.****Project Name: VGWV 27**Project ID: 20-0107-20
Work Order Number(s): 671698Report Date: 02.19.2021
Date Received: 09.03.2020**Sample receipt non conformances and comments:**

2/19/2021 1.001 Revised to remove sample 007 from report per Robert Nelson (email). HT

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3136324 BTEX by EPA 8021B

Surrogate 4-Bromofluorobenzene recovered above QC limits. Samples affected are: 7710754-1-BKS,671699-002 SD.

Batch: LBA-3136547 TPH by SW8015 Mod

Surrogate 1-Chlorooctane recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 671698-001 S,671698-001 SD.

Surrogate o-Terphenyl recovered above QC limits Data confirmed by re-analysis. Samples affected are: 7710899-1-BLK,671698-001 S,671698-001 SD,671698-002,671698-003.



Certificate of Analytical Results 671698

Larson and Associates, Inc., Midland, TX

VGWV 27

Sample Id: S-1 .5'
Lab Sample Id: 671698-001

Matrix: Soil
Date Collected: 09.02.2020 12:05

Date Received: 09.03.2020 07:58

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SPC

Analyst: SPC

Date Prep: 09.03.2020 12:24

% Moisture:
Basis: Wet Weight

Seq Number: 3136420

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2120	25.2	mg/kg	09.03.2020 17:44		5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 09.04.2020 11:00

% Moisture:
Basis: Wet Weight

Seq Number: 3136547

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	09.04.2020 13:00	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	09.04.2020 13:00	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	09.04.2020 13:00	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	09.04.2020 13:00	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	123	%	70-130	09.04.2020 13:00		
o-Terphenyl	84-15-1	130	%	70-130	09.04.2020 13:00		



Certificate of Analytical Results 671698

Larson and Associates, Inc., Midland, TX

VGWV 27

Sample Id: **S-1 .5'**
Lab Sample Id: 671698-001

Matrix: Soil
Date Collected: 09.02.2020 12:05

Date Received: 09.03.2020 07:58

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 09.03.2020 14:00

% Moisture:
Basis: Wet Weight

Seq Number: 3136324

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.03.2020 15:44	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.03.2020 15:44	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.03.2020 15:44	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	09.03.2020 15:44	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.03.2020 15:44	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.03.2020 15:44	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.03.2020 15:44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	96	%	70-130	09.03.2020 15:44	
4-Bromofluorobenzene	460-00-4	113	%	70-130	09.03.2020 15:44	



Certificate of Analytical Results 671698

Larson and Associates, Inc., Midland, TX

VGWV 27

Sample Id: S-2 .5' Matrix: Soil Date Received: 09.03.2020 07:58
 Lab Sample Id: 671698-002 Date Collected: 09.02.2020 12:10
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: SPC
 Analyst: SPC Date Prep: 09.03.2020 12:24 % Moisture:
 Seq Number: 3136420 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12800	250	mg/kg	09.03.2020 18:00		50

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM
 Analyst: ARM Date Prep: 09.04.2020 11:00 % Moisture:
 Seq Number: 3136547 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	09.04.2020 14:06	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	09.04.2020 14:06	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	09.04.2020 14:06	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	09.04.2020 14:06	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	129	%	70-130	09.04.2020 14:06		
o-Terphenyl	84-15-1	141	%	70-130	09.04.2020 14:06	**	



Certificate of Analytical Results 671698

Larson and Associates, Inc., Midland, TX

VGWV 27

Sample Id: S-2 .5'
Lab Sample Id: 671698-002

Matrix: Soil
Date Collected: 09.02.2020 12:10

Date Received: 09.03.2020 07:58

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 09.03.2020 14:00

% Moisture:
Basis: Wet Weight

Seq Number: 3136324

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	09.03.2020 16:05	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	09.03.2020 16:05	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	09.03.2020 16:05	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	09.03.2020 16:05	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	09.03.2020 16:05	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	09.03.2020 16:05	U	1
Total BTEX		<0.00202	0.00202	mg/kg	09.03.2020 16:05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	100	%	70-130	09.03.2020 16:05	
4-Bromofluorobenzene	460-00-4	127	%	70-130	09.03.2020 16:05	



Certificate of Analytical Results 671698

Larson and Associates, Inc., Midland, TX

VGWV 27

Sample Id: S-3.5' Matrix: Soil Date Received: 09.03.2020 07:58
 Lab Sample Id: 671698-003 Date Collected: 09.02.2020 11:02
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: SPC
 Analyst: SPC Date Prep: 09.03.2020 12:24 % Moisture:
 Seq Number: 3136420 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10600	50.4	mg/kg	09.03.2020 18:05		10

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM
 Analyst: ARM Date Prep: 09.04.2020 11:00 % Moisture:
 Seq Number: 3136547 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	09.04.2020 14:28	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	09.04.2020 14:28	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	09.04.2020 14:28	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	09.04.2020 14:28	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	130	%	70-130	09.04.2020 14:28		
o-Terphenyl	84-15-1	141	%	70-130	09.04.2020 14:28	**	



Certificate of Analytical Results 671698

Larson and Associates, Inc., Midland, TX

VGWV 27

Sample Id: **S-3 .5'**
Lab Sample Id: 671698-003

Matrix: Soil
Date Collected: 09.02.2020 11:02

Date Received: 09.03.2020 07:58

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 09.03.2020 14:00

% Moisture:
Basis: Wet Weight

Seq Number: 3136324

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	09.03.2020 16:25	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	09.03.2020 16:25	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	09.03.2020 16:25	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	09.03.2020 16:25	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	09.03.2020 16:25	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	09.03.2020 16:25	U	1
Total BTEX		<0.00202	0.00202	mg/kg	09.03.2020 16:25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	124	%	70-130	09.03.2020 16:25	
1,4-Difluorobenzene	540-36-3	101	%	70-130	09.03.2020 16:25	



Certificate of Analytical Results 671698

Larson and Associates, Inc., Midland, TX

VGWV 27

Sample Id: **S-4.5'** Matrix: Soil Date Received: 09.03.2020 07:58
 Lab Sample Id: 671698-004 Date Collected: 09.02.2020 11:00
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: SPC
 Analyst: SPC Date Prep: 09.03.2020 12:24 % Moisture:
 Seq Number: 3136420 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	18900	250	mg/kg	09.03.2020 18:21		50

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM
 Analyst: ARM Date Prep: 09.04.2020 11:00 % Moisture:
 Seq Number: 3136547 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	09.04.2020 14:50	U	1
Diesel Range Organics (DRO)	C10C28DRO	53.9	49.9	mg/kg	09.04.2020 14:50		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	09.04.2020 14:50	U	1
Total TPH	PHC635	53.9	49.9	mg/kg	09.04.2020 14:50		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	125	%	70-130	09.04.2020 14:50		
o-Terphenyl	84-15-1	130	%	70-130	09.04.2020 14:50		



Certificate of Analytical Results 671698

Larson and Associates, Inc., Midland, TX

VGWV 27

Sample Id: **S-4 .5'**
Lab Sample Id: 671698-004

Matrix: Soil
Date Collected: 09.02.2020 11:00

Date Received: 09.03.2020 07:58

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 09.03.2020 14:00

% Moisture:
Basis: Wet Weight

Seq Number: 3136324

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.03.2020 16:46	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.03.2020 16:46	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.03.2020 16:46	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	09.03.2020 16:46	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.03.2020 16:46	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.03.2020 16:46	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.03.2020 16:46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	113	%	70-130	09.03.2020 16:46	
1,4-Difluorobenzene	540-36-3	102	%	70-130	09.03.2020 16:46	



Certificate of Analytical Results 671698

Larson and Associates, Inc., Midland, TX

VGWV 27

Sample Id: S-5 .5' Matrix: Soil Date Received: 09.03.2020 07:58
 Lab Sample Id: 671698-005 Date Collected: 09.02.2020 10:58
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: SPC
 Analyst: SPC Date Prep: 09.03.2020 12:24 % Moisture:
 Seq Number: 3136420 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7950	49.8	mg/kg	09.03.2020 18:26		10

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM
 Analyst: ARM Date Prep: 09.04.2020 11:00 % Moisture:
 Seq Number: 3136547 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	09.04.2020 15:12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	09.04.2020 15:12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	09.04.2020 15:12	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	09.04.2020 15:12	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	126	%	70-130	09.04.2020 15:12		
o-Terphenyl	84-15-1	130	%	70-130	09.04.2020 15:12		



Certificate of Analytical Results 671698

Larson and Associates, Inc., Midland, TX

VGWV 27

Sample Id: S-5 .5'
Lab Sample Id: 671698-005

Matrix: Soil
Date Collected: 09.02.2020 10:58

Date Received: 09.03.2020 07:58

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 09.03.2020 14:00

% Moisture:
Basis: Wet Weight

Seq Number: 3136324

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	09.03.2020 17:06	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	09.03.2020 17:06	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	09.03.2020 17:06	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	09.03.2020 17:06	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	09.03.2020 17:06	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	09.03.2020 17:06	U	1
Total BTEX		<0.00202	0.00202	mg/kg	09.03.2020 17:06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	122	%	70-130	09.03.2020 17:06	
1,4-Difluorobenzene	540-36-3	98	%	70-130	09.03.2020 17:06	



Certificate of Analytical Results 671698

Larson and Associates, Inc., Midland, TX

VGWV 27

Sample Id: **S-6 .5'** Matrix: Soil Date Received: 09.03.2020 07:58
 Lab Sample Id: 671698-006 Date Collected: 09.02.2020 10:55
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: SPC
 Analyst: SPC Date Prep: 09.03.2020 12:24 % Moisture:
 Seq Number: 3136420 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	39.1	4.98	mg/kg	09.03.2020 18:32		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM
 Analyst: ARM Date Prep: 09.04.2020 11:00 % Moisture:
 Seq Number: 3136547 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	09.04.2020 15:41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	09.04.2020 15:41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	09.04.2020 15:41	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	09.04.2020 15:41	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	124	%	70-130	09.04.2020 15:41		
o-Terphenyl	84-15-1	130	%	70-130	09.04.2020 15:41		



Certificate of Analytical Results 671698

Larson and Associates, Inc., Midland, TX

VGWV 27

Sample Id: **S-6 .5'**
Lab Sample Id: 671698-006

Matrix: Soil
Date Collected: 09.02.2020 10:55

Date Received: 09.03.2020 07:58

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 09.03.2020 14:00

% Moisture:
Basis: Wet Weight

Seq Number: 3136324

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.03.2020 17:27	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.03.2020 17:27	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.03.2020 17:27	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.03.2020 17:27	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.03.2020 17:27	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.03.2020 17:27	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.03.2020 17:27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	96	%	70-130	09.03.2020 17:27	
4-Bromofluorobenzene	460-00-4	112	%	70-130	09.03.2020 17:27	



Certificate of Analytical Results 671698

Larson and Associates, Inc., Midland, TX

VGWV 27

Sample Id: S-8 .5'
Lab Sample Id: 671698-008

Matrix: Soil
Date Collected: 09.02.2020 10:35

Date Received: 09.03.2020 07:58

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SPC

Analyst: SPC

Date Prep: 09.03.2020 12:24

% Moisture:
Basis: Wet Weight

Seq Number: 3136420

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.05	5.05	mg/kg	09.03.2020 18:42	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 09.04.2020 11:00

% Moisture:
Basis: Wet Weight

Seq Number: 3136547

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	09.04.2020 16:25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	09.04.2020 16:25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	09.04.2020 16:25	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	09.04.2020 16:25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-130	09.04.2020 16:25	
o-Terphenyl	84-15-1	117	%	70-130	09.04.2020 16:25	



Certificate of Analytical Results 671698

Larson and Associates, Inc., Midland, TX

VGWV 27

Sample Id: **S-8 .5'**
Lab Sample Id: 671698-008

Matrix: Soil
Date Collected: 09.02.2020 10:35

Date Received: 09.03.2020 07:58

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 09.03.2020 14:00

% Moisture:
Basis: Wet Weight

Seq Number: 3136324

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	09.03.2020 18:08	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	09.03.2020 18:08	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	09.03.2020 18:08	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	09.03.2020 18:08	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	09.03.2020 18:08	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	09.03.2020 18:08	U	1
Total BTEX		<0.00201	0.00201	mg/kg	09.03.2020 18:08	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	09.03.2020 18:08		
4-Bromofluorobenzene	460-00-4	112	%	70-130	09.03.2020 18:08		



Certificate of Analytical Results 671698

Larson and Associates, Inc., Midland, TX

VGWV 27

Sample Id: **S-9 .5'** Matrix: Soil Date Received: 09.03.2020 07:58
 Lab Sample Id: 671698-009 Date Collected: 09.02.2020 10:20
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE
 Analyst: CHE Date Prep: 09.03.2020 14:30 % Moisture:
 Seq Number: 3136422 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	274	4.96	mg/kg	09.03.2020 15:18		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM
 Analyst: ARM Date Prep: 09.04.2020 11:00 % Moisture:
 Seq Number: 3136547 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	09.04.2020 16:46	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	09.04.2020 16:46	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	09.04.2020 16:46	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	09.04.2020 16:46	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	115	%	70-130	09.04.2020 16:46		
o-Terphenyl	84-15-1	116	%	70-130	09.04.2020 16:46		



Certificate of Analytical Results 671698

Larson and Associates, Inc., Midland, TX

VGWV 27

Sample Id: **S-9 .5'**
Lab Sample Id: 671698-009

Matrix: Soil
Date Collected: 09.02.2020 10:20

Date Received: 09.03.2020 07:58

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 09.03.2020 14:00

% Moisture:
Basis: Wet Weight

Seq Number: 3136324

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	09.03.2020 18:28	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	09.03.2020 18:28	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	09.03.2020 18:28	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	09.03.2020 18:28	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	09.03.2020 18:28	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	09.03.2020 18:28	U	1
Total BTEX		<0.00201	0.00201	mg/kg	09.03.2020 18:28	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	112	%	70-130	09.03.2020 18:28	
1,4-Difluorobenzene	540-36-3	98	%	70-130	09.03.2020 18:28	

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. **ND** Not Detected.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



Larson and Associates, Inc.
VGWV 27

Analytical Method: Chloride by EPA 300

Seq Number: 3136420

MB Sample Id: 7710739-1-BLK

Matrix: Solid

LCS Sample Id: 7710739-1-BKS

Prep Method: E300P

Date Prep: 09.03.2020

LCSD Sample Id: 7710739-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	261	104	260	104	90-110	0	20	mg/kg	09.03.2020 16:20	

Analytical Method: Chloride by EPA 300

Seq Number: 3136422

MB Sample Id: 7710761-1-BLK

Matrix: Solid

LCS Sample Id: 7710761-1-BKS

Prep Method: E300P

Date Prep: 09.03.2020

LCSD Sample Id: 7710761-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	266	106	268	107	90-110	1	20	mg/kg	09.03.2020 15:07	

Analytical Method: Chloride by EPA 300

Seq Number: 3136420

Parent Sample Id: 671644-004

Matrix: Soil

MS Sample Id: 671644-004 S

Prep Method: E300P

Date Prep: 09.03.2020

MSD Sample Id: 671644-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	12.1	252	265	100	255	96	90-110	4	20	mg/kg	09.03.2020 20:01	

Analytical Method: Chloride by EPA 300

Seq Number: 3136420

Parent Sample Id: 671698-001

Matrix: Soil

MS Sample Id: 671698-001 S

Prep Method: E300P

Date Prep: 09.03.2020

MSD Sample Id: 671698-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2120	1260	3370	99	3370	99	90-110	0	20	mg/kg	09.03.2020 17:50	

Analytical Method: Chloride by EPA 300

Seq Number: 3136422

Parent Sample Id: 671698-009

Matrix: Soil

MS Sample Id: 671698-009 S

Prep Method: E300P

Date Prep: 09.03.2020

MSD Sample Id: 671698-009 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	274	248	519	99	521	100	90-110	0	20	mg/kg	09.03.2020 15:23	

Analytical Method: Chloride by EPA 300

Seq Number: 3136422

Parent Sample Id: 671702-010

Matrix: Soil

MS Sample Id: 671702-010 S

Prep Method: E300P

Date Prep: 09.03.2020

MSD Sample Id: 671702-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1510	1260	2920	112	2920	112	90-110	0	20	mg/kg	09.03.2020 16:37	X

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

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

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

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



Larson and Associates, Inc.
VGWV 27

Analytical Method: TPH by SW8015 Mod

Seq Number: 3136547

MB Sample Id: 7710899-1-BLK

Matrix: Solid

LCS Sample Id: 7710899-1-BKS

Prep Method: SW8015P

Date Prep: 09.04.2020

LCSD Sample Id: 7710899-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	1090	109	1070	107	70-130	2	20	mg/kg	09.04.2020 12:16	
Diesel Range Organics (DRO)	<50.0	1000	1170	117	1180	118	70-130	1	20	mg/kg	09.04.2020 12:16	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	130		129		129		70-130	%	09.04.2020 12:16
o-Terphenyl	142	**	127		124		70-130	%	09.04.2020 12:16

Analytical Method: TPH by SW8015 Mod

Seq Number: 3136547

Matrix: Solid

Prep Method: SW8015P

Date Prep: 09.04.2020

MB Sample Id: 7710899-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	09.04.2020 11:55	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3136547

Matrix: Soil

Prep Method: SW8015P

Date Prep: 09.04.2020

Parent Sample Id: 671698-001

MS Sample Id: 671698-001 S

MSD Sample Id: 671698-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<49.9	997	1130	113	1160	116	70-130	3	20	mg/kg	09.04.2020 13:22	
Diesel Range Organics (DRO)	<49.9	997	1220	122	1210	121	70-130	1	20	mg/kg	09.04.2020 13:22	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	142	**	143	**	70-130	%	09.04.2020 13:22
o-Terphenyl	155	**	153	**	70-130	%	09.04.2020 13:22

Analytical Method: BTEX by EPA 8021B

Seq Number: 3136324

Matrix: Solid

Prep Method: SW5035A

Date Prep: 09.03.2020

MB Sample Id: 7710754-1-BLK

LCS Sample Id: 7710754-1-BKS

LCSD Sample Id: 7710754-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0899	90	0.0919	92	70-130	2	35	mg/kg	09.03.2020 10:05	
Toluene	<0.00200	0.100	0.0935	94	0.0934	93	70-130	0	35	mg/kg	09.03.2020 10:05	
Ethylbenzene	<0.00200	0.100	0.104	104	0.103	103	70-130	1	35	mg/kg	09.03.2020 10:05	
m,p-Xylenes	<0.00400	0.200	0.217	109	0.212	106	70-130	2	35	mg/kg	09.03.2020 10:05	
o-Xylene	<0.00200	0.100	0.109	109	0.106	106	70-130	3	35	mg/kg	09.03.2020 10:05	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	95		94		94		70-130	%	09.03.2020 10:05
4-Bromofluorobenzene	97		132	**	126		70-130	%	09.03.2020 10:05

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

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

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

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

Larson and Associates, Inc.
VGWV 27

Analytical Method: BTEX by EPA 8021B

Seq Number: 3136324

Parent Sample Id: 671699-002

Matrix: Soil

MS Sample Id: 671699-002 S

Prep Method: SW5035A

Date Prep: 09.03.2020

MSD Sample Id: 671699-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.0718	72	0.0853	85	70-130	17	35	mg/kg	09.03.2020 10:46	
Toluene	<0.00199	0.0996	0.0718	72	0.0866	87	70-130	19	35	mg/kg	09.03.2020 10:46	
Ethylbenzene	<0.00199	0.0996	0.0765	77	0.0929	93	70-130	19	35	mg/kg	09.03.2020 10:46	
m,p-Xylenes	<0.00398	0.199	0.156	78	0.191	96	70-130	20	35	mg/kg	09.03.2020 10:46	
o-Xylene	<0.00199	0.0996	0.0787	79	0.0955	96	70-130	19	35	mg/kg	09.03.2020 10:46	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	93		94		70-130	%	09.03.2020 10:46
4-Bromofluorobenzene	118		131	**	70-130	%	09.03.2020 10:46

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

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

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

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

Certificate of Analysis Summary 677462

Larson and Associates, Inc., Midland, TX

Project Name: Vacuum Glorieta Unit #27

Project Id: 20-0107-20

Contact: Mark Larson

Project Location: NM

Date Received in Lab: Wed 11.11.2020 08:53

Report Date: 02.19.2021 13:03

Project Manager: Holly Taylor

<i>Analysis Requested</i>	<i>Lab Id:</i>	677462-001	677462-002	677462-003	677462-004	677462-005	677462-006
	<i>Field Id:</i>	S-1 1'	S-1 3'	S-1 5'	S-1 8'	S-2 1'	S-2 1.5'
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	11.09.2020 12:50	11.09.2020 12:52	11.09.2020 12:54	11.09.2020 12:56	11.10.2020 10:40	11.10.2020 10:42
BTEX by EPA 8021B	<i>Extracted:</i>	11.11.2020 12:00				11.11.2020 12:00	
	<i>Analyzed:</i>	11.11.2020 14:12				11.11.2020 14:33	
	<i>Units/RL:</i>	mg/kg RL				mg/kg RL	
Benzene		<0.00199 0.00199				<0.00200 0.00200	
Toluene		<0.00199 0.00199				<0.00200 0.00200	
Ethylbenzene		<0.00199 0.00199				<0.00200 0.00200	
m,p-Xylenes		<0.00398 0.00398				<0.00400 0.00400	
o-Xylene		<0.00199 0.00199				<0.00200 0.00200	
Total Xylenes		<0.00199 0.00199				<0.00200 0.00200	
Total BTEX		<0.00199 0.00199				<0.00200 0.00200	
Chloride by EPA 300	<i>Extracted:</i>	11.11.2020 15:30	11.11.2020 15:30	11.11.2020 15:30	11.11.2020 15:30	11.11.2020 15:30	11.11.2020 15:30
	<i>Analyzed:</i>	11.11.2020 19:39	11.11.2020 19:44	11.11.2020 20:00	11.11.2020 20:05	11.11.2020 20:10	11.11.2020 20:16
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		62.3 5.00	39.5 4.98	16.2 4.99	469 5.04	2350 25.3	3750 25.3
TPH By SW8015 Mod	<i>Extracted:</i>	11.11.2020 12:00				11.11.2020 12:00	
	<i>Analyzed:</i>	11.11.2020 13:19				11.11.2020 14:17	
	<i>Units/RL:</i>	mg/kg RL				mg/kg RL	
Gasoline Range Hydrocarbons		<50.0 50.0				<50.0 50.0	
Diesel Range Organics		<50.0 50.0				<50.0 50.0	
Oil Range Hydrocarbons		<50.0 50.0				<50.0 50.0	
Total TPH		<50.0 50.0				<50.0 50.0	

BRL - Below Reporting Limit

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



Certificate of Analysis Summary 677462

Larson and Associates, Inc., Midland, TX

Project Name: Vacuum Glorieta Unit #27

Project Id: 20-0107-20

Contact: Mark Larson

Project Location: NM

Date Received in Lab: Wed 11.11.2020 08:53

Report Date: 02.19.2021 13:03

Project Manager: Holly Taylor

<i>Analysis Requested</i>	<i>Lab Id:</i>	677462-007	677462-008	677462-009	677462-010	677462-011	677462-012
	<i>Field Id:</i>	S-4 1'	S-4 2.5'	S-3 1'	S-3 2.5'	S-5 1'	S-5 2.5'
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	11.10.2020 11:00	11.10.2020 11:02	11.10.2020 11:11	11.10.2020 11:13	11.10.2020 11:49	11.10.2020 11:51
BTEX by EPA 8021B	<i>Extracted:</i>	11.11.2020 12:00		11.11.2020 12:00		11.11.2020 12:00	
	<i>Analyzed:</i>	11.11.2020 14:53		11.11.2020 15:13		11.11.2020 15:34	
	<i>Units/RL:</i>	mg/kg RL		mg/kg RL		mg/kg RL	
Benzene		<0.00199 0.00199		<0.00198 0.00198		<0.00200 0.00200	
Toluene		<0.00199 0.00199		<0.00198 0.00198		<0.00200 0.00200	
Ethylbenzene		<0.00199 0.00199		<0.00198 0.00198		<0.00200 0.00200	
m,p-Xylenes		<0.00398 0.00398		<0.00396 0.00396		<0.00399 0.00399	
o-Xylene		<0.00199 0.00199		<0.00198 0.00198		<0.00200 0.00200	
Total Xylenes		<0.00199 0.00199		<0.00198 0.00198		<0.00200 0.00200	
Total BTEX		<0.00199 0.00199		<0.00198 0.00198		<0.00200 0.00200	
Chloride by EPA 300	<i>Extracted:</i>	11.11.2020 16:50	11.11.2020 16:50	11.11.2020 16:50	11.11.2020 16:50	11.11.2020 16:50	11.11.2020 16:50
	<i>Analyzed:</i>	11.11.2020 21:51	11.11.2020 21:56	11.11.2020 22:01	11.11.2020 22:06	11.11.2020 22:12	11.11.2020 22:17
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		5490 49.5	3040 25.1	7640 50.5	3420 24.9	13900 101	3860 25.0
TPH By SW8015 Mod	<i>Extracted:</i>	11.11.2020 12:00		11.11.2020 12:00		11.11.2020 12:00	
	<i>Analyzed:</i>	11.11.2020 14:36		11.11.2020 14:56		11.11.2020 15:15	
	<i>Units/RL:</i>	mg/kg RL		mg/kg RL		mg/kg RL	
Gasoline Range Hydrocarbons		<50.0 50.0		<49.9 49.9		<49.8 49.8	
Diesel Range Organics		<50.0 50.0		<49.9 49.9		<49.8 49.8	
Oil Range Hydrocarbons		<50.0 50.0		<49.9 49.9		<49.8 49.8	
Total TPH		<50.0 50.0		<49.9 49.9		<49.8 49.8	

BRL - Below Reporting Limit

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



Certificate of Analysis Summary 677462

Larson and Associates, Inc., Midland, TX

Project Name: Vacuum Glorieta Unit #27

Project Id: 20-0107-20

Date Received in Lab: Wed 11.11.2020 08:53

Contact: Mark Larson

Report Date: 02.19.2021 13:03

Project Location: NM

Project Manager: Holly Taylor

Analysis Requested	Lab Id:	677462-015	677462-016				
	Field Id:	S-10 0.5'	S-10 1.5'				
	Depth:						
	Matrix:	SOIL	SOIL				
	Sampled:	11.10.2020 12:15	11.10.2020 12:17				
BTEX by EPA 8021B	Extracted:	11.11.2020 12:00	11.11.2020 12:00				
	Analyzed:	11.11.2020 16:15	11.11.2020 16:35				
	Units/RL:	mg/kg RL	mg/kg RL				
Benzene		<0.00198 0.00198	<0.00201 0.00201				
Toluene		<0.00198 0.00198	<0.00201 0.00201				
Ethylbenzene		<0.00198 0.00198	<0.00201 0.00201				
m,p-Xylenes		<0.00397 0.00397	<0.00402 0.00402				
o-Xylene		<0.00198 0.00198	<0.00201 0.00201				
Total Xylenes		<0.00198 0.00198	<0.00201 0.00201				
Total BTEX		<0.00198 0.00198	<0.00201 0.00201				
Chloride by EPA 300	Extracted:	11.11.2020 16:50	11.11.2020 16:50				
	Analyzed:	11.11.2020 22:54	11.11.2020 22:59				
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		13.5 4.95	11.2 4.96				
TPH By SW8015 Mod	Extracted:	11.11.2020 12:00	11.11.2020 12:00				
	Analyzed:	11.11.2020 15:54	11.11.2020 16:13				
	Units/RL:	mg/kg RL	mg/kg RL				
Gasoline Range Hydrocarbons		<50.0 50.0	<49.9 49.9				
Diesel Range Organics		<50.0 50.0	<49.9 49.9				
Oil Range Hydrocarbons		<50.0 50.0	<49.9 49.9				
Total TPH		<50.0 50.0	<49.9 49.9				

BRL - Below Reporting Limit

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



Analytical Report 677462

for

Larson and Associates, Inc.

Project Manager: Mark Larson

Vacuum Glorieta Unit #27

20-0107-20

02.19.2021

Collected By: Client



**1211 W. Florida Ave
Midland TX 79701**

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-38), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2020-014), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-20-26), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-24)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-20-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)



02.19.2021

Project Manager: **Mark Larson**

Larson and Associates, Inc.

P. O. Box 50685

Midland, TX 79710

Reference: Eurofins Xenco, LLC Report No(s): **677462**

Vacuum Glorieta Unit #27

Project Address: NM

Mark Larson :

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 Eurofins Xenco, LLC Report Number(s) 677462. 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 Eurofins Xenco, LLC. 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. 677462 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads "Holly Taylor".

Holly Taylor
Project Manager

A Small Business and Minority Company

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

**Sample Cross Reference 677462****Larson and Associates, Inc., Midland, TX**

Vacuum Glorieta Unit #27

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
S-1 1'	S	11.09.2020 12:50		677462-001
S-1 3'	S	11.09.2020 12:52		677462-002
S-1 5'	S	11.09.2020 12:54		677462-003
S-1 8'	S	11.09.2020 12:56		677462-004
S-2 1'	S	11.10.2020 10:40		677462-005
S-2 1.5'	S	11.10.2020 10:42		677462-006
S-4 1'	S	11.10.2020 11:00		677462-007
S-4 2.5'	S	11.10.2020 11:02		677462-008
S-3 1'	S	11.10.2020 11:11		677462-009
S-3 2.5'	S	11.10.2020 11:13		677462-010
S-5 1'	S	11.10.2020 11:49		677462-011
S-5 2.5'	S	11.10.2020 11:51		677462-012
S-10 0.5'	S	11.10.2020 12:15		677462-015
S-10 1.5'	S	11.10.2020 12:17		677462-016
S-7 1'	S	11.10.2020 12:04		Not Analyzed
S-7 1.5'	S	11.10.2020 12:06		Not Analyzed



CASE NARRATIVE

Client Name: Larson and Associates, Inc.

Project Name: Vacuum Glorieta Unit #27

Project ID: 20-0107-20
Work Order Number(s): 677462

Report Date: 02.19.2021
Date Received: 11.11.2020

Sample receipt non conformances and comments:

2/19/2021 1.001 Revised to remove samples 013 and 014 from report per Robert Nelson (email). HT

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 677462

Larson and Associates, Inc., Midland, TX

Vacuum Glorieta Unit #27

Sample Id: S-1 1'
Lab Sample Id: 677462-001

Matrix: Soil
Date Collected: 11.09.2020 12:50

Date Received: 11.11.2020 08:53

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 11.11.2020 15:30

% Moisture:
Basis: Wet Weight

Seq Number: 3142020

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	62.3	5.00	mg/kg	11.11.2020 19:39		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 11.11.2020 12:00

% Moisture:
Basis: Wet Weight

Seq Number: 3142071

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<50.0	50.0	mg/kg	11.11.2020 13:19	U	1
Diesel Range Organics	C10C28DRO	<50.0	50.0	mg/kg	11.11.2020 13:19	U	1
Oil Range Hydrocarbons	PHCG2835	<50.0	50.0	mg/kg	11.11.2020 13:19	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.11.2020 13:19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-130	11.11.2020 13:19	
o-Terphenyl	84-15-1	118	%	70-130	11.11.2020 13:19	



Certificate of Analytical Results 677462

Larson and Associates, Inc., Midland, TX

Vacuum Glorieta Unit #27

Sample Id: S-1 1'
Lab Sample Id: 677462-001

Matrix: Soil
Date Collected: 11.09.2020 12:50

Date Received: 11.11.2020 08:53

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 11.11.2020 12:00

% Moisture:
Basis: Wet Weight

Seq Number: 3142010

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.11.2020 14:12	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.11.2020 14:12	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.11.2020 14:12	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.11.2020 14:12	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.11.2020 14:12	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	11.11.2020 14:12	U	1
Total BTEX		<0.00199	0.00199	mg/kg	11.11.2020 14:12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	117	%	70-130	11.11.2020 14:12	
1,4-Difluorobenzene	540-36-3	98	%	70-130	11.11.2020 14:12	

**Certificate of Analytical Results 677462****Larson and Associates, Inc., Midland, TX**

Vacuum Glorieta Unit #27

Sample Id: **S-1 3'**
Lab Sample Id: 677462-002

Matrix: Soil
Date Collected: 11.09.2020 12:52

Date Received: 11.11.2020 08:53

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 11.11.2020 15:30

% Moisture:
Basis: Wet Weight

Seq Number: 3142020

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	39.5	4.98	mg/kg	11.11.2020 19:44		1

**Certificate of Analytical Results 677462****Larson and Associates, Inc., Midland, TX**

Vacuum Glorieta Unit #27

Sample Id: **S-1 5'**
Lab Sample Id: 677462-003

Matrix: Soil
Date Collected: 11.09.2020 12:54

Date Received: 11.11.2020 08:53

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 11.11.2020 15:30

% Moisture:
Basis: Wet Weight

Seq Number: 3142020

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	16.2	4.99	mg/kg	11.11.2020 20:00		1

**Certificate of Analytical Results 677462****Larson and Associates, Inc., Midland, TX**

Vacuum Glorieta Unit #27

Sample Id: **S-1 8'**
Lab Sample Id: 677462-004

Matrix: Soil
Date Collected: 11.09.2020 12:56

Date Received: 11.11.2020 08:53

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 11.11.2020 15:30

% Moisture:
Basis: Wet Weight

Seq Number: 3142020

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	469	5.04	mg/kg	11.11.2020 20:05		1



Certificate of Analytical Results 677462

Larson and Associates, Inc., Midland, TX

Vacuum Glorieta Unit #27

Sample Id: S-2 1'
Lab Sample Id: 677462-005

Matrix: Soil
Date Collected: 11.10.2020 10:40

Date Received: 11.11.2020 08:53

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 11.11.2020 15:30

% Moisture:
Basis: Wet Weight

Seq Number: 3142020

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2350	25.3	mg/kg	11.11.2020 20:10		5

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 11.11.2020 12:00

% Moisture:
Basis: Wet Weight

Seq Number: 3142071

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<50.0	50.0	mg/kg	11.11.2020 14:17	U	1
Diesel Range Organics	C10C28DRO	<50.0	50.0	mg/kg	11.11.2020 14:17	U	1
Oil Range Hydrocarbons	PHCG2835	<50.0	50.0	mg/kg	11.11.2020 14:17	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.11.2020 14:17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-130	11.11.2020 14:17	
o-Terphenyl	84-15-1	113	%	70-130	11.11.2020 14:17	



Certificate of Analytical Results 677462

Larson and Associates, Inc., Midland, TX

Vacuum Glorieta Unit #27

Sample Id: S-2 1'
Lab Sample Id: 677462-005

Matrix: Soil
Date Collected: 11.10.2020 10:40

Date Received: 11.11.2020 08:53

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 11.11.2020 12:00

% Moisture:
Basis: Wet Weight

Seq Number: 3142010

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.11.2020 14:33	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.11.2020 14:33	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.11.2020 14:33	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	11.11.2020 14:33	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.11.2020 14:33	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.11.2020 14:33	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.11.2020 14:33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	91	%	70-130	11.11.2020 14:33	
4-Bromofluorobenzene	460-00-4	124	%	70-130	11.11.2020 14:33	

**Certificate of Analytical Results 677462****Larson and Associates, Inc., Midland, TX**

Vacuum Glorieta Unit #27

Sample Id: S-2 1.5'
Lab Sample Id: 677462-006

Matrix: Soil
Date Collected: 11.10.2020 10:42

Date Received: 11.11.2020 08:53

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 11.11.2020 15:30

% Moisture:
Basis: Wet Weight

Seq Number: 3142020

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3750	25.3	mg/kg	11.11.2020 20:16		5



Certificate of Analytical Results 677462

Larson and Associates, Inc., Midland, TX

Vacuum Glorieta Unit #27

Sample Id: **S-4 1'**
Lab Sample Id: 677462-007

Matrix: Soil
Date Collected: 11.10.2020 11:00

Date Received: 11.11.2020 08:53

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 11.11.2020 16:50

% Moisture:
Basis: Wet Weight

Seq Number: 3142023

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5490	49.5	mg/kg	11.11.2020 21:51		10

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 11.11.2020 12:00

% Moisture:
Basis: Wet Weight

Seq Number: 3142071

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<50.0	50.0	mg/kg	11.11.2020 14:36	U	1
Diesel Range Organics	C10C28DRO	<50.0	50.0	mg/kg	11.11.2020 14:36	U	1
Oil Range Hydrocarbons	PHCG2835	<50.0	50.0	mg/kg	11.11.2020 14:36	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.11.2020 14:36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-130	11.11.2020 14:36	
o-Terphenyl	84-15-1	116	%	70-130	11.11.2020 14:36	



Certificate of Analytical Results 677462

Larson and Associates, Inc., Midland, TX

Vacuum Glorieta Unit #27

Sample Id: **S-4 1'**
Lab Sample Id: 677462-007

Matrix: Soil
Date Collected: 11.10.2020 11:00

Date Received: 11.11.2020 08:53

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 11.11.2020 12:00

% Moisture:
Basis: Wet Weight

Seq Number: 3142010

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.11.2020 14:53	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.11.2020 14:53	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.11.2020 14:53	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.11.2020 14:53	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.11.2020 14:53	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	11.11.2020 14:53	U	1
Total BTEX		<0.00199	0.00199	mg/kg	11.11.2020 14:53	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	115	%	70-130	11.11.2020 14:53		
1,4-Difluorobenzene	540-36-3	97	%	70-130	11.11.2020 14:53		

**Certificate of Analytical Results 677462****Larson and Associates, Inc., Midland, TX**

Vacuum Glorieta Unit #27

Sample Id: **S-4 2.5'**
Lab Sample Id: 677462-008

Matrix: Soil
Date Collected: 11.10.2020 11:02

Date Received: 11.11.2020 08:53

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 11.11.2020 16:50

% Moisture:
Basis: Wet Weight

Seq Number: 3142023

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3040	25.1	mg/kg	11.11.2020 21:56		5



Certificate of Analytical Results 677462

Larson and Associates, Inc., Midland, TX

Vacuum Glorieta Unit #27

Sample Id: S-3 1'
Lab Sample Id: 677462-009

Matrix: Soil
Date Collected: 11.10.2020 11:11

Date Received: 11.11.2020 08:53

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 11.11.2020 16:50

% Moisture:
Basis: Wet Weight

Seq Number: 3142023

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7640	50.5	mg/kg	11.11.2020 22:01		10

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 11.11.2020 12:00

% Moisture:
Basis: Wet Weight

Seq Number: 3142071

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<49.9	49.9	mg/kg	11.11.2020 14:56	U	1
Diesel Range Organics	C10C28DRO	<49.9	49.9	mg/kg	11.11.2020 14:56	U	1
Oil Range Hydrocarbons	PHCG2835	<49.9	49.9	mg/kg	11.11.2020 14:56	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	11.11.2020 14:56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-130	11.11.2020 14:56	
o-Terphenyl	84-15-1	118	%	70-130	11.11.2020 14:56	



Certificate of Analytical Results 677462

Larson and Associates, Inc., Midland, TX

Vacuum Glorieta Unit #27

Sample Id: S-3 1'
Lab Sample Id: 677462-009

Matrix: Soil
Date Collected: 11.10.2020 11:11

Date Received: 11.11.2020 08:53

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 11.11.2020 12:00

% Moisture:
Basis: Wet Weight

Seq Number: 3142010

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.11.2020 15:13	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.11.2020 15:13	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.11.2020 15:13	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	11.11.2020 15:13	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.11.2020 15:13	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	11.11.2020 15:13	U	1
Total BTEX		<0.00198	0.00198	mg/kg	11.11.2020 15:13	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	128	%	70-130	11.11.2020 15:13		
1,4-Difluorobenzene	540-36-3	88	%	70-130	11.11.2020 15:13		

**Certificate of Analytical Results 677462****Larson and Associates, Inc., Midland, TX**

Vacuum Glorieta Unit #27

Sample Id: **S-3 2.5'**
Lab Sample Id: 677462-010

Matrix: Soil
Date Collected: 11.10.2020 11:13

Date Received: 11.11.2020 08:53

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 11.11.2020 16:50

% Moisture:
Basis: Wet Weight

Seq Number: 3142023

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3420	24.9	mg/kg	11.11.2020 22:06		5



Certificate of Analytical Results 677462

Larson and Associates, Inc., Midland, TX

Vacuum Glorieta Unit #27

Sample Id: S-5 1'
Lab Sample Id: 677462-011

Matrix: Soil
Date Collected: 11.10.2020 11:49

Date Received: 11.11.2020 08:53

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 11.11.2020 16:50

% Moisture:
Basis: Wet Weight

Seq Number: 3142023

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	13900	101	mg/kg	11.11.2020 22:12		20

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 11.11.2020 12:00

% Moisture:
Basis: Wet Weight

Seq Number: 3142071

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<49.8	49.8	mg/kg	11.11.2020 15:15	U	1
Diesel Range Organics	C10C28DRO	<49.8	49.8	mg/kg	11.11.2020 15:15	U	1
Oil Range Hydrocarbons	PHCG2835	<49.8	49.8	mg/kg	11.11.2020 15:15	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	11.11.2020 15:15	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	93	%	70-130	11.11.2020 15:15		
o-Terphenyl	84-15-1	108	%	70-130	11.11.2020 15:15		



Certificate of Analytical Results 677462

Larson and Associates, Inc., Midland, TX

Vacuum Glorieta Unit #27

Sample Id: S-5 1'
Lab Sample Id: 677462-011

Matrix: Soil
Date Collected: 11.10.2020 11:49

Date Received: 11.11.2020 08:53

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 11.11.2020 12:00

% Moisture:
Basis: Wet Weight

Seq Number: 3142010

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.11.2020 15:34	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.11.2020 15:34	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.11.2020 15:34	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.11.2020 15:34	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.11.2020 15:34	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.11.2020 15:34	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.11.2020 15:34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	117	%	70-130	11.11.2020 15:34	
1,4-Difluorobenzene	540-36-3	94	%	70-130	11.11.2020 15:34	

**Certificate of Analytical Results 677462****Larson and Associates, Inc., Midland, TX**

Vacuum Glorieta Unit #27

Sample Id: S-5 2.5'
Lab Sample Id: 677462-012

Matrix: Soil
Date Collected: 11.10.2020 11:51

Date Received: 11.11.2020 08:53

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 11.11.2020 16:50

% Moisture:
Basis: Wet Weight

Seq Number: 3142023

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3860	25.0	mg/kg	11.11.2020 22:17		5



Certificate of Analytical Results 677462

Larson and Associates, Inc., Midland, TX

Vacuum Glorieta Unit #27

Sample Id: **S-10 0.5'**
Lab Sample Id: 677462-015

Matrix: Soil
Date Collected: 11.10.2020 12:15

Date Received: 11.11.2020 08:53

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 11.11.2020 16:50

% Moisture:
Basis: Wet Weight

Seq Number: 3142023

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	13.5	4.95	mg/kg	11.11.2020 22:54		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 11.11.2020 12:00

% Moisture:
Basis: Wet Weight

Seq Number: 3142071

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<50.0	50.0	mg/kg	11.11.2020 15:54	U	1
Diesel Range Organics	C10C28DRO	<50.0	50.0	mg/kg	11.11.2020 15:54	U	1
Oil Range Hydrocarbons	PHCG2835	<50.0	50.0	mg/kg	11.11.2020 15:54	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.11.2020 15:54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-130	11.11.2020 15:54	
o-Terphenyl	84-15-1	102	%	70-130	11.11.2020 15:54	



Certificate of Analytical Results 677462

Larson and Associates, Inc., Midland, TX

Vacuum Glorieta Unit #27

Sample Id: **S-10 0.5'**
Lab Sample Id: 677462-015

Matrix: Soil
Date Collected: 11.10.2020 12:15

Date Received: 11.11.2020 08:53

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 11.11.2020 12:00

% Moisture:
Basis: Wet Weight

Seq Number: 3142010

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.11.2020 16:15	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.11.2020 16:15	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.11.2020 16:15	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	11.11.2020 16:15	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.11.2020 16:15	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	11.11.2020 16:15	U	1
Total BTEX		<0.00198	0.00198	mg/kg	11.11.2020 16:15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	94	%	70-130	11.11.2020 16:15	
4-Bromofluorobenzene	460-00-4	116	%	70-130	11.11.2020 16:15	



Certificate of Analytical Results 677462

Larson and Associates, Inc., Midland, TX

Vacuum Glorieta Unit #27

Sample Id: **S-10 1.5'**
Lab Sample Id: 677462-016

Matrix: Soil
Date Collected: 11.10.2020 12:17

Date Received: 11.11.2020 08:53

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 11.11.2020 16:50

% Moisture:
Basis: Wet Weight

Seq Number: 3142023

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	11.2	4.96	mg/kg	11.11.2020 22:59		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 11.11.2020 12:00

% Moisture:
Basis: Wet Weight

Seq Number: 3142071

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<49.9	49.9	mg/kg	11.11.2020 16:13	U	1
Diesel Range Organics	C10C28DRO	<49.9	49.9	mg/kg	11.11.2020 16:13	U	1
Oil Range Hydrocarbons	PHCG2835	<49.9	49.9	mg/kg	11.11.2020 16:13	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	11.11.2020 16:13	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	105	%	70-130	11.11.2020 16:13		
o-Terphenyl	84-15-1	115	%	70-130	11.11.2020 16:13		



Certificate of Analytical Results 677462

Larson and Associates, Inc., Midland, TX

Vacuum Glorieta Unit #27

Sample Id: **S-10 1.5'**
Lab Sample Id: 677462-016

Matrix: Soil
Date Collected: 11.10.2020 12:17

Date Received: 11.11.2020 08:53

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 11.11.2020 12:00

% Moisture:
Basis: Wet Weight

Seq Number: 3142010

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	11.11.2020 16:35	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	11.11.2020 16:35	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	11.11.2020 16:35	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	11.11.2020 16:35	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	11.11.2020 16:35	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	11.11.2020 16:35	U	1
Total BTEX		<0.00201	0.00201	mg/kg	11.11.2020 16:35	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	98	%	70-130	11.11.2020 16:35		
4-Bromofluorobenzene	460-00-4	116	%	70-130	11.11.2020 16:35		

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. **ND** Not Detected.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



Larson and Associates, Inc.
Vacuum Glorieta Unit #27

Analytical Method: Chloride by EPA 300

Seq Number: 3142020

MB Sample Id: 7714973-1-BLK

Matrix: Solid

LCS Sample Id: 7714973-1-BKS

Prep Method: E300P

Date Prep: 11.11.2020

LCSD Sample Id: 7714973-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	260	104	260	104	90-110	0	20	mg/kg	11.11.2020 17:59	

Analytical Method: Chloride by EPA 300

Seq Number: 3142023

MB Sample Id: 7714976-1-BLK

Matrix: Solid

LCS Sample Id: 7714976-1-BKS

Prep Method: E300P

Date Prep: 11.11.2020

LCSD Sample Id: 7714976-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	269	108	260	104	90-110	3	20	mg/kg	11.11.2020 20:53	

Analytical Method: Chloride by EPA 300

Seq Number: 3142020

Parent Sample Id: 676597-002

Matrix: Soil

MS Sample Id: 676597-002 S

Prep Method: E300P

Date Prep: 11.11.2020

MSD Sample Id: 676597-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	52.8	252	327	109	325	108	90-110	1	20	mg/kg	11.11.2020 19:28	

Analytical Method: Chloride by EPA 300

Seq Number: 3142020

Parent Sample Id: 677457-039

Matrix: Soil

MS Sample Id: 677457-039 S

Prep Method: E300P

Date Prep: 11.11.2020

MSD Sample Id: 677457-039 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	437	250	672	94	671	94	90-110	0	20	mg/kg	11.11.2020 18:15	

Analytical Method: Chloride by EPA 300

Seq Number: 3142023

Parent Sample Id: 677462-012

Matrix: Soil

MS Sample Id: 677462-012 S

Prep Method: E300P

Date Prep: 11.11.2020

MSD Sample Id: 677462-012 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	3860	1250	5240	110	5220	109	90-110	0	20	mg/kg	11.11.2020 22:22	

Analytical Method: Chloride by EPA 300

Seq Number: 3142023

Parent Sample Id: 677581-001

Matrix: Soil

MS Sample Id: 677581-001 S

Prep Method: E300P

Date Prep: 11.11.2020

MSD Sample Id: 677581-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	86.3	1260	1500	112	1500	112	90-110	0	20	mg/kg	11.11.2020 21:08	X

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

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

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

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



Larson and Associates, Inc.
Vacuum Glorieta Unit #27

Analytical Method: TPH By SW8015 Mod

Seq Number: 3142071

MB Sample Id: 7715008-1-BLK

Matrix: Solid

LCS Sample Id: 7715008-1-BKS

Prep Method: SW8015P

Date Prep: 11.11.2020

LCSD Sample Id: 7715008-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons	<50.0	1000	912	91	1060	106	70-130	15	20	mg/kg	11.11.2020 12:40	
Diesel Range Organics	<50.0	1000	988	99	1090	109	70-130	10	20	mg/kg	11.11.2020 12:40	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	95		119		129		70-130	%	11.11.2020 12:40
o-Terphenyl	112		122		119		70-130	%	11.11.2020 12:40

Analytical Method: TPH By SW8015 Mod

Seq Number: 3142071

Matrix: Solid

MB Sample Id: 7715008-1-BLK

Prep Method: SW8015P

Date Prep: 11.11.2020

Parameter	MB Result	Units	Analysis Date	Flag
Oil Range Hydrocarbons	<50.0	mg/kg	11.11.2020 12:02	

Analytical Method: TPH By SW8015 Mod

Seq Number: 3142071

Matrix: Soil

Parent Sample Id: 677462-001

MS Sample Id: 677462-001 S

Prep Method: SW8015P

Date Prep: 11.11.2020

MSD Sample Id: 677462-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons	<50.0	999	934	93	891	89	70-130	5	20	mg/kg	11.11.2020 13:39	
Diesel Range Organics	<50.0	999	1020	102	986	99	70-130	3	20	mg/kg	11.11.2020 13:39	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	119		110		70-130	%	11.11.2020 13:39
o-Terphenyl	124		121		70-130	%	11.11.2020 13:39

Analytical Method: BTEX by EPA 8021B

Seq Number: 3142010

Matrix: Solid

MB Sample Id: 7714944-1-BLK

LCS Sample Id: 7714944-1-BKS

Prep Method: SW5035A

Date Prep: 11.11.2020

LCSD Sample Id: 7714944-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0778	78	0.0797	80	70-130	2	35	mg/kg	11.11.2020 11:51	
Toluene	<0.00200	0.100	0.0806	81	0.0834	83	70-130	3	35	mg/kg	11.11.2020 11:51	
Ethylbenzene	<0.00200	0.100	0.0884	88	0.0914	91	70-130	3	35	mg/kg	11.11.2020 11:51	
m,p-Xylenes	<0.00400	0.200	0.173	87	0.180	90	70-130	4	35	mg/kg	11.11.2020 11:51	
o-Xylene	<0.00200	0.100	0.0862	86	0.0897	90	70-130	4	35	mg/kg	11.11.2020 11:51	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	97		101		99		70-130	%	11.11.2020 11:51
4-Bromofluorobenzene	112		102		100		70-130	%	11.11.2020 11:51

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

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

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

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

Larson and Associates, Inc.
 Vacuum Glorieta Unit #27
Analytical Method: BTEX by EPA 8021B

Seq Number: 3142010

Parent Sample Id: 677462-001

Matrix: Soil

MS Sample Id: 677462-001 S

Prep Method: SW5035A

Date Prep: 11.11.2020

MSD Sample Id: 677462-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0994	0.0802	81	0.0755	76	70-130	6	35	mg/kg	11.11.2020 12:32	
Toluene	<0.00199	0.0994	0.0846	85	0.0813	81	70-130	4	35	mg/kg	11.11.2020 12:32	
Ethylbenzene	<0.00199	0.0994	0.0938	94	0.0910	91	70-130	3	35	mg/kg	11.11.2020 12:32	
m,p-Xylenes	<0.00398	0.199	0.186	93	0.183	92	70-130	2	35	mg/kg	11.11.2020 12:32	
o-Xylene	<0.00199	0.0994	0.0929	93	0.0914	91	70-130	2	35	mg/kg	11.11.2020 12:32	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		97		70-130	%	11.11.2020 12:32
4-Bromofluorobenzene	105		108		70-130	%	11.11.2020 12:32

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

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

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

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

Varson & Associates, Inc.
Environmental Consultants

507 N. Marientfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to:

DATE: 11/10/2020 PAGE 1 OF 2
PO#: _____ LAB WORK ORDER#: _____
PROJECT LOCATION OR NAME: Madison State West Unit #17
LA PROJECT #: 80-3167-20 COLLECTOR: DDV/DS

477428

CHAIN-OF-CUSTODY

10
30
20

TRRP report? ☐ Yes ☒ No		S=SOIL W=WATER A=AIR		P=PAINT SL=SLUDGE OT=OTHER	
TIME ZONE: Time zone/State:					
NST					
Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers
S-1,1'		11/9/20	12:50	S	1
S-1,3'			12:52		
S-1,5'			12:54		
S-1,8'			12:56		
S-2,1'		11/10/20	10:46		
S-2,1.5'			10:42		
S-4,1'			11:00		
S-4,2.5'			11:02		
S-3,1'			11:11		
S-3,2.5'			11:13		
S-5,1'			11:49		
S-5,2.5'			11:51		
S-7,1'			12:04		
S-7,1.5'			12:06		
S-10,0.5'			12:15		
TOTAL					15
RELINQUISHED BY: (Signature)		DATE/TIME		RECEIVED BY: (Signature)	
RELINQUISHED BY: (Signature)		DATE/TIME		RECEIVED BY: (Signature)	
RELINQUISHED BY: (Signature)		DATE/TIME		RECEIVED BY: (Signature)	
LABORATORY: Xenco		DATE/TIME		RECEIVED BY: (Signature)	
		TURN AROUND TIME			
		NORMAL ☒			
		1 DAY ☐			
		2 DAY ☐			
		OTHER ☐			
		LABORATORY USE ONLY:			
		RECEIVING TEMP: 1.9		THERM: IR-8	
		CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED			
		CARRIER BILL #			
		HAND DELIVERED			

677462

Varson & Associates, Inc.
Environmental Consultants

Environmental Consultants

507 N. Marientfeld, Ste. 200

Midland, TX 79701

432-687-0901

Data Reported to:

DATE: 11/10/2020 PAGE 2 OF 2
PO#: _____ LAB WORK ORDER#: _____
PROJECT LOCATION OR NAME: Valuam Shriekts abst cut #22
LAI PROJECT # 20-0107-20 COLLECTOR: 201105

LAB WORK ORDER#:

PAGE 8 OF 7

LA PROJECT #: 20-0107-20

COLLECTOR: DA/DS

TRRP report?		S=SOIL	P=PAINT
☐ Yes	☒ No	W=WATER	SL=SLUDGE
	A=AIR	OT=OTHER	
TIME ZONE:			
Time zone/State:			
MST			
Field Sample I.D.	Lab #	Date	Time
5-1015		11/10/02	12:17
	Matrix		
	# of Containers		
	HCl		
	HNO ₃		
	H ₂ SO ₄ ☐ NaOH ☐		
	ICE		
	UNPRESSERVED		
ANALYSES			
	BTEX ☒ MTBE ☐		
	TPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐		
	GASOLINE MOD 8015 ☒		
	DIESEL - MOD 8015 ☒		
	OIL - MOD 8015 ☒		
	VOC 8280 ☐		
	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐		
	8081 PESTICIDES ☐ 8151 HERBICIDES ☐		
	8082 PCBs ☐		
	TBLP - METALS (RCRA) ☐ TOLP VOC ☐		
	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐		
	TOTAL METALS (RCRA) ☐ OTHER LIST ☐		
	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐		
	RO ☐ TOX ☐ FLASHPOINT ☐		
	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐		
	pH ☐ HEXAVALENT CHROMIUM ☐		
	EXPLOSIVES ☐ PECHLORATE ☐		
	CHLORIDES ☐ ANIONS ☐ ALKALINITY ☐		
FIELD NOTES			

TOTAL

RELINQUISHED BY: (Signature)

DATE/TIME

RECEIVED BY: (Signature)

RELINQUISHED BY: (Signature)

DATE/TIME

RECEIVED BY: (Signature)

RELINQUISHED BY: (Signature)

DATE/TIME

RECEIVED BY: (Signature)

LABORATORY: Xenco

TURN AROUND TIME

LABORATORY USE ONLY:

RECEIVING TEMP: 19

THERM#-

428

CUSTODY SEALS - ☒ BROKEN ☐ INTACT ☐ NOT USED

CARRIER BILL #

☐ HAND DELIVERED

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: Larson and Associates, Inc.**Date/ Time Received:** 11.11.2020 08.53.00 AM**Work Order #:** 677462**Acceptable Temperature Range:** 0 - 6 degC**Air and Metal samples Acceptable Range:** Ambient**Temperature Measuring device used :** iR-8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1.9
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	N/A
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by: Jessica Kramer
Jessica Kramer

Date: 11.11.2020

Checklist reviewed by: Holly Taylor
Holly Taylor

Date: 11.11.2020

Certificate of Analysis Summary 686172

Larson and Associates, Inc., Midland, TX

Project Name: Vacuum Glorieta West Unit #27

Project Id: 20-0107-20

Date Received in Lab: Wed 01.27.2021 08:36

Contact: Mark Larson

Report Date: 01.29.2021 16:28

Project Location:

Project Manager: Holly Taylor

Analysis Requested	Lab Id:	686172-001	686172-002	686172-003	686172-004	686172-006	686172-008
	Field Id:	S-2,5'	S-2, 10'	S-2, 15'	S-3, 5'	S-4,5'	S-5,5'
	Depth:						
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	01.26.2021 11:00	01.26.2021 11:04	01.26.2021 11:20	01.26.2021 11:43	01.26.2021 12:30	01.26.2021 13:09
Chloride by EPA 300	Extracted:	01.28.2021 08:15	01.28.2021 08:15	01.28.2021 08:15	01.28.2021 08:15	01.28.2021 08:15	01.28.2021 08:15
	Analyzed:	01.28.2021 17:36	01.28.2021 17:52	01.28.2021 17:58	01.28.2021 18:03	01.28.2021 18:14	01.28.2021 18:35
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		472 5.02	514 4.99	147 4.97	52.9 5.02	260 5.00	1250 5.02

BRL - Below Reporting Limit

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



Certificate of Analysis Summary 686172

Larson and Associates, Inc., Midland, TX

Project Name: Vacuum Glorieta West Unit #27

Project Id: 20-0107-20

Date Received in Lab: Wed 01.27.2021 08:36

Contact: Mark Larson

Report Date: 01.29.2021 16:28

Project Location:

Project Manager: Holly Taylor

Analysis Requested	Lab Id:	686172-009					
	Field Id:	S-5.10'					
	Depth:						
	Matrix:	SOIL					
	Sampled:	01.26.2021 13:18					
Chloride by EPA 300	Extracted:	01.28.2021 08:15					
	Analyzed:	01.28.2021 18:40					
	Units/RL:	mg/kg RL					
Chloride		104 4.98					

BRL - Below Reporting Limit

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



Analytical Report 686172

for

Larson and Associates, Inc.

Project Manager: Mark Larson

Vacuum Glorieta West Unit #27

20-0107-20

01.29.2021

Collected By: Client



**1211 W. Florida Ave
Midland TX 79701**

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-38), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2020-014), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-20-26), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-24)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-20-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)



01.29.2021

Project Manager: **Mark Larson**

Larson and Associates, Inc.

P. O. Box 50685

Midland, TX 79710

Reference: Eurofins Xenco, LLC Report No(s): **686172**

Vacuum Glorieta West Unit #27

Project Address:

Mark Larson:

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 Eurofins Xenco, LLC Report Number(s) 686172. 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 Eurofins Xenco, LLC. 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. 686172 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads "Holly Taylor".

Holly Taylor
Project Manager

A Small Business and Minority Company

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

**Sample Cross Reference 686172****Larson and Associates, Inc., Midland, TX**

Vacuum Glorieta West Unit #27

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
S-2,5'	S	01.26.2021 11:00		686172-001
S-2, 10'	S	01.26.2021 11:04		686172-002
S-2, 15'	S	01.26.2021 11:20		686172-003
S-3, 5'	S	01.26.2021 11:43		686172-004
S-4,5'	S	01.26.2021 12:30		686172-006
S-5,5'	S	01.26.2021 13:09		686172-008
S-5,10'	S	01.26.2021 13:18		686172-009
S-3,10'	S	01.26.2021 11:45		Not Analyzed
S-4,10'	S	01.26.2021 12:39		Not Analyzed



CASE NARRATIVE

Client Name: Larson and Associates, Inc.

Project Name: Vacuum Glorieta West Unit #27

Project ID: 20-0107-20
Work Order Number(s): 686172

Report Date: 01.29.2021
Date Received: 01.27.2021

Sample receipt non conformances and comments:

1/29/2021 1.001 Revise to remove samples 005 and 007 per COC. HT

Sample receipt non conformances and comments per sample:

None

**Certificate of Analytical Results 686172****Larson and Associates, Inc., Midland, TX**

Vacuum Glorieta West Unit #27

Sample Id: S-2,5'
Lab Sample Id: 686172-001

Matrix: Soil
Date Collected: 01.26.2021 11:00

Date Received: 01.27.2021 08:36

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 01.28.2021 08:15

% Moisture:
Basis: Wet Weight

Seq Number: 3149314

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	472	5.02	mg/kg	01.28.2021 17:36		1



Certificate of Analytical Results 686172

Larson and Associates, Inc., Midland, TX

Vacuum Glorieta West Unit #27

Sample Id: **S-2, 10'**
Lab Sample Id: 686172-002

Matrix: Soil
Date Collected: 01.26.2021 11:04

Date Received: 01.27.2021 08:36

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 01.28.2021 08:15

% Moisture:
Basis: Wet Weight

Seq Number: 3149314

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	514	4.99	mg/kg	01.28.2021 17:52		1

**Certificate of Analytical Results 686172****Larson and Associates, Inc., Midland, TX**

Vacuum Glorieta West Unit #27

Sample Id: S-2, 15'
Lab Sample Id: 686172-003

Matrix: Soil
Date Collected: 01.26.2021 11:20

Date Received: 01.27.2021 08:36

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 01.28.2021 08:15

% Moisture:
Basis: Wet Weight

Seq Number: 3149314

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	147	4.97	mg/kg	01.28.2021 17:58		1

**Certificate of Analytical Results 686172****Larson and Associates, Inc., Midland, TX**

Vacuum Glorieta West Unit #27

Sample Id: S-3, 5'
Lab Sample Id: 686172-004

Matrix: Soil
Date Collected: 01.26.2021 11:43

Date Received: 01.27.2021 08:36

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 01.28.2021 08:15

% Moisture:
Basis: Wet Weight

Seq Number: 3149314

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	52.9	5.02	mg/kg	01.28.2021 18:03		1

**Certificate of Analytical Results 686172****Larson and Associates, Inc., Midland, TX**

Vacuum Glorieta West Unit #27

Sample Id: **S-4,5'**
Lab Sample Id: 686172-006

Matrix: Soil
Date Collected: 01.26.2021 12:30

Date Received: 01.27.2021 08:36

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 01.28.2021 08:15

% Moisture:
Basis: Wet Weight

Seq Number: 3149314

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	260	5.00	mg/kg	01.28.2021 18:14		1

**Certificate of Analytical Results 686172****Larson and Associates, Inc., Midland, TX**

Vacuum Glorieta West Unit #27

Sample Id: S-5,5'
Lab Sample Id: 686172-008

Matrix: Soil
Date Collected: 01.26.2021 13:09

Date Received: 01.27.2021 08:36

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 01.28.2021 08:15

% Moisture:
Basis: Wet Weight

Seq Number: 3149314

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1250	5.02	mg/kg	01.28.2021 18:35		1

**Certificate of Analytical Results 686172****Larson and Associates, Inc., Midland, TX**

Vacuum Glorieta West Unit #27

Sample Id: **S-5.10'**
Lab Sample Id: 686172-009

Matrix: Soil
Date Collected: 01.26.2021 13:18

Date Received: 01.27.2021 08:36

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 01.28.2021 08:15

% Moisture:
Basis: Wet Weight

Seq Number: 3149314

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	104	4.98	mg/kg	01.28.2021 18:40		1

Flagging Criteria

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit. **ND** Not Detected.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



Larson and Associates, Inc.
Vacuum Glorieta West Unit #27

Analytical Method: Chloride by EPA 300

Seq Number: 3149314

MB Sample Id: 7720191-1-BLK

Matrix: Solid

LCS Sample Id: 7720191-1-BKS

Prep Method: E300P

Date Prep: 01.28.2021

LCSD Sample Id: 7720191-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	261	104	262	105	90-110	0	20	mg/kg	01.28.2021 16:54	

Analytical Method: Chloride by EPA 300

Seq Number: 3149314

Parent Sample Id: 686168-007

Matrix: Soil

MS Sample Id: 686168-007 S

Prep Method: E300P

Date Prep: 01.28.2021

MSD Sample Id: 686168-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	17.5	250	279	105	279	105	90-110	0	20	mg/kg	01.28.2021 17:10	

Analytical Method: Chloride by EPA 300

Seq Number: 3149314

Parent Sample Id: 686172-007

Matrix: Soil

MS Sample Id: 686172-007 S

Prep Method: E300P

Date Prep: 01.28.2021

MSD Sample Id: 686172-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	328	253	585	102	583	101	90-110	0	20	mg/kg	01.28.2021 18:24	

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

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

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

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

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: Larson and Associates, Inc.**Date/ Time Received:** 01.27.2021 08.36.00 AM**Work Order #:** 686172**Acceptable Temperature Range:** 0 - 6 degC**Air and Metal samples Acceptable Range:** Ambient**Temperature Measuring device used :** IR8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	-1.8
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	N/A
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Date: 01.27.2021

Checklist reviewed by:

Holly Taylor

Date: 01.28.2021

Appendix D

Photographs

Tracking Number: nRM2023058280
Delineation Report and Remediation Plan
Chevron USA, Inc., Vacuum Glorieta West Unit #27
Produced Water Release
March 15, 2021



View of location sign and impacted area, September 2, 2020



Impacted area viewing west, September 2, 2020

Tracking Number: nRM2023058280
Delineation Report and Remediation Plan
Chevron USA, Inc., Vacuum Glorietta West Unit #27
Produced Water Release
March 15, 2021



Impacted area viewing east, September 2, 2020



Impacted area viewing north, September 2, 2020

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

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

CONDITIONS

Action 21481

CONDITIONS OF APPROVAL

Operator:	CHEVRON U S A INC	6301 Deauville Blvd	Midland, TX79706	OGRID:	4323	Action Number:	21481	Action Type:	C-141
OCD Reviewer	Condition								
chensley	None								