State of New Mexico
Oil Conservation Division

Incident ID	nRM2023057625
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?	100 (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.

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	nRM2023057625
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: 10-14-20

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

OCD Only

Received by: Cristina Eads Date: 10/14/2020

State of New Mexico
Oil Conservation Division

Incident ID	nRM2023057625
District RP	
Facility ID	
Application ID	

Remediation Plan

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

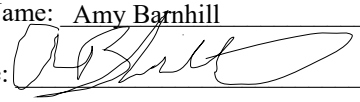
- [x] Detailed description of proposed remediation technique
- [x] Scaled sitemap with GPS coordinates showing delineation points
- [x] Estimated volume of material to be remediated
- [x] Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- [x] Proposed schedule for remediation (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

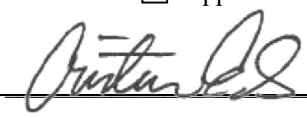
Signature:  Date: 10-14-20

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

OCD Only

Received by: Cristina Eads Date: 10/14/2020

- [x] Approved
- [ ] Approved with Attached Conditions of Approval
- [ ] Denied
- [ ] Deferral Approved

Signature:  Date: 01/21/2021

Tracking Number: nRM2023057625
Delineation Report and Remediation Plan
BF Harrison B #013
Produced Water Release
Lea County, New Mexico

Latitude: N 32.3247871°
Longitude: W -103.174614°

LAI Project No. 20-0107-19

October 9, 2020

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

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Appendices

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 BF Harrison B #013 (Site) located in Unit D (NE/4, NW/4), Section 09, Township 23 South, Range 37 East in Lea County, New Mexico. The geodetic position is North 32.3247871° and West -103.174614°. Figure 1 presents a topographic map. Figure 2 presents an aerial map.

1.1 Background

The release was discovered on August 6, 2020, due to corrosion in a flow line. Chevron reported that approximately 18 barrels (bbls) of produced water were released. Approximately 15 bbls of produced water were recovered. The affected area measures approximately 2,902 square feet. Chevron submitted the initial C-141 OCD and was assigned incident number nRM2023057625. Appendix A presents initial Chevron spill documentation.

1.2 Physical Setting

The physical setting is as follows:

- The surface elevation is approximately 3,318 feet above mean sea level (msl).
- The surface topography gradually slopes to the south.
- 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 “Pyote loamy fine sand”, consisting of 0 to 25 inches of loamy fine sand, underlain by 25 to 60 inches of fine sandy loam.
- The geology consists of the Quaternary age eolian sand deposited as dune, dune ridges, and sheets undivided (USGS).
- Groundwater was reported at approximately 100 feet below ground surface (bgs) in 1991.
- According to the New Mexico Office of the State Engineer (OSE) the nearest freshwater well is located approximately 0.03 miles or 181 feet southeast of the Site in Section 9, Township 23 South, Range 37, 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.

2.0 DELINEATION

On August 21 and September 30, 2020, LAI personnel used a stainless steel hand auger to collect soil samples from ten (10) locations inside of the spill area (S-1 through S-6) and in each cardinal direction of the spill (S-7 through S-10). The samples were collected between approximately 0.5 and 1-foot bgs depending on subsurface conditions. 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 M300, respectively. Figure 2 presents an aerial map showing the sample locations.

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

Sample ID	Depth (Feet)	TPH Concentration (mg/Kg)	Chloride Concentration (mg/Kg)
S-1	0.5	569	--
S-1	1	242	--
S-2	0.5	557	--
S-3	0.5	446	--
S-4	0.5	--	1,390
S-6	0.5	103	--
S-8	0.5	104	--

On September 25, 2020, LAI personnel used a Geoprobe® 7822DT direct push rig to further delineate TPH and chloride at sample location S-1. Soil samples were collected at approximately one (1), three (3), five (5), and ten (10) feet bgs. The samples were analyzed for BTEX, TPH, and chloride. 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 less than 50 feet bgs.

3.0 REMEDIATION PLAN

Chevron proposes the following remedial actions:

- Excavate soil from an area measuring approximately 3,306 square feet, encompassing S-1 through S-4, S-6, and S-8 to approximately 1-foot 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 on the pad 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
BF Harrison 13
Lea County, New Mexico
North 32° 6' 28.78", West 103° 19' 37.36"

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	8/21/2020	In-Situ	<0.00200	<0.00200	<49.9	407	162	**569**	243
	1	8/21/2020	In-Situ	<0.00200	<0.00200	<50.0	165	77.0	**242**	154
	1	9/25/2020	In-Situ	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	46.4
	3	9/25/2020	In-Situ	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	18.2
	5	9/25/2020	In-Situ	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	33.9
	10	9/25/2020	In-Situ	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	67.9
S-2	0.5	8/21/2020	In-Situ	<0.00201	<0.00201	<50.0	423	134	**557**	378
	1	8/21/2020	In-Situ	<0.00201	<0.00201	<49.9	<49.9	<49.9	<49.9	114
S-3	0.5	8/21/2020	In-Situ	<0.00200	<0.00200	<49.8	324	122	**446**	246
	1	8/21/2020	In-Situ	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	84.0
S-4	0.5	8/21/2020	In-Situ	<0.00199	<0.00199	<49.8	<49.8	<49.8	<49.8	**1,390**
	1	8/21/2020	In-Situ	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	226
S-5	0.5	8/21/2020	In-Situ	<0.00198	<0.00198	<49.9	<49.9	<49.9	<49.9	14.7
	1	8/21/2020	In-Situ	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	10.0
S-6	0.5	8/21/2020	In-Situ	<0.00198	<0.00198	<50.0	103	<50.0	**103**	15.9
	1	8/21/2020	In-Situ	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	12.1
S-7	0.5	8/21/2020	In-Situ	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	96.6
	1	8/21/2020	In-Situ	<0.00201	<0.00201	<49.9	<49.9	<49.9	<49.9	55.5

Table 1
Soil Sample Analytical Data Summary
BF Harrison 13
Lea County, New Mexico
North 32° 6' 28.78", West 103° 19' 37.36"

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-8	0.5	8/21/2020	In-Situ	<0.00202	<0.00202	<49.8	104	<49.8	**104**	35.7
	1	8/21/2020	In-Situ	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	30.3
S-9	0.5	9/30/2020	In-Situ	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	86.8
	1	9/30/2020	In-Situ	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	91.1
S-10	0.5	9/30/2020	In-Situ	<0.00198	<0.00198	<49.9	<49.9	<49.9	<49.9	26.1
	1	9/30/2020	In-Situ	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	83.6

Notes: Analysis performed by Xenco Laboratories
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

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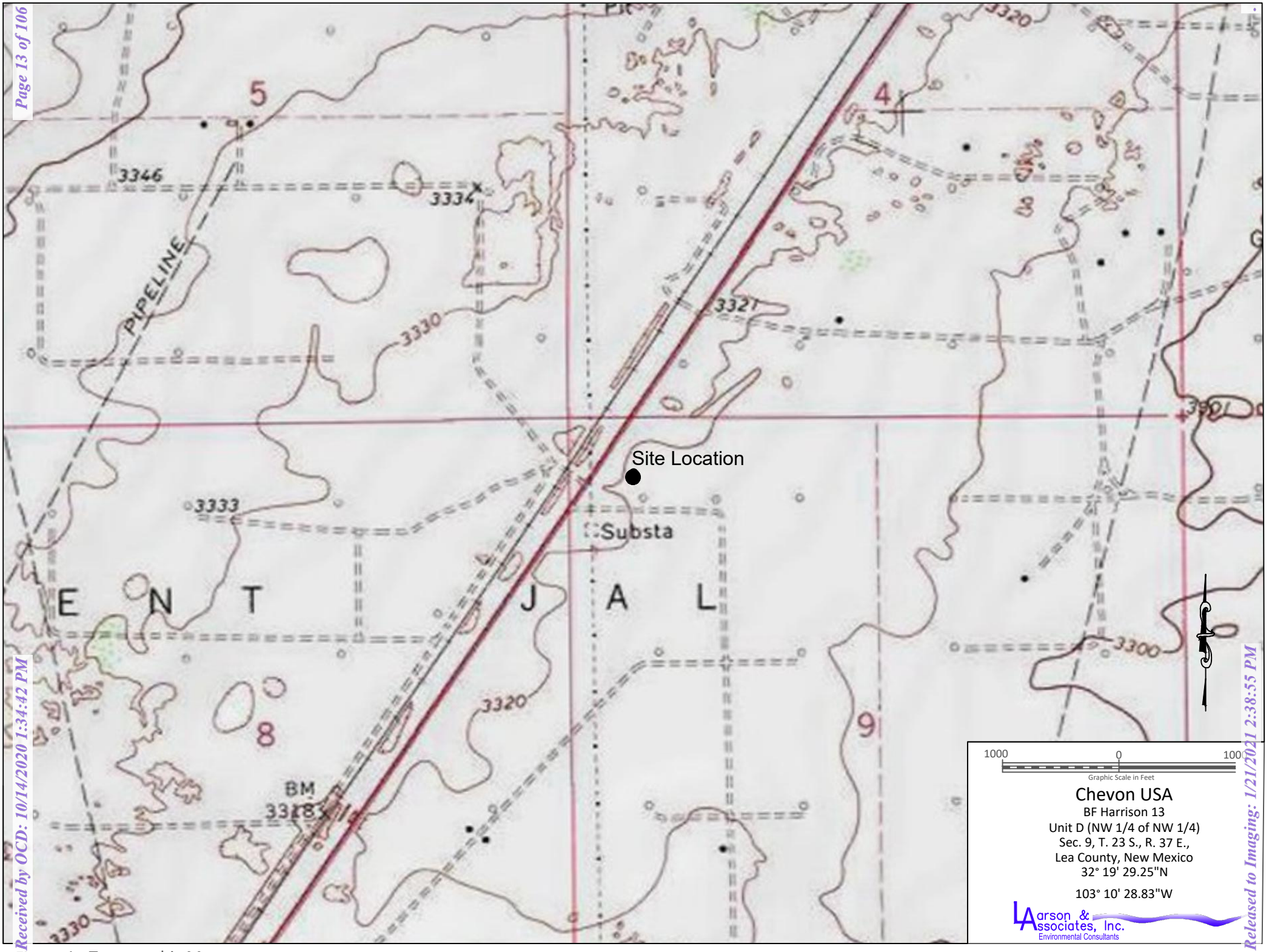

Figure 1 - Topographic Map

Received by OCD: 10/14/2020 1:34:42 PM

Released to Imaging: 1/21/2021 2:38:55 PM

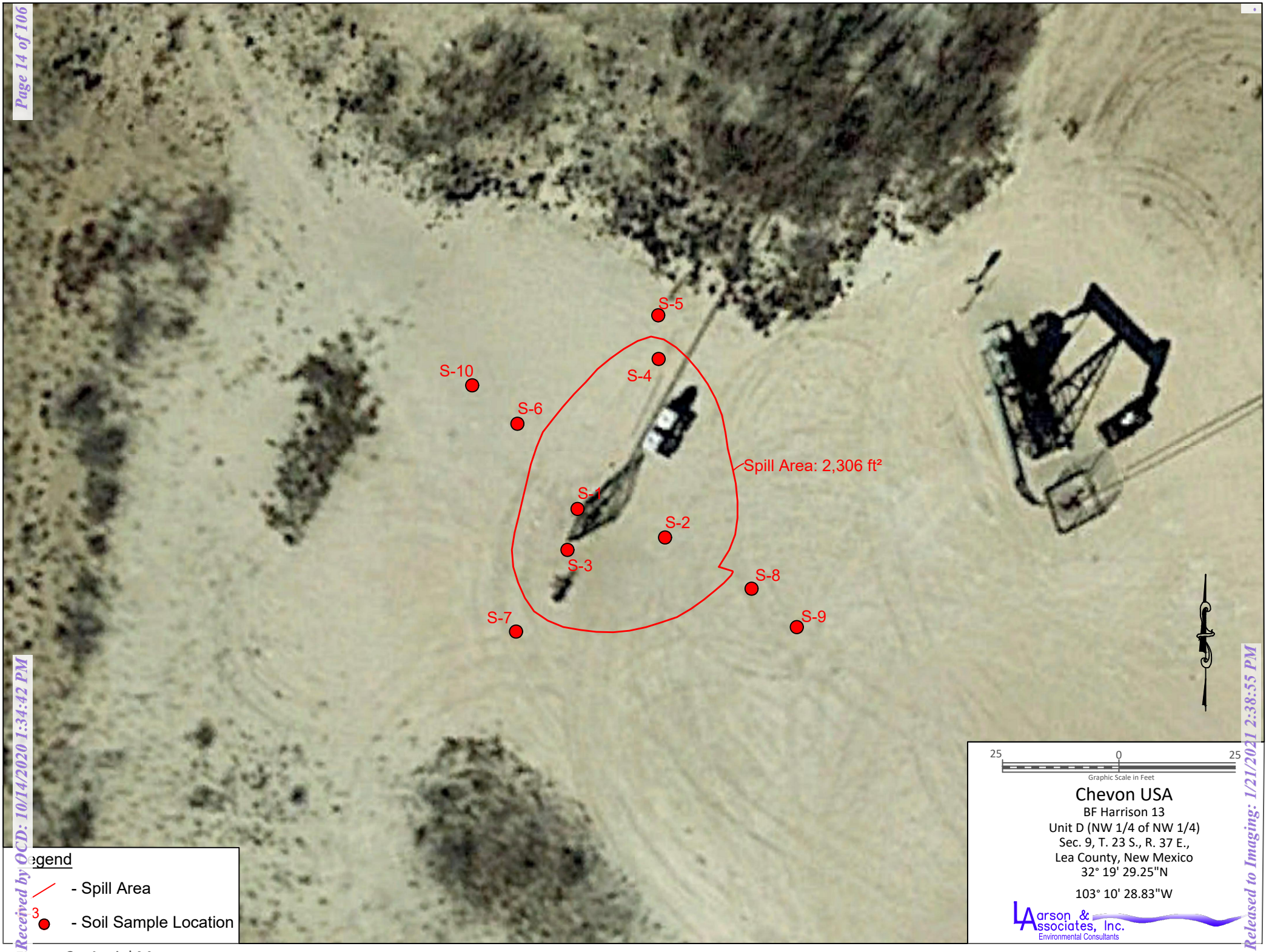

Figure 2 - Aerial Map

Received by OCD: 10/14/2020 1:34:42 PM

Released to Imaging: 1/21/2021 2:38:55 PM

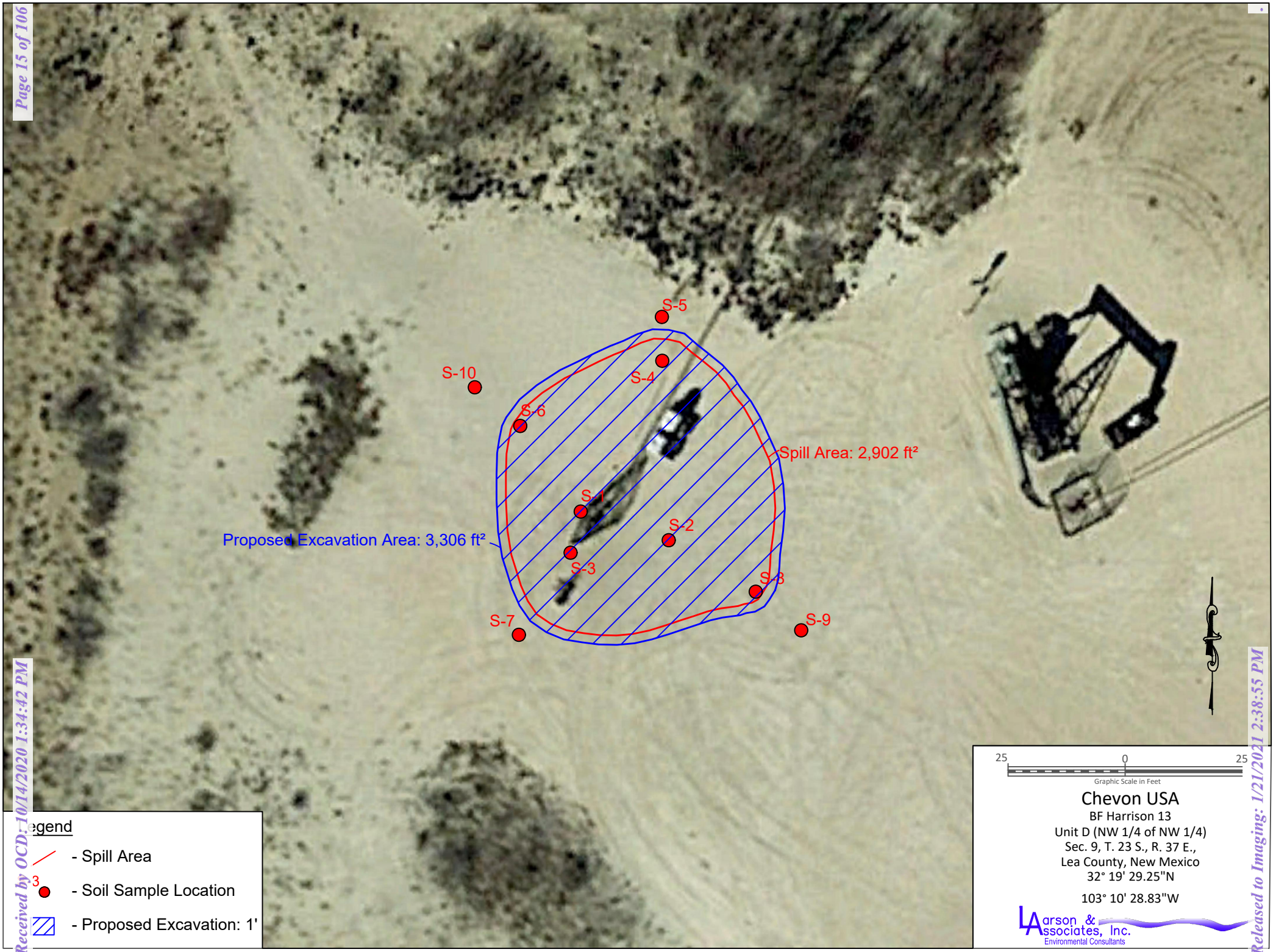

Figure 3 - Aerial Map Showing Proposed Excavation Location

Received by OCD: 10/14/2020 1:34:42 PM

Released to Imaging: 1/21/2021 2:38:55 PM

Appendix A

Chevron Spill Calculation

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Incident Date			7/28/2020		
Incident Time			Start Time	End Time	
			2:30 PM	5:00 PM	
Location	BF Harrison 13				
Lat/Long					
All volumes in following table in barrels					
Area	Standing Liquid	In Soil	dimensions / shape	Oil Volume	Water Volume
1	15x13		rectangle	0.18	1.27
2	29x10		rectangle		2.15
3	22x12		rectangle		11.76
4	21x10		rectangle		3.12
5					
6					
7					
8					
			Total Fluid	0.18	18.3
Fluid Recovered in barrels			Oil Volume	Water Volume	
			0	15	

Appendix B

Karst Risk Potential

New Mexico Kart or No Karst - QGIS

oject Edit View Layer Settings Plugins Vector Raster Database Web Mesh Processing Help

Browser

- Favorites
- Spatial Bookmarks
- Project Home
- Home
- C:\
- D:\
- L:\
- Z:\
- GeoPackage
- SpatiaLite
- PostGIS
- MSSQL
- Oracle
- DB2
- WMS/WMTS
- XYZ Tiles
- WCS
- WFS / OGC API - Features
- OWS
- ArcGisMapServer
- ArcGisFeatureServer
- GeoNode

Layers

- Added geom info
- carlsbad_west
- Karst_or_No_Karst
  - High
  - Low
  - Medium
  -
- Bing Satellite

Type to locate (Ctrl+K)

Coordinate 671208,3577927 Scale 1:4178 Magnifier 100% Rotation

0
Graphic Scale in Feet

Chevon USA
BF Harrison 13
Unit D (NW 1/4 of NW 1/4)
Sec. 9, T. 23 S., R. 37 E.,
Lea County, New Mexico
32° 19' 29.25"N
103° 10' 28.83"W

Larson & Associates, Inc.
Environmental Consultants

Received by OCD: 10/14/2020 1:34:42 PM
Released to Imaging: 1/21/2021 2:38:55 PM

Appendix C

Laboratory Reports

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Certificate of Analysis Summary 670776

Larson and Associates, Inc., Midland, TX

Project Name: Harrison BF 13

Project Id: 20-0107-19
Contact: Mark Larson
Project Location:

Date Received in Lab: Mon 08.24.2020 08:20
Report Date: 08.25.2020 16:44
Project Manager: Holly Taylor

Analysis Requested		670776-001		670776-002		670776-003		670776-004		670776-005		670776-006	
	Lab Id:	670776-001		670776-002		670776-003		670776-004		670776-005		670776-006	
	Field Id:	S-1 0.5'		S-1 1'		S-2 0.5'		S-2 1'		S-3 0.5'		S-3 1'	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	08.21.2020 09:50		08.21.2020 09:52		08.21.2020 10:00		08.21.2020 10:02		08.21.2020 10:08		08.21.2020 10:10	
BTEX by EPA 8021B	***Extracted:***	08.24.2020 10:30		08.24.2020 10:30		08.24.2020 10:30		08.24.2020 10:30		08.24.2020 10:30		08.24.2020 10:30	
	Analyzed:	08.24.2020 13:31		08.24.2020 13:52		08.24.2020 14:17		08.24.2020 14:38		08.24.2020 14:58		08.24.2020 15:19	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200
Toluene		<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200
Ethylbenzene		<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200
m,p-Xylenes		<0.00401	0.00401	<0.00399	0.00399	<0.00402	0.00402	<0.00402	0.00402	<0.00400	0.00400	<0.00399	0.00399
o-Xylene		<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200
Total Xylenes		<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200
Total BTEX		<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200
Chloride by EPA 300	***Extracted:***	08.24.2020 14:15		08.24.2020 14:15		08.24.2020 14:15		08.24.2020 14:15		08.24.2020 14:15		08.24.2020 14:15	
	Analyzed:	08.24.2020 14:59		08.24.2020 15:04		08.24.2020 15:09		08.24.2020 15:25		08.24.2020 15:30		08.24.2020 15:35	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		243	4.98	154	5.03	378	5.00	114	4.96	246	4.95	84.0	4.95
TPH by SW8015 Mod	***Extracted:***	08.24.2020 13:00		08.24.2020 13:00		08.24.2020 13:00		08.24.2020 13:00		08.24.2020 13:00		08.24.2020 13:00	
	Analyzed:	08.24.2020 18:11		08.24.2020 18:35		08.24.2020 18:59		08.24.2020 16:51		08.24.2020 19:23		08.24.2020 19:46	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<49.9	49.9	<50.0	50.0	<50.0	50.0	<49.9	49.9	<49.8	49.8	<50.0	50.0
Diesel Range Organics (DRO)		407	49.9	165	50.0	423	50.0	<49.9	49.9	324	49.8	<50.0	50.0
Motor Oil Range Hydrocarbons (MRO)		162	49.9	77.0	50.0	134	50.0	<49.9	49.9	122	49.8	<50.0	50.0
Total TPH		569	49.9	242	50.0	557	50.0	<49.9	49.9	446	49.8	<50.0	50.0

BRL - Below Reporting Limit

Holly Taylor

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

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Certificate of Analysis Summary 670776

Larson and Associates, Inc., Midland, TX

Project Name: Harrison BF 13

Project Id: 20-0107-19
Contact: Mark Larson
Project Location:

Date Received in Lab: Mon 08.24.2020 08:20
Report Date: 08.25.2020 16:44
Project Manager: Holly Taylor

Analysis Requested													
	Lab Id:	670776-007		670776-008		670776-009		670776-010		670776-011		670776-012	
	Field Id:	S-4 0.5'		S-4 1'		S-5 0.5'		S-5 1'		S-6 0.5'		S-6 1'	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	08.21.2020 10:18		08.21.2020 10:20		08.21.2020 10:38		08.21.2020 11:40		08.21.2020 11:10		08.21.2020 11:15	
BTEX by EPA 8021B	***Extracted:***	08.24.2020 10:30		08.24.2020 10:30		08.24.2020 10:30		08.24.2020 10:30		08.24.2020 10:30		08.24.2020 10:30	
	Analyzed:	08.24.2020 15:40		08.24.2020 16:01		08.24.2020 16:22		08.24.2020 16:42		08.24.2020 18:11		08.24.2020 18:31	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00199	0.00199	<0.00199	0.00199	<0.00198	0.00198	<0.00199	0.00199	<0.00198	0.00198	<0.00198	0.00198
Toluene		<0.00199	0.00199	<0.00199	0.00199	<0.00198	0.00198	<0.00199	0.00199	<0.00198	0.00198	<0.00198	0.00198
Ethylbenzene		<0.00199	0.00199	<0.00199	0.00199	<0.00198	0.00198	<0.00199	0.00199	<0.00198	0.00198	<0.00198	0.00198
m,p-Xylenes		<0.00398	0.00398	<0.00398	0.00398	<0.00397	0.00397	<0.00398	0.00398	<0.00396	0.00396	<0.00397	0.00397
o-Xylene		<0.00199	0.00199	<0.00199	0.00199	<0.00198	0.00198	<0.00199	0.00199	<0.00198	0.00198	<0.00198	0.00198
Total Xylenes		<0.00199	0.00199	<0.00199	0.00199	<0.00198	0.00198	<0.00199	0.00199	<0.00198	0.00198	<0.00198	0.00198
Total BTEX		<0.00199	0.00199	<0.00199	0.00199	<0.00198	0.00198	<0.00199	0.00199	<0.00198	0.00198	<0.00198	0.00198
Chloride by EPA 300	***Extracted:***	08.24.2020 14:15		08.24.2020 14:15		08.24.2020 14:15		08.24.2020 14:15		08.24.2020 14:15		08.24.2020 14:15	
	Analyzed:	08.24.2020 15:41		08.24.2020 15:46		08.24.2020 15:51		08.24.2020 16:07		08.24.2020 16:12		08.24.2020 16:28	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		1390	5.03	226	4.99	14.7	4.95	10.0	4.98	15.9	5.02	12.1	4.97
TPH by SW8015 Mod	***Extracted:***	08.24.2020 13:00		08.24.2020 13:00		08.24.2020 13:00		08.24.2020 13:00		08.24.2020 13:00		08.24.2020 13:00	
	Analyzed:	08.24.2020 20:09		08.24.2020 20:32		08.24.2020 20:55		08.24.2020 21:18		08.24.2020 22:04		08.24.2020 22:27	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<49.8	49.8	<50.0	50.0	<49.9	49.9	<50.0	50.0	<50.0	50.0	<50.0	50.0
Diesel Range Organics (DRO)		<49.8	49.8	<50.0	50.0	<49.9	49.9	<50.0	50.0	103	50.0	<50.0	50.0
Motor Oil Range Hydrocarbons (MRO)		<49.8	49.8	<50.0	50.0	<49.9	49.9	<50.0	50.0	<50.0	50.0	<50.0	50.0
Total TPH		<49.8	49.8	<50.0	50.0	<49.9	49.9	<50.0	50.0	103	50.0	<50.0	50.0

BRL - Below Reporting Limit

Holly Taylor

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

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Certificate of Analysis Summary 670776

Larson and Associates, Inc., Midland, TX

Project Name: Harrison BF 13

Project Id: 20-0107-19
Contact: Mark Larson
Project Location:

Date Received in Lab: Mon 08.24.2020 08:20
Report Date: 08.25.2020 16:44
Project Manager: Holly Taylor

Analysis Requested													
	Lab Id:	670776-013		670776-014		670776-015		670776-016					
	Field Id:	S-7 0.5'		S-7 1'		S-8 0.5'		S-8 1'					
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL					
	Sampled:	08.21.2020 11:20		08.21.2020 11:22		08.21.2020 11:28		08.21.2020 11:30					
BTEX by EPA 8021B	***Extracted:***	08.24.2020 10:30		08.24.2020 10:30		08.24.2020 10:30		08.24.2020 10:30					
	Analyzed:	08.24.2020 18:52		08.24.2020 19:13		08.24.2020 19:33		08.24.2020 19:54					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Benzene		<0.00200	0.00200	<0.00201	0.00201	<0.00202	0.00202	<0.00200	0.00200				
Toluene		<0.00200	0.00200	<0.00201	0.00201	<0.00202	0.00202	<0.00200	0.00200				
Ethylbenzene		<0.00200	0.00200	<0.00201	0.00201	<0.00202	0.00202	<0.00200	0.00200				
m,p-Xylenes		<0.00399	0.00399	<0.00402	0.00402	<0.00403	0.00403	<0.00401	0.00401				
o-Xylene		<0.00200	0.00200	<0.00201	0.00201	<0.00202	0.00202	<0.00200	0.00200				
Total Xylenes		<0.00200	0.00200	<0.00201	0.00201	<0.00202	0.00202	<0.00200	0.00200				
Total BTEX		<0.00200	0.00200	<0.00201	0.00201	<0.00202	0.00202	<0.00200	0.00200				
Chloride by EPA 300	***Extracted:***	08.24.2020 14:15		08.24.2020 14:15		08.24.2020 14:15		08.24.2020 14:15					
	Analyzed:	08.24.2020 16:33		08.24.2020 16:39		08.24.2020 16:44		08.24.2020 16:49					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		96.6	5.00	55.5	4.99	35.7	5.05	30.3	5.05				
TPH by SW8015 Mod	***Extracted:***	08.24.2020 13:00		08.24.2020 13:00		08.24.2020 13:00		08.24.2020 13:00					
	Analyzed:	08.24.2020 22:50		08.24.2020 23:13		08.24.2020 23:36		08.24.2020 23:59					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<49.9	49.9	<49.9	49.9	<49.8	49.8	<50.0	50.0				
Diesel Range Organics (DRO)		<49.9	49.9	<49.9	49.9	104	49.8	<50.0	50.0				
Motor Oil Range Hydrocarbons (MRO)		<49.9	49.9	<49.9	49.9	<49.8	49.8	<50.0	50.0				
Total TPH		<49.9	49.9	<49.9	49.9	104	49.8	<50.0	50.0				

BRL - Below Reporting Limit

Holly Taylor

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Analytical Report 670776

for

Larson and Associates, Inc.

Project Manager: Mark Larson

Harrison BF 13

20-0107-19

08.25.2020

Collected By: Client

1211 W. Florida Ave
Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-37), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2019-058), 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 (T104704219-20-23)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)

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08.25.2020

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

Reference: Eurofins Xenco, LLC Report No(s): **670776**
Harrison BF 13
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) 670776. 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. 670776 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,

Holly Taylor

Holly Taylor
Project Manager

A Small Business and Minority Company

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Released to Imaging: 1/21/2021 2:38:55 PM

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Sample Cross Reference 670776

Larson and Associates, Inc., Midland, TX

Harrison BF 13

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
S-1 0.5'	S	08.21.2020 09:50		670776-001
S-1 1'	S	08.21.2020 09:52		670776-002
S-2 0.5'	S	08.21.2020 10:00		670776-003
S-2 1'	S	08.21.2020 10:02		670776-004
S-3 0.5'	S	08.21.2020 10:08		670776-005
S-3 1'	S	08.21.2020 10:10		670776-006
S-4 0.5'	S	08.21.2020 10:18		670776-007
S-4 1'	S	08.21.2020 10:20		670776-008
S-5 0.5'	S	08.21.2020 10:38		670776-009
S-5 1'	S	08.21.2020 11:40		670776-010
S-6 0.5'	S	08.21.2020 11:10		670776-011
S-6 1'	S	08.21.2020 11:15		670776-012
S-7 0.5'	S	08.21.2020 11:20		670776-013
S-7 1'	S	08.21.2020 11:22		670776-014
S-8 0.5'	S	08.21.2020 11:28		670776-015
S-8 1'	S	08.21.2020 11:30		670776-016

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CASE NARRATIVE

Client Name: Larson and Associates, Inc.

Project Name: Harrison BF 13

Project ID: *20-0107-19*
Work Order Number(s): *670776*

Report Date: *08.25.2020*
Date Received: *08.24.2020*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3135428 BTEX by EPA 8021B

Lab Sample ID 670776-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Benzene recovered below QC limits in the Matrix Spike. Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 670776-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016.

The Laboratory Control Sample for Toluene, Benzene, m,p-Xylenes, Ethylbenzene, o-Xylene is within laboratory Control Limits, therefore the data was accepted.

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Certificate of Analytical Results 670776

Larson and Associates, Inc., Midland, TX

Harrison BF 13

Sample Id:	**S-1 0.5'**	Matrix:	Soil	Date Received:	08.24.2020 08:20
Lab Sample Id:	670776-001	Date Collected:	08.21.2020 09:50		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	08.24.2020 14:15	Basis:	Wet Weight
Seq Number:	3135388				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**243**	4.98	mg/kg	08.24.2020 14:59		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	08.24.2020 13:00	Basis:	Wet Weight
Seq Number:	3135480				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	08.24.2020 18:11	U	1
Diesel Range Organics (DRO)	C10C28DRO	**407**	49.9	mg/kg	08.24.2020 18:11		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**162**	49.9	mg/kg	08.24.2020 18:11		1
Total TPH	PHC635	**569**	49.9	mg/kg	08.24.2020 18:11		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-130	08.24.2020 18:11	
o-Terphenyl	84-15-1	102	%	70-130	08.24.2020 18:11	

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Certificate of Analytical Results 670776

Larson and Associates, Inc., Midland, TX

Harrison BF 13

Sample Id:	**S-1 0.5'**	Matrix:	Soil	Date Received:	08.24.2020 08:20
Lab Sample Id:	670776-001	Date Collected:	08.21.2020 09:50		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	08.24.2020 10:30	Basis:	Wet Weight
Seq Number:	3135428				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.24.2020 13:31	UX	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.24.2020 13:31	UX	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.24.2020 13:31	UX	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	08.24.2020 13:31	UX	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.24.2020 13:31	UX	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.24.2020 13:31	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.24.2020 13:31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	103	%	70-130	08.24.2020 13:31	
1,4-Difluorobenzene	540-36-3	100	%	70-130	08.24.2020 13:31	

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Certificate of Analytical Results 670776

Larson and Associates, Inc., Midland, TX

Harrison BF 13

Sample Id:	**S-1 1'**	Matrix:	Soil	Date Received:	08.24.2020 08:20
Lab Sample Id:	670776-002	Date Collected:	08.21.2020 09:52		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	08.24.2020 14:15	Basis:	Wet Weight
Seq Number:	3135388				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**154**	5.03	mg/kg	08.24.2020 15:04		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	08.24.2020 13:00	Basis:	Wet Weight
Seq Number:	3135480				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	08.24.2020 18:35	U	1
Diesel Range Organics (DRO)	C10C28DRO	**165**	50.0	mg/kg	08.24.2020 18:35		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**77.0**	50.0	mg/kg	08.24.2020 18:35		1
Total TPH	PHC635	**242**	50.0	mg/kg	08.24.2020 18:35		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-130	08.24.2020 18:35	
o-Terphenyl	84-15-1	104	%	70-130	08.24.2020 18:35	

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Certificate of Analytical Results 670776

Larson and Associates, Inc., Midland, TX

Harrison BF 13

Sample Id:	**S-1 1'**	Matrix:	Soil	Date Received:	08.24.2020 08:20
Lab Sample Id:	670776-002	Date Collected:	08.21.2020 09:52		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	08.24.2020 10:30	Basis:	Wet Weight
Seq Number:	3135428				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.24.2020 13:52	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.24.2020 13:52	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.24.2020 13:52	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.24.2020 13:52	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.24.2020 13:52	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.24.2020 13:52	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.24.2020 13:52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	94	%	70-130	08.24.2020 13:52	
1,4-Difluorobenzene	540-36-3	101	%	70-130	08.24.2020 13:52	

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Certificate of Analytical Results 670776

Larson and Associates, Inc., Midland, TX

Harrison BF 13

Sample Id:	**S-2 0.5'**	Matrix:	Soil	Date Received:	08.24.2020 08:20
Lab Sample Id:	670776-003	Date Collected:	08.21.2020 10:00		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	08.24.2020 14:15	Basis:	Wet Weight
Seq Number:	3135388				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**378**	5.00	mg/kg	08.24.2020 15:09		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	08.24.2020 13:00	Basis:	Wet Weight
Seq Number:	3135480				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	08.24.2020 18:59	U	1
Diesel Range Organics (DRO)	C10C28DRO	**423**	50.0	mg/kg	08.24.2020 18:59		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**134**	50.0	mg/kg	08.24.2020 18:59		1
Total TPH	PHC635	**557**	50.0	mg/kg	08.24.2020 18:59		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-130	08.24.2020 18:59	
o-Terphenyl	84-15-1	112	%	70-130	08.24.2020 18:59	

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Certificate of Analytical Results 670776

Larson and Associates, Inc., Midland, TX

Harrison BF 13

Sample Id:	**S-2 0.5'**	Matrix:	Soil	Date Received:	08.24.2020 08:20
Lab Sample Id:	670776-003	Date Collected:	08.21.2020 10:00		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	08.24.2020 10:30	Basis:	Wet Weight
Seq Number:	3135428				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	08.24.2020 14:17	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	08.24.2020 14:17	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	08.24.2020 14:17	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	08.24.2020 14:17	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	08.24.2020 14:17	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	08.24.2020 14:17	U	1
Total BTEX		<0.00201	0.00201	mg/kg	08.24.2020 14:17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	104	%	70-130	08.24.2020 14:17	
1,4-Difluorobenzene	540-36-3	101	%	70-130	08.24.2020 14:17	

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Certificate of Analytical Results 670776

Larson and Associates, Inc., Midland, TX

Harrison BF 13

Sample Id: **S-2 1'** Matrix: Soil Date Received:08.24.2020 08:20

Lab Sample Id: 670776-004 Date Collected: 08.21.2020 10:02

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 08.24.2020 14:15 Basis: Wet Weight

Seq Number: 3135388

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**114**	4.96	mg/kg	08.24.2020 15:25		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P

Tech: DVM % Moisture:

Analyst: ARM Date Prep: 08.24.2020 13:00 Basis: Wet Weight

Seq Number: 3135480

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	08.24.2020 16:51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	08.24.2020 16:51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	08.24.2020 16:51	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	08.24.2020 16:51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	72	%	70-130	08.24.2020 16:51	
o-Terphenyl	84-15-1	71	%	70-130	08.24.2020 16:51	

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Larson and Associates, Inc., Midland, TX

Harrison BF 13

Sample Id:	**S-2 1'**	Matrix:	Soil	Date Received:	08.24.2020 08:20
Lab Sample Id:	670776-004	Date Collected:	08.21.2020 10:02		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	08.24.2020 10:30	Basis:	Wet Weight
Seq Number:	3135428				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	08.24.2020 14:38	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	08.24.2020 14:38	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	08.24.2020 14:38	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	08.24.2020 14:38	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	08.24.2020 14:38	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	08.24.2020 14:38	U	1
Total BTEX		<0.00201	0.00201	mg/kg	08.24.2020 14:38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	108	%	70-130	08.24.2020 14:38	
1,4-Difluorobenzene	540-36-3	101	%	70-130	08.24.2020 14:38	

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Harrison BF 13

Sample Id:	**S-3 0.5'**	Matrix:	Soil	Date Received:	08.24.2020 08:20
Lab Sample Id:	670776-005	Date Collected:	08.21.2020 10:08		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	08.24.2020 14:15	Basis:	Wet Weight
Seq Number:	3135388				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**246**	4.95	mg/kg	08.24.2020 15:30		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	08.24.2020 13:00	Basis:	Wet Weight
Seq Number:	3135480				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	08.24.2020 19:23	U	1
Diesel Range Organics (DRO)	C10C28DRO	**324**	49.8	mg/kg	08.24.2020 19:23		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**122**	49.8	mg/kg	08.24.2020 19:23		1
Total TPH	PHC635	**446**	49.8	mg/kg	08.24.2020 19:23		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-130	08.24.2020 19:23	
o-Terphenyl	84-15-1	104	%	70-130	08.24.2020 19:23	

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Harrison BF 13

Sample Id:	**S-3 0.5'**	Matrix:	Soil	Date Received:	08.24.2020 08:20
Lab Sample Id:	670776-005	Date Collected:	08.21.2020 10:08		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	08.24.2020 10:30	Basis:	Wet Weight
Seq Number:	3135428				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.24.2020 14:58	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.24.2020 14:58	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.24.2020 14:58	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	08.24.2020 14:58	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.24.2020 14:58	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.24.2020 14:58	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.24.2020 14:58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	106	%	70-130	08.24.2020 14:58	
1,4-Difluorobenzene	540-36-3	99	%	70-130	08.24.2020 14:58	

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Harrison BF 13

Sample Id: **S-3 1'** Matrix: Soil Date Received:08.24.2020 08:20

Lab Sample Id: 670776-006 Date Collected: 08.21.2020 10:10

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 08.24.2020 14:15 Basis: Wet Weight

Seq Number: 3135388

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**84.0**	4.95	mg/kg	08.24.2020 15:35		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P

Tech: DVM % Moisture:

Analyst: ARM Date Prep: 08.24.2020 13:00 Basis: Wet Weight

Seq Number: 3135480

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	08.24.2020 19:46	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	08.24.2020 19:46	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	08.24.2020 19:46	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	08.24.2020 19:46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-130	08.24.2020 19:46	
o-Terphenyl	84-15-1	104	%	70-130	08.24.2020 19:46	

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Harrison BF 13

Sample Id:	**S-3 1'**	Matrix:	Soil	Date Received:	08.24.2020 08:20
Lab Sample Id:	670776-006	Date Collected:	08.21.2020 10:10		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	08.24.2020 10:30	Basis:	Wet Weight
Seq Number:	3135428				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.24.2020 15:19	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.24.2020 15:19	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.24.2020 15:19	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.24.2020 15:19	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.24.2020 15:19	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.24.2020 15:19	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.24.2020 15:19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	99	%	70-130	08.24.2020 15:19	
4-Bromofluorobenzene	460-00-4	107	%	70-130	08.24.2020 15:19	

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Harrison BF 13

Sample Id: **S-4 0.5'** Matrix: Soil Date Received:08.24.2020 08:20

Lab Sample Id: 670776-007 Date Collected: 08.21.2020 10:18

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 08.24.2020 14:15 Basis: Wet Weight

Seq Number: 3135388

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1390**	5.03	mg/kg	08.24.2020 15:41		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P

Tech: DVM % Moisture:

Analyst: ARM Date Prep: 08.24.2020 13:00 Basis: Wet Weight

Seq Number: 3135480

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	08.24.2020 20:09	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	08.24.2020 20:09	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	08.24.2020 20:09	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	08.24.2020 20:09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-130	08.24.2020 20:09	
o-Terphenyl	84-15-1	101	%	70-130	08.24.2020 20:09	

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Harrison BF 13

Sample Id:	**S-4 0.5'**	Matrix:	Soil	Date Received:	08.24.2020 08:20
Lab Sample Id:	670776-007	Date Collected:	08.21.2020 10:18		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	08.24.2020 10:30	Basis:	Wet Weight
Seq Number:	3135428				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.24.2020 15:40	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.24.2020 15:40	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.24.2020 15:40	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.24.2020 15:40	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.24.2020 15:40	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.24.2020 15:40	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.24.2020 15:40	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	111	%	70-130	08.24.2020 15:40	
1,4-Difluorobenzene	540-36-3	99	%	70-130	08.24.2020 15:40	

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Harrison BF 13

Sample Id: **S-4 1'** Matrix: Soil Date Received:08.24.2020 08:20

Lab Sample Id: 670776-008 Date Collected: 08.21.2020 10:20

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 08.24.2020 14:15 Basis: Wet Weight

Seq Number: 3135388

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**226**	4.99	mg/kg	08.24.2020 15:46		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P

Tech: DVM % Moisture:

Analyst: ARM Date Prep: 08.24.2020 13:00 Basis: Wet Weight

Seq Number: 3135480

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	08.24.2020 20:32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	08.24.2020 20:32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	08.24.2020 20:32	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	08.24.2020 20:32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-130	08.24.2020 20:32	
o-Terphenyl	84-15-1	102	%	70-130	08.24.2020 20:32	

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Harrison BF 13

Sample Id:	**S-4 1'**	Matrix:	Soil	Date Received:	08.24.2020 08:20
Lab Sample Id:	670776-008	Date Collected:	08.21.2020 10:20		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	08.24.2020 10:30	Basis:	Wet Weight
Seq Number:	3135428				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.24.2020 16:01	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.24.2020 16:01	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.24.2020 16:01	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.24.2020 16:01	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.24.2020 16:01	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.24.2020 16:01	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.24.2020 16:01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	99	%	70-130	08.24.2020 16:01	
4-Bromofluorobenzene	460-00-4	109	%	70-130	08.24.2020 16:01	

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Harrison BF 13

Sample Id: **S-5 0.5'** Matrix: Soil Date Received:08.24.2020 08:20

Lab Sample Id: 670776-009 Date Collected: 08.21.2020 10:38

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 08.24.2020 14:15 Basis: Wet Weight

Seq Number: 3135388

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**14.7**	4.95	mg/kg	08.24.2020 15:51		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P

Tech: DVM % Moisture:

Analyst: ARM Date Prep: 08.24.2020 13:00 Basis: Wet Weight

Seq Number: 3135480

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	08.24.2020 20:55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	08.24.2020 20:55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	08.24.2020 20:55	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	08.24.2020 20:55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-130	08.24.2020 20:55	
o-Terphenyl	84-15-1	103	%	70-130	08.24.2020 20:55	

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Harrison BF 13

Sample Id:	**S-5 0.5'**	Matrix:	Soil	Date Received:	08.24.2020 08:20
Lab Sample Id:	670776-009	Date Collected:	08.21.2020 10:38		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	08.24.2020 10:30	Basis:	Wet Weight
Seq Number:	3135428				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	08.24.2020 16:22	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	08.24.2020 16:22	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	08.24.2020 16:22	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	08.24.2020 16:22	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	08.24.2020 16:22	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	08.24.2020 16:22	U	1
Total BTEX		<0.00198	0.00198	mg/kg	08.24.2020 16:22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	109	%	70-130	08.24.2020 16:22	
1,4-Difluorobenzene	540-36-3	100	%	70-130	08.24.2020 16:22	

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Harrison BF 13

Sample Id:	**S-5 1'**	Matrix:	Soil	Date Received:	08.24.2020 08:20
Lab Sample Id:	670776-010	Date Collected:	08.21.2020 11:40		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	08.24.2020 14:15	Basis:	Wet Weight
Seq Number:	3135388				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**10.0**	4.98	mg/kg	08.24.2020 16:07		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	08.24.2020 13:00	Basis:	Wet Weight
Seq Number:	3135480				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	08.24.2020 21:18	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	08.24.2020 21:18	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	08.24.2020 21:18	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	08.24.2020 21:18	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-130	08.24.2020 21:18	
o-Terphenyl	84-15-1	100	%	70-130	08.24.2020 21:18	

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Harrison BF 13

Sample Id:	**S-5 1'**	Matrix:	Soil	Date Received:	08.24.2020 08:20
Lab Sample Id:	670776-010	Date Collected:	08.21.2020 11:40		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	08.24.2020 10:30	Basis:	Wet Weight
Seq Number:	3135428				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.24.2020 16:42	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.24.2020 16:42	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.24.2020 16:42	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.24.2020 16:42	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.24.2020 16:42	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.24.2020 16:42	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.24.2020 16:42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	107	%	70-130	08.24.2020 16:42	
1,4-Difluorobenzene	540-36-3	99	%	70-130	08.24.2020 16:42	

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Harrison BF 13

Sample Id:	**S-6 0.5'**	Matrix:	Soil	Date Received:	08.24.2020 08:20
Lab Sample Id:	670776-011	Date Collected:	08.21.2020 11:10		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	08.24.2020 14:15	Basis:	Wet Weight
Seq Number:	3135388				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**15.9**	5.02	mg/kg	08.24.2020 16:12		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	08.24.2020 13:00	Basis:	Wet Weight
Seq Number:	3135480				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	08.24.2020 22:04	U	1
Diesel Range Organics (DRO)	C10C28DRO	**103**	50.0	mg/kg	08.24.2020 22:04		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	08.24.2020 22:04	U	1
Total TPH	PHC635	**103**	50.0	mg/kg	08.24.2020 22:04		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-130	08.24.2020 22:04	
o-Terphenyl	84-15-1	105	%	70-130	08.24.2020 22:04	

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Certificate of Analytical Results 670776

Larson and Associates, Inc., Midland, TX

Harrison BF 13

Sample Id:	**S-6 0.5'**	Matrix:	Soil	Date Received:	08.24.2020 08:20
Lab Sample Id:	670776-011	Date Collected:	08.21.2020 11:10		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	08.24.2020 10:30	Basis:	Wet Weight
Seq Number:	3135428				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	08.24.2020 18:11	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	08.24.2020 18:11	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	08.24.2020 18:11	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	08.24.2020 18:11	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	08.24.2020 18:11	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	08.24.2020 18:11	U	1
Total BTEX		<0.00198	0.00198	mg/kg	08.24.2020 18:11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	107	%	70-130	08.24.2020 18:11	
1,4-Difluorobenzene	540-36-3	101	%	70-130	08.24.2020 18:11	

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Certificate of Analytical Results 670776

Larson and Associates, Inc., Midland, TX

Harrison BF 13

Sample Id:	**S-6 1'**	Matrix:	Soil	Date Received:	08.24.2020 08:20
Lab Sample Id:	670776-012	Date Collected:	08.21.2020 11:15		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	08.24.2020 14:15	Basis:	Wet Weight
Seq Number:	3135388				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**12.1**	4.97	mg/kg	08.24.2020 16:28		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	08.24.2020 13:00	Basis:	Wet Weight
Seq Number:	3135480				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	08.24.2020 22:27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	08.24.2020 22:27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	08.24.2020 22:27	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	08.24.2020 22:27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-130	08.24.2020 22:27	
o-Terphenyl	84-15-1	105	%	70-130	08.24.2020 22:27	

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Certificate of Analytical Results 670776

Larson and Associates, Inc., Midland, TX

Harrison BF 13

Sample Id:	**S-6 1'**	Matrix:	Soil	Date Received:	08.24.2020 08:20
Lab Sample Id:	670776-012	Date Collected:	08.21.2020 11:15		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	08.24.2020 10:30	Basis:	Wet Weight
Seq Number:	3135428				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	08.24.2020 18:31	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	08.24.2020 18:31	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	08.24.2020 18:31	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	08.24.2020 18:31	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	08.24.2020 18:31	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	08.24.2020 18:31	U	1
Total BTEX		<0.00198	0.00198	mg/kg	08.24.2020 18:31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	100	%	70-130	08.24.2020 18:31	
4-Bromofluorobenzene	460-00-4	106	%	70-130	08.24.2020 18:31	

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Certificate of Analytical Results 670776

Larson and Associates, Inc., Midland, TX

Harrison BF 13

Sample Id:	**S-7 0.5'**	Matrix:	Soil	Date Received:	08.24.2020 08:20
Lab Sample Id:	670776-013	Date Collected:	08.21.2020 11:20		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	08.24.2020 14:15	Basis:	Wet Weight
Seq Number:	3135388				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**96.6**	5.00	mg/kg	08.24.2020 16:33		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	08.24.2020 13:00	Basis:	Wet Weight
Seq Number:	3135480				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	08.24.2020 22:50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	08.24.2020 22:50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	08.24.2020 22:50	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	08.24.2020 22:50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-130	08.24.2020 22:50	
o-Terphenyl	84-15-1	103	%	70-130	08.24.2020 22:50	

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Certificate of Analytical Results 670776

Larson and Associates, Inc., Midland, TX

Harrison BF 13

Sample Id:	**S-7 0.5'**	Matrix:	Soil	Date Received:	08.24.2020 08:20
Lab Sample Id:	670776-013	Date Collected:	08.21.2020 11:20		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	08.24.2020 10:30	Basis:	Wet Weight
Seq Number:	3135428				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.24.2020 18:52	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.24.2020 18:52	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.24.2020 18:52	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.24.2020 18:52	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.24.2020 18:52	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.24.2020 18:52	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.24.2020 18:52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	99	%	70-130	08.24.2020 18:52	
4-Bromofluorobenzene	460-00-4	108	%	70-130	08.24.2020 18:52	

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Certificate of Analytical Results 670776

Larson and Associates, Inc., Midland, TX

Harrison BF 13

Sample Id: **S-7 1'** Matrix: Soil Date Received:08.24.2020 08:20

Lab Sample Id: 670776-014 Date Collected: 08.21.2020 11:22

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 08.24.2020 14:15 Basis: Wet Weight

Seq Number: 3135388

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**55.5**	4.99	mg/kg	08.24.2020 16:39		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P

Tech: DVM % Moisture:

Analyst: ARM Date Prep: 08.24.2020 13:00 Basis: Wet Weight

Seq Number: 3135480

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	08.24.2020 23:13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	08.24.2020 23:13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	08.24.2020 23:13	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	08.24.2020 23:13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-130	08.24.2020 23:13	
o-Terphenyl	84-15-1	102	%	70-130	08.24.2020 23:13	

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Certificate of Analytical Results 670776

Larson and Associates, Inc., Midland, TX

Harrison BF 13

Sample Id:	**S-7 1'**	Matrix:	Soil	Date Received:	08.24.2020 08:20
Lab Sample Id:	670776-014	Date Collected:	08.21.2020 11:22		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	08.24.2020 10:30	Basis:	Wet Weight
Seq Number:	3135428				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	08.24.2020 19:13	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	08.24.2020 19:13	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	08.24.2020 19:13	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	08.24.2020 19:13	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	08.24.2020 19:13	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	08.24.2020 19:13	U	1
Total BTEX		<0.00201	0.00201	mg/kg	08.24.2020 19:13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	108	%	70-130	08.24.2020 19:13	
1,4-Difluorobenzene	540-36-3	101	%	70-130	08.24.2020 19:13	

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Certificate of Analytical Results 670776

Larson and Associates, Inc., Midland, TX

Harrison BF 13

Sample Id:	**S-8 0.5'**	Matrix:	Soil	Date Received:	08.24.2020 08:20
Lab Sample Id:	670776-015	Date Collected:	08.21.2020 11:28		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	08.24.2020 14:15	Basis:	Wet Weight
Seq Number:	3135388				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**35.7**	5.05	mg/kg	08.24.2020 16:44		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	08.24.2020 13:00	Basis:	Wet Weight
Seq Number:	3135480				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	08.24.2020 23:36	U	1
Diesel Range Organics (DRO)	C10C28DRO	**104**	49.8	mg/kg	08.24.2020 23:36		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	08.24.2020 23:36	U	1
Total TPH	PHC635	**104**	49.8	mg/kg	08.24.2020 23:36		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-130	08.24.2020 23:36	
o-Terphenyl	84-15-1	103	%	70-130	08.24.2020 23:36	

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Certificate of Analytical Results 670776

Larson and Associates, Inc., Midland, TX

Harrison BF 13

Sample Id:	**S-8 0.5'**	Matrix:	Soil	Date Received:	08.24.2020 08:20
Lab Sample Id:	670776-015	Date Collected:	08.21.2020 11:28		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	08.24.2020 10:30	Basis:	Wet Weight
Seq Number:	3135428				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	08.24.2020 19:33	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	08.24.2020 19:33	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	08.24.2020 19:33	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	08.24.2020 19:33	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	08.24.2020 19:33	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	08.24.2020 19:33	U	1
Total BTEX		<0.00202	0.00202	mg/kg	08.24.2020 19:33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	107	%	70-130	08.24.2020 19:33	
1,4-Difluorobenzene	540-36-3	100	%	70-130	08.24.2020 19:33	

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Certificate of Analytical Results 670776

Larson and Associates, Inc., Midland, TX

Harrison BF 13

Sample Id:	**S-8 1'**	Matrix:	Soil	Date Received:	08.24.2020 08:20
Lab Sample Id:	670776-016	Date Collected:	08.21.2020 11:30		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	08.24.2020 14:15	Basis:	Wet Weight
Seq Number:	3135388				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**30.3**	5.05	mg/kg	08.24.2020 16:49		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	08.24.2020 13:00	Basis:	Wet Weight
Seq Number:	3135480				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	08.24.2020 23:59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	08.24.2020 23:59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	08.24.2020 23:59	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	08.24.2020 23:59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-130	08.24.2020 23:59	
o-Terphenyl	84-15-1	108	%	70-130	08.24.2020 23:59	

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Certificate of Analytical Results 670776

Larson and Associates, Inc., Midland, TX

Harrison BF 13

Sample Id:	**S-8 1'**	Matrix:	Soil	Date Received:	08.24.2020 08:20
Lab Sample Id:	670776-016	Date Collected:	08.21.2020 11:30		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	08.24.2020 10:30	Basis:	Wet Weight
Seq Number:	3135428				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.24.2020 19:54	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.24.2020 19:54	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.24.2020 19:54	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	08.24.2020 19:54	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.24.2020 19:54	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.24.2020 19:54	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.24.2020 19:54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	107	%	70-130	08.24.2020 19:54	
1,4-Difluorobenzene	540-36-3	100	%	70-130	08.24.2020 19:54	

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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

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QC Summary 670776

Larson and Associates, Inc.

Harrison BF 13

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3135388 — Matrix: Solid — Date Prep: 08.24.2020
MB Sample Id: 7710043-1-BLK — LCS Sample Id: 7710043-1-BKS — LCSD Sample Id: 7710043-1-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	267	107	90-110	1	20	mg/kg	08.24.2020 14:27	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3135388 — Matrix: Soil — Date Prep: 08.24.2020
Parent Sample Id: 670711-001 — MS Sample Id: 670711-001 S — MSD Sample Id: 670711-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	93.7	248	355	105	356	106	90-110	0	20	mg/kg	08.24.2020 14:43	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3135388 — Matrix: Soil — Date Prep: 08.24.2020
Parent Sample Id: 670776-009 — MS Sample Id: 670776-009 S — MSD Sample Id: 670776-009 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	14.7	248	276	105	277	106	90-110	0	20	mg/kg	08.24.2020 15:56	

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3135480 — Matrix: Solid — Date Prep: 08.24.2020
MB Sample Id: 7710083-1-BLK — LCS Sample Id: 7710083-1-BKS — LCSD Sample Id: 7710083-1-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	896	90	1010	101	70-130	12	20	mg/kg	08.24.2020 15:57	
Diesel Range Organics (DRO)	<50.0	1000	942	94	1000	100	70-130	6	20	mg/kg	08.24.2020 15:57	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	96		96		101		70-130	%	08.24.2020 15:57
o-Terphenyl	98		93		100		70-130	%	08.24.2020 15:57

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3135480 — Matrix: Solid — Date Prep: 08.24.2020
MB Sample Id: 7710083-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	08.24.2020 15:32	

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

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QC Summary 670776

Larson and Associates, Inc.

Harrison BF 13

Analytical Method: **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3135480 Matrix: Soil Date Prep: 08.24.2020
Parent Sample Id: 670776-004 MS Sample Id: 670776-004 S MSD Sample Id: 670776-004 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)	<49.8	996	1020	102	998	100	70-130	2	20	mg/kg	08.24.2020 17:23	
Diesel Range Organics (DRO)	<49.8	996	1010	101	1030	103	70-130	2	20	mg/kg	08.24.2020 17:23	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	103		104		70-130	%	08.24.2020 17:23
o-Terphenyl	99		100		70-130	%	08.24.2020 17:23

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5035A
Seq Number: 3135428 Matrix: Solid Date Prep: 08.24.2020
MB Sample Id: 7710089-1-BLK LCS Sample Id: 7710089-1-BKS LCSD Sample Id: 7710089-1-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	0.0989	99	0.0948	95	70-130	4	35	mg/kg	08.24.2020 11:07	
Toluene	<0.00200	0.100	0.0925	93	0.0923	92	70-130	0	35	mg/kg	08.24.2020 11:07	
Ethylbenzene	<0.00200	0.100	0.0945	95	0.0983	98	70-130	4	35	mg/kg	08.24.2020 11:07	
m,p-Xylenes	<0.00400	0.200	0.186	93	0.192	96	70-130	3	35	mg/kg	08.24.2020 11:07	
o-Xylene	<0.00200	0.100	0.0911	91	0.0934	93	70-130	2	35	mg/kg	08.24.2020 11:07	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	97		98		97		70-130	%	08.24.2020 11:07
4-Bromofluorobenzene	102		102		103		70-130	%	08.24.2020 11:07

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5035A
Seq Number: 3135428 Matrix: Soil Date Prep: 08.24.2020
Parent Sample Id: 670776-001 MS Sample Id: 670776-001 S MSD Sample Id: 670776-001 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	0.0639	64	0.0696	70	70-130	9	35	mg/kg	08.24.2020 11:48	X
Toluene	<0.00199	0.0994	0.0502	51	0.0539	54	70-130	7	35	mg/kg	08.24.2020 11:48	X
Ethylbenzene	<0.00199	0.0994	0.0408	41	0.0425	43	70-130	4	35	mg/kg	08.24.2020 11:48	X
m,p-Xylenes	<0.00398	0.199	0.0797	40	0.0828	41	70-130	4	35	mg/kg	08.24.2020 11:48	X
o-Xylene	<0.00199	0.0994	0.0384	39	0.0416	42	70-130	8	35	mg/kg	08.24.2020 11:48	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		100		70-130	%	08.24.2020 11:48
4-Bromofluorobenzene	104		105		70-130	%	08.24.2020 11:48

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

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

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

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670776

№1331

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to:

DATE: 8/21/20 PAGE 1 OF 2

PO#: LAB WORK ORDER#:

PROJECT LOCATION OR NAME: Harrison BF 13

LAI PROJECT #: 20-0107-19 COLLECTOR: TJ

TRRP report? ☐ Yes ☒ No

TIME ZONE: Time zone/State: MST

S=SOIL P=PAINT
W=WATER SL=SLUDGE
A=AIR OT=OTHER

PRESERVATION: HCl | HNO_3 | H_2SO_4 ☐ NaOH ☐ | ICE | UNPRESSERVED

ANALYSES: BTEX ☒ MTBE ☐ | TRPH 418.1 ☐ | TPH 1005 ☐ TPH 1006 ☐ | GASOLINE MOD 8015 ☒ | DIESEL - MOD 8015 ☒ | OIL - MOD 8015 ☒ | VOC 8260 ☐ | SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐ | 8081 PESTICIDES ☐ 8151 HERBICIDES ☐ | 8082 PCBS ☐ | TBLP - METALS (RCRA) ☐ TCLP VOC ☐ | TCLP - PEST ☐ HERB ☐ Semi-VOC ☐ | TOTAL METALS (RCRA) ☐ OTHER LIST ☐ | LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐ | RCI ☐ TOX ☐ FLASHPOINT ☐ | TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐ | pH ☐ HEXAVALENT CHROMIUM ☐ | EXPLOSIVES ☐ PECHLORATE ☐ | CHLORIDE ☒ ANIONS ☐ ALKALINITY ☐

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESSERVED	BTEX ☒ MTBE ☐	TRPH 418.1 ☐	TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☒	DIESEL - MOD 8015 ☒	OIL - MOD 8015 ☒	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TBLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDE ☒ ANIONS ☐ ALKALINITY ☐	FIELD NOTES
S-1 0.5'		8/21/20	0950	S	1				X		X			X	X	X													X		
S-1 1'			0952																												
S-2 0.5'			1000																												
S-2 1'			1002																												
S-3 0.5'			1008																												
S-3 1'			1010																												
S-4 0.5'			1018																												
S-4 1'			1020																												
S-5 0.5'			1138																												
S-5 1'			1140																												
S-6 0.5'			1110																												
S-6 1'			1115																												
S-7 0.5'			1120																												
S-7 1'			1122																												
S-8 0.5'			1128																												

TOTAL 15

RELINQUISHED BY:(Signature) Trent Dunn DATE/TIME 8/21/20 RECEIVED BY:(Signature) DATE/TIME 0800

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

LABORATORY: Xenco

TURN AROUND TIME
NORMAL ☑
1 DAY ☐
2 DAY ☐
OTHER ☐

LABORATORY USE ONLY:
RECEIVING TEMP: 1.6/1.2 THERM#: TM8
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL #
☐ HAND DELIVERED

Received by OCD: 10/14/2020 1:34:42 PM
Final 1.000
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Released to Imaging: 1/21/2021 2:38:55 PM

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Nº 1332

1707710

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to:

DATE: 8/21/20 PAGE 2 OF 2

PO#: LAB WORK ORDER#:

PROJECT LOCATION OR NAME: Harrison BF 13

LAI PROJECT #: 20-0107-19 COLLECTOR: TJ

TRRP report? ☐ Yes ☒ No

TIME ZONE: Time zone/State: MST

S=SOIL P=PAINT
W=WATER SL=SLUDGE
A=AIR OT=OTHER

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESSERVED	ANALYSES: BTEX ☐ MTBE ☐	TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015	DIESEL - MOD 8015	OIL - MOD 8015	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TBLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDE ANIONS ☐ ALKALINITY ☐	FIELD NOTES
S-8 1'		8/21/20	1130	S	1						X		X	X	X												X		

TOTAL 1

RELINQUISHED BY:(Signature) Trent Jones DATE/TIME 8/24/20 RECEIVED BY: (Signature) BTM 0900

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

LABORATORY: Xenco

TURN AROUND TIME
NORMAL ☑
1 DAY ☐
2 DAY ☐
OTHER ☐

LABORATORY USE ONLY:
RECEIVING TEMP: 1.6/1.7 THERM#: IR-5
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL #
☐ HAND DELIVERED

Received by OCD: 10/14/2020 1:34:42 PM
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Final 1.000
Released to Imaging: 1/21/2021 2:38:55 PM

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: Larson and Associates, Inc.

Date/ Time Received: 08.24.2020 08.20.00 AM

Work Order #: 670776

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)?	1.2	
#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**	BTEX was in bulk container
#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: 08.24.2020
Brianna Teel

Checklist reviewed by: Holly Taylor Date: 08.24.2020
Holly Taylor

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Certificate of Analysis Summary 673686

Larson and Associates, Inc., Midland, TX

Project Name: BF Harrison

Project Id: 20-0107-19
Contact: Mark Larson
Project Location: NM

Date Received in Lab: Mon 09.28.2020 09:40
Report Date: 09.30.2020 14:07
Project Manager: Holly Taylor

Analysis Requested													
	Lab Id:	673686-001		673686-002		673686-003		673686-004					
	Field Id:	S-1 1'		S-1 3'		S-1 5'		S-1 10'					
	Depth:	1- ft		3- ft		5- ft		10- ft					
	Matrix:	SOIL		SOIL		SOIL		SOIL					
	Sampled:	09.25.2020 10:25		09.25.2020 10:23		09.25.2020 10:35		09.25.2020 10:40					
BTEX by EPA 8021B	***Extracted:***	09.28.2020 12:00		09.28.2020 12:00		09.28.2020 12:00		09.28.2020 12:00					
	Analyzed:	09.28.2020 19:33		09.28.2020 19:53		09.28.2020 20:14		09.28.2020 20:34					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Benzene		<0.00202	0.00202	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201				
Toluene		<0.00202	0.00202	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201				
Ethylbenzene		<0.00202	0.00202	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201				
m,p-Xylenes		<0.00403	0.00403	<0.00401	0.00401	<0.00399	0.00399	<0.00402	0.00402				
o-Xylene		<0.00202	0.00202	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201				
Total Xylenes		<0.00202	0.00202	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201				
Total BTEX		<0.00202	0.00202	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201				
Chloride by EPA 300	***Extracted:***	09.29.2020 16:00		09.29.2020 16:00		09.29.2020 16:00		09.29.2020 16:00					
	Analyzed:	09.29.2020 17:59		09.29.2020 18:05		09.29.2020 18:24		09.29.2020 18:30					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		46.4	5.02	18.2	4.96	33.9	4.98	67.9	4.95				
TPH By SW8015 Mod	***Extracted:***	09.29.2020 16:00		09.29.2020 16:00		09.29.2020 16:00		09.29.2020 16:00					
	Analyzed:	09.29.2020 18:06		09.29.2020 19:04		09.29.2020 19:23		09.29.2020 19:42					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons		<50.0	50.0	<49.8	49.8	<50.0	50.0	<50.0	50.0				
Diesel Range Organics		<50.0	50.0	<49.8	49.8	<50.0	50.0	<50.0	50.0				
Oil Range Hydrocarbons		<50.0	50.0	<49.8	49.8	<50.0	50.0	<50.0	50.0				
Total TPH		<50.0	50.0	<49.8	49.8	<50.0	50.0	<50.0	50.0				

BRL - Below Reporting Limit

Jessica Kramer

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

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Analytical Report 673686

for

Larson and Associates, Inc.

Project Manager: Mark Larson

BF Harrison

20-0107-19

09.30.2020

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 (T104704219-20-23)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)

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09.30.2020

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

Reference: Eurofins Xenco, LLC Report No(s): **673686**
BF Harrison
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) 673686. 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. 673686 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,

Jessica Kramer

Jessica Kramer
Project Manager

A Small Business and Minority Company

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

Released to Imaging: 1/21/2021 2:38:55 PM

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Sample Cross Reference 673686

Larson and Associates, Inc., Midland, TX

BF Harrison

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
S-1 1'	S	09.25.2020 10:25	1 ft	673686-001
S-1 3'	S	09.25.2020 10:23	3 ft	673686-002
S-1 5'	S	09.25.2020 10:35	5 ft	673686-003
S-1 10'	S	09.25.2020 10:40	10 ft	673686-004

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CASE NARRATIVE

Client Name: Larson and Associates, Inc.

Project Name: BF Harrison

Project ID: *20-0107-19*
Work Order Number(s): *673686*

Report Date: *09.30.2020*
Date Received: *09.28.2020*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

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Certificate of Analytical Results 673686

Larson and Associates, Inc., Midland, TX

BF Harrison

Sample Id:	**S-1 1'**	Matrix:	Soil	Date Received:	09.28.2020 09:40
Lab Sample Id:	673686-001	Date Collected:	09.25.2020 10:25	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.29.2020 16:00	Basis:	Wet Weight
Seq Number:	3138452				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**46.4**	5.02	mg/kg	09.29.2020 17:59		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	09.29.2020 16:00	Basis:	Wet Weight
Seq Number:	3138464				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<50.0	50.0	mg/kg	09.29.2020 18:06	U	1
Diesel Range Organics	C10C28DRO	<50.0	50.0	mg/kg	09.29.2020 18:06	U	1
Oil Range Hydrocarbons	PHCG2835	<50.0	50.0	mg/kg	09.29.2020 18:06	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	09.29.2020 18:06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	79	%	70-130	09.29.2020 18:06	
o-Terphenyl	84-15-1	87	%	70-130	09.29.2020 18:06	

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Certificate of Analytical Results 673686

Larson and Associates, Inc., Midland, TX

BF Harrison

Sample Id:	**S-1 1'**	Matrix:	Soil	Date Received:	09.28.2020 09:40
Lab Sample Id:	673686-001	Date Collected:	09.25.2020 10:25	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	09.28.2020 12:00	Basis:	Wet Weight
Seq Number:	3138269				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	09.28.2020 19:33	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	09.28.2020 19:33	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	09.28.2020 19:33	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	09.28.2020 19:33	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	09.28.2020 19:33	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	09.28.2020 19:33	U	1
Total BTEX		<0.00202	0.00202	mg/kg	09.28.2020 19:33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	100	%	70-130	09.28.2020 19:33	
4-Bromofluorobenzene	460-00-4	103	%	70-130	09.28.2020 19:33	

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Certificate of Analytical Results 673686

Larson and Associates, Inc., Midland, TX

BF Harrison

Sample Id:	**S-1 3'**	Matrix:	Soil	Date Received:	09.28.2020 09:40
Lab Sample Id:	673686-002	Date Collected:	09.25.2020 10:23	Sample Depth:	3 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.29.2020 16:00	Basis:	Wet Weight
Seq Number:	3138452				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**18.2**	4.96	mg/kg	09.29.2020 18:05		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	09.29.2020 16:00	Basis:	Wet Weight
Seq Number:	3138464				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<49.8	49.8	mg/kg	09.29.2020 19:04	U	1
Diesel Range Organics	C10C28DRO	<49.8	49.8	mg/kg	09.29.2020 19:04	U	1
Oil Range Hydrocarbons	PHCG2835	<49.8	49.8	mg/kg	09.29.2020 19:04	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	09.29.2020 19:04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	77	%	70-130	09.29.2020 19:04	
o-Terphenyl	84-15-1	85	%	70-130	09.29.2020 19:04	

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Certificate of Analytical Results 673686

Larson and Associates, Inc., Midland, TX

BF Harrison

Sample Id:	**S-1 3'**	Matrix:	Soil	Date Received:	09.28.2020 09:40
Lab Sample Id:	673686-002	Date Collected:	09.25.2020 10:23	Sample Depth:	3 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	09.28.2020 12:00	Basis:	Wet Weight
Seq Number:	3138269				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.28.2020 19:53	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.28.2020 19:53	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.28.2020 19:53	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	09.28.2020 19:53	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.28.2020 19:53	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.28.2020 19:53	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.28.2020 19:53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	104	%	70-130	09.28.2020 19:53	
1,4-Difluorobenzene	540-36-3	102	%	70-130	09.28.2020 19:53	

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Certificate of Analytical Results 673686

Larson and Associates, Inc., Midland, TX

BF Harrison

Sample Id:	**S-1 5'**	Matrix:	Soil	Date Received:	09.28.2020 09:40
Lab Sample Id:	673686-003	Date Collected:	09.25.2020 10:35	Sample Depth:	5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.29.2020 16:00	Basis:	Wet Weight
Seq Number:	3138452				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**33.9**	4.98	mg/kg	09.29.2020 18:24		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	09.29.2020 16:00	Basis:	Wet Weight
Seq Number:	3138464				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<50.0	50.0	mg/kg	09.29.2020 19:23	U	1
Diesel Range Organics	C10C28DRO	<50.0	50.0	mg/kg	09.29.2020 19:23	U	1
Oil Range Hydrocarbons	PHCG2835	<50.0	50.0	mg/kg	09.29.2020 19:23	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	09.29.2020 19:23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	78	%	70-130	09.29.2020 19:23	
o-Terphenyl	84-15-1	87	%	70-130	09.29.2020 19:23	

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Certificate of Analytical Results 673686

Larson and Associates, Inc., Midland, TX

BF Harrison

Sample Id:	**S-1 5'**	Matrix:	Soil	Date Received:	09.28.2020 09:40
Lab Sample Id:	673686-003	Date Collected:	09.25.2020 10:35	Sample Depth:	5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	09.28.2020 12:00	Basis:	Wet Weight
Seq Number:	3138269				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.28.2020 20:14	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.28.2020 20:14	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.28.2020 20:14	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	09.28.2020 20:14	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.28.2020 20:14	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.28.2020 20:14	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.28.2020 20:14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	101	%	70-130	09.28.2020 20:14	
4-Bromofluorobenzene	460-00-4	107	%	70-130	09.28.2020 20:14	

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Certificate of Analytical Results 673686

Larson and Associates, Inc., Midland, TX

BF Harrison

Sample Id:	**S-1 10'**	Matrix:	Soil	Date Received:	09.28.2020 09:40
Lab Sample Id:	673686-004	Date Collected:	09.25.2020 10:40	Sample Depth:	10 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.29.2020 16:00	Basis:	Wet Weight
Seq Number:	3138452				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**67.9**	4.95	mg/kg	09.29.2020 18:30		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	09.29.2020 16:00	Basis:	Wet Weight
Seq Number:	3138464				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<50.0	50.0	mg/kg	09.29.2020 19:42	U	1
Diesel Range Organics	C10C28DRO	<50.0	50.0	mg/kg	09.29.2020 19:42	U	1
Oil Range Hydrocarbons	PHCG2835	<50.0	50.0	mg/kg	09.29.2020 19:42	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	09.29.2020 19:42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	77	%	70-130	09.29.2020 19:42	
o-Terphenyl	84-15-1	86	%	70-130	09.29.2020 19:42	

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Certificate of Analytical Results 673686

Larson and Associates, Inc., Midland, TX

BF Harrison

Sample Id:	**S-1 10'**	Matrix:	Soil	Date Received:	09.28.2020 09:40
Lab Sample Id:	673686-004	Date Collected:	09.25.2020 10:40	Sample Depth:	10 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	09.28.2020 12:00	Basis:	Wet Weight
Seq Number:	3138269				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	09.28.2020 20:34	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	09.28.2020 20:34	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	09.28.2020 20:34	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	09.28.2020 20:34	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	09.28.2020 20:34	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	09.28.2020 20:34	U	1
Total BTEX		<0.00201	0.00201	mg/kg	09.28.2020 20:34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	106	%	70-130	09.28.2020 20:34	
1,4-Difluorobenzene	540-36-3	101	%	70-130	09.28.2020 20:34	

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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

Released to Imaging: 1/21/2021 2:38:55 PM

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QC Summary 673686

Larson and Associates, Inc.

BF Harrison

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3138452 — Matrix: Solid — Date Prep: 09.29.2020
MB Sample Id: 7712311-1-BLK — LCS Sample Id: 7712311-1-BKS — LCSD Sample Id: 7712311-1-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	257	103	256	102	90-110	0	20	mg/kg	09.29.2020 16:24	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3138452 — Matrix: Soil — Date Prep: 09.29.2020
Parent Sample Id: 673651-055 — MS Sample Id: 673651-055 S — MSD Sample Id: 673651-055 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	4000	1250	5330	106	5340	107	90-110	0	20	mg/kg	09.29.2020 16:43	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3138452 — Matrix: Soil — Date Prep: 09.29.2020
Parent Sample Id: 673686-002 — MS Sample Id: 673686-002 S — MSD Sample Id: 673686-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	18.2	248	277	104	273	103	90-110	1	20	mg/kg	09.29.2020 18:11	

Analytical Method: TPH By SW8015 Mod — Prep Method: SW8015P
Seq Number: 3138464 — Matrix: Solid — Date Prep: 09.29.2020
MB Sample Id: 7712334-1-BLK — LCS Sample Id: 7712334-1-BKS — LCSD Sample Id: 7712334-1-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	1060	106	1060	106	70-130	0	20	mg/kg	09.29.2020 17:27	
Diesel Range Organics	<50.0	1000	1120	112	1120	112	70-130	0	20	mg/kg	09.29.2020 17:27	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	78		104		100		70-130	%	09.29.2020 17:27
o-Terphenyl	89		103		106		70-130	%	09.29.2020 17:27

Analytical Method: TPH By SW8015 Mod — Prep Method: SW8015P
Seq Number: 3138464 — Matrix: Solid — Date Prep: 09.29.2020
MB Sample Id: 7712334-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Oil Range Hydrocarbons	<50.0	mg/kg	09.29.2020 17:08	

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

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

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

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QC Summary 673686

Larson and Associates, Inc.

BF Harrison

Analytical Method: **TPH By SW8015 Mod** Prep Method: SW8015P
Seq Number: 3138464 Matrix: Soil Date Prep: 09.29.2020
Parent Sample Id: 673686-001 MS Sample Id: 673686-001 S MSD Sample Id: 673686-001 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	1000	965	97	994	100	70-130	3	20	mg/kg	09.29.2020 18:25	
Diesel Range Organics	<50.0	1000	932	93	980	98	70-130	5	20	mg/kg	09.29.2020 18:25	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	100		92		70-130	%	09.29.2020 18:25
o-Terphenyl	93		93		70-130	%	09.29.2020 18:25

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5035A
Seq Number: 3138269 Matrix: Solid Date Prep: 09.28.2020
MB Sample Id: 7712188-1-BLK LCS Sample Id: 7712188-1-BKS LCSD Sample Id: 7712188-1-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	0.108	108	0.121	121	70-130	11	35	mg/kg	09.28.2020 12:58	
Toluene	<0.00200	0.100	0.100	100	0.112	112	70-130	11	35	mg/kg	09.28.2020 12:58	
Ethylbenzene	<0.00200	0.100	0.108	108	0.119	119	70-130	10	35	mg/kg	09.28.2020 12:58	
m,p-Xylenes	<0.00400	0.200	0.221	111	0.243	122	70-130	9	35	mg/kg	09.28.2020 12:58	
o-Xylene	<0.00200	0.100	0.107	107	0.118	118	70-130	10	35	mg/kg	09.28.2020 12:58	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	95		99		100		70-130	%	09.28.2020 12:58
4-Bromofluorobenzene	101		98		101		70-130	%	09.28.2020 12:58

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5035A
Seq Number: 3138269 Matrix: Soil Date Prep: 09.28.2020
Parent Sample Id: 673679-001 MS Sample Id: 673679-001 S MSD Sample Id: 673679-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00198	0.0992	0.104	105	0.0998	101	70-130	4	35	mg/kg	09.28.2020 12:17	
Toluene	<0.00198	0.0992	0.0867	87	0.0907	92	70-130	5	35	mg/kg	09.28.2020 12:17	
Ethylbenzene	<0.00198	0.0992	0.0778	78	0.0905	91	70-130	15	35	mg/kg	09.28.2020 12:17	
m,p-Xylenes	<0.00397	0.198	0.156	79	0.185	93	70-130	17	35	mg/kg	09.28.2020 12:17	
o-Xylene	<0.00198	0.0992	0.0797	80	0.0935	94	70-130	16	35	mg/kg	09.28.2020 12:17	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		99		70-130	%	09.28.2020 12:17
4-Bromofluorobenzene	100		105		70-130	%	09.28.2020 12:17

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

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

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

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Nº 1350

6736986

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

DATE: 9/25/20 PAGE 1 OF 1

PO#: _____ LAB WORK ORDER#: _____

PROJECT LOCATION OR NAME: BF Harrison

LAI PROJECT #: 20-0107-19 COLLECTOR: DS+TJ

Data Reported to:

TRRP report? ☐ Yes ☒ No

TIME ZONE: Time zone/State: MST

S=SOIL P=PAINT
W=WATER SL=SLUDGE
A=AIR OT=OTHER

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESSERVED	ANALYSES: BTEX ☒ MTBE ☐	TRPH 418.1 ☐	TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☒	DIESEL - MOD 8015 ☒	OIL - MOD 8015 ☒	VOC 8260 ☐	SVOC 8270 ☐	PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐	8151 HERBICIDES ☐	8082 PCBS ☐	TBLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDE ☒ ANIONS ☐ ALKALINITY ☐	FIELD NOTES
S-1 1'		9/25/20	1025	S	1				X		X			X	X	X															X			
S-1 3'			1033	S	1				X		X			X	X	X															X			
S-1 5'			1035	S	1				X		X			X	X	X															X			
S-1 10'			1040	S	1				X		X			X	X	X															X			
TOTAL 4																																	

RELINQUISHED BY:(Signature) _____ DATE/TIME 9/25/20 9:40 RECEIVED BY: (Signature) _____

RELINQUISHED BY:(Signature) _____ DATE/TIME _____ RECEIVED BY: (Signature) _____

RELINQUISHED BY:(Signature) _____ DATE/TIME _____ RECEIVED BY: (Signature) _____

LABORATORY: Xenco

TURN AROUND TIME
NORMAL ☒
1 DAY ☐
2 DAY ☐
OTHER ☐ _____

LABORATORY USE ONLY:
RECEIVING TEMP: -2.1/-1.1 THERM#: 188
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL # _____
☐ HAND DELIVERED

Received by OCD: 10/14/2020 1:34:42 PM
Final 1.000
Page 17 of 18
Released to Imaging: 1/21/2021 2:38:55 PM

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: Larson and Associates, Inc.

Date/ Time Received: 09.28.2020 09.40.00 AM

Work Order #: 673686

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)?	-1.6
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6*Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**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 Date: 09.28.2020
Jessica Kramer

Checklist reviewed by: Date: 09.30.2020
Ruriko Konuma

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Certificate of Analysis Summary 674152

Larson and Associates, Inc., Midland, TX

Project Name: BF Harrison 13

Project Id: 20-0107-19
Contact: Mark Larson
Project Location:

Date Received in Lab: Fri 10.02.2020 09:20
Report Date: 10.06.2020 16:59
Project Manager: Holly Taylor

Analysis Requested													
	Lab Id:	674152-001		674152-002		674152-003		674152-004					
	Field Id:	S-9 (0.5')		S-9 (1')		S-10 (0.5')		S-10 (1')					
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL					
	Sampled:	09.30.2020 09:40		09.30.2020 09:45		09.30.2020 09:50		09.30.2020 09:55					
BTEX by EPA 8021B	***Extracted:***	10.03.2020 10:00		10.04.2020 09:00		10.03.2020 10:00		10.03.2020 10:00					
	Analyzed:	10.03.2020 16:56		10.04.2020 15:53		10.03.2020 17:38		10.03.2020 17:58					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Benzene		<0.00199	0.00199	<0.00199	0.00199	<0.00198	0.00198	<0.00200	0.00200				
Toluene		<0.00199	0.00199	<0.00199	0.00199	<0.00198	0.00198	<0.00200	0.00200				
Ethylbenzene		<0.00199	0.00199	<0.00199	0.00199	<0.00198	0.00198	<0.00200	0.00200				
m,p-Xylenes		<0.00398	0.00398	<0.00398	0.00398	<0.00396	0.00396	<0.00400	0.00400				
o-Xylene		<0.00199	0.00199	<0.00199	0.00199	<0.00198	0.00198	<0.00200	0.00200				
Total Xylenes		<0.00199	0.00199	<0.00199	0.00199	<0.00198	0.00198	<0.00200	0.00200				
Total BTEX		<0.00199	0.00199	<0.00199	0.00199	<0.00198	0.00198	<0.00200	0.00200				
Chloride by EPA 300	***Extracted:***	10.02.2020 16:45		10.05.2020 14:45		10.05.2020 14:45		10.05.2020 14:45					
	Analyzed:	10.03.2020 11:29		10.05.2020 15:35		10.05.2020 15:51		10.05.2020 15:56					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		86.8	5.02	91.1	4.98	26.1	5.03	83.6	4.99				
TPH by SW8015 Mod	***Extracted:***	10.03.2020 09:00		10.03.2020 09:00		10.03.2020 09:00		10.03.2020 09:00					
	Analyzed:	10.03.2020 19:41		10.03.2020 20:04		10.03.2020 20:26		10.03.2020 20:49					
	Units/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	<49.9	49.9	<49.9	49.9				
Diesel Range Organics (DRO)		<50.0	50.0	<50.0	50.0	<49.9	49.9	<49.9	49.9				
Motor Oil Range Hydrocarbons (MRO)		<50.0	50.0	<50.0	50.0	<49.9	49.9	<49.9	49.9				
Total TPH		<50.0	50.0	<50.0	50.0	<49.9	49.9	<49.9	49.9				

BRL - Below Reporting Limit

Jessica Kramer

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

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Analytical Report 674152

for

Larson and Associates, Inc.

Project Manager: Mark Larson

BF Harrison 13

20-0107-19

10.06.2020

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 (T104704219-20-23)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)

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10.06.2020

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

Reference: Eurofins Xenco, LLC Report No(s): **674152**
BF Harrison 13
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) 674152. 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. 674152 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,

Jessica Kramer

Jessica Kramer
Project Manager

A Small Business and Minority Company

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

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Sample Cross Reference 674152

Larson and Associates, Inc., Midland, TX

BF Harrison 13

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
S-9 (0.5')	S	09.30.2020 09:40		674152-001
S-9 (1')	S	09.30.2020 09:45		674152-002
S-10 (0.5')	S	09.30.2020 09:50		674152-003
S-10 (1')	S	09.30.2020 09:55		674152-004

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CASE NARRATIVE

Client Name: Larson and Associates, Inc.

Project Name: BF Harrison 13

Project ID: *20-0107-19*
Work Order Number(s): *674152*

Report Date: *10.06.2020*
Date Received: *10.02.2020*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3138787 BTEX by EPA 8021B

Surrogate 4-Bromofluorobenzene recovered below QC limits. Samples affected are: 7712589-1-BKS,7712589-1-BLK,7712589-1-BSD,674152-001 S,674152-001 SD,674152-001,674152-003,674152-004.

Batch: LBA-3138794 BTEX by EPA 8021B

Lab Sample ID 674152-002 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Ethylbenzene recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 674152-002.
The Laboratory Control Sample for Ethylbenzene is within laboratory Control Limits, therefore the data was accepted.

Surrogate 4-Bromofluorobenzene recovered below QC limits. Samples affected are: 7712593-1-BKS,7712593-1-BLK,7712593-1-BSD,674152-002 S,674152-002 SD,674152-002.

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Certificate of Analytical Results 674152

Larson and Associates, Inc., Midland, TX

BF Harrison 13

Sample Id: **S-9 (0.5')** Matrix: Soil Date Received:10.02.2020 09:20

Lab Sample Id: 674152-001 Date Collected: 09.30.2020 09:40

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 10.02.2020 16:45 Basis: Wet Weight

Seq Number: 3138812

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**86.8**	5.02	mg/kg	10.03.2020 11:29		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P

Tech: DVM % Moisture:

Analyst: ARM Date Prep: 10.03.2020 09:00 Basis: Wet Weight

Seq Number: 3138822

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.03.2020 19:41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.03.2020 19:41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.03.2020 19:41	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.03.2020 19:41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	75	%	70-130	10.03.2020 19:41	
o-Terphenyl	84-15-1	76	%	70-130	10.03.2020 19:41	

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Certificate of Analytical Results 674152

Larson and Associates, Inc., Midland, TX

BF Harrison 13

Sample Id:	**S-9 (0.5')**	Matrix:	Soil	Date Received:	10.02.2020 09:20
Lab Sample Id:	674152-001	Date Collected:	09.30.2020 09:40		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	10.03.2020 10:00	Basis:	Wet Weight
Seq Number:	3138787				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.03.2020 16:56	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.03.2020 16:56	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.03.2020 16:56	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.03.2020 16:56	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.03.2020 16:56	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.03.2020 16:56	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.03.2020 16:56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	112	%	70-130	10.03.2020 16:56	
1,4-Difluorobenzene	540-36-3	110	%	70-130	10.03.2020 16:56	

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Certificate of Analytical Results 674152

Larson and Associates, Inc., Midland, TX

BF Harrison 13

Sample Id: **S-9 (1')** Matrix: Soil Date Received:10.02.2020 09:20

Lab Sample Id: 674152-002 Date Collected: 09.30.2020 09:45

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 10.05.2020 14:45 Basis: Wet Weight

Seq Number: 3138915

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**91.1**	4.98	mg/kg	10.05.2020 15:35		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P

Tech: DVM % Moisture:

Analyst: ARM Date Prep: 10.03.2020 09:00 Basis: Wet Weight

Seq Number: 3138822

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.03.2020 20:04	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.03.2020 20:04	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.03.2020 20:04	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.03.2020 20:04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	72	%	70-130	10.03.2020 20:04	
o-Terphenyl	84-15-1	73	%	70-130	10.03.2020 20:04	

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Certificate of Analytical Results 674152

Larson and Associates, Inc., Midland, TX

BF Harrison 13

Sample Id:	**S-9 (1')**	Matrix:	Soil	Date Received:	10.02.2020 09:20
Lab Sample Id:	674152-002	Date Collected:	09.30.2020 09:45		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	10.04.2020 09:00	Basis:	Wet Weight
Seq Number:	3138794				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.04.2020 15:53	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.04.2020 15:53	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.04.2020 15:53	UX	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.04.2020 15:53	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.04.2020 15:53	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.04.2020 15:53	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.04.2020 15:53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	57	%	70-130	10.04.2020 15:53	**
1,4-Difluorobenzene	540-36-3	106	%	70-130	10.04.2020 15:53	

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Certificate of Analytical Results 674152

Larson and Associates, Inc., Midland, TX

BF Harrison 13

Sample Id:	**S-10 (0.5')**	Matrix:	Soil	Date Received:	10.02.2020 09:20
Lab Sample Id:	674152-003	Date Collected:	09.30.2020 09:50		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	10.05.2020 14:45	Basis:	Wet Weight
Seq Number:	3138915				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**26.1**	5.03	mg/kg	10.05.2020 15:51		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	10.03.2020 09:00	Basis:	Wet Weight
Seq Number:	3138822				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	10.03.2020 20:26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	10.03.2020 20:26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	10.03.2020 20:26	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	10.03.2020 20:26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	74	%	70-130	10.03.2020 20:26	
o-Terphenyl	84-15-1	72	%	70-130	10.03.2020 20:26	

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Certificate of Analytical Results 674152

Larson and Associates, Inc., Midland, TX

BF Harrison 13

Sample Id:	**S-10 (0.5')**	Matrix:	Soil	Date Received:	10.02.2020 09:20
Lab Sample Id:	674152-003	Date Collected:	09.30.2020 09:50		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	10.03.2020 10:00	Basis:	Wet Weight
Seq Number:	3138787				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	10.03.2020 17:38	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	10.03.2020 17:38	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	10.03.2020 17:38	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	10.03.2020 17:38	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	10.03.2020 17:38	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	10.03.2020 17:38	U	1
Total BTEX		<0.00198	0.00198	mg/kg	10.03.2020 17:38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	111	%	70-130	10.03.2020 17:38	
4-Bromofluorobenzene	460-00-4	91	%	70-130	10.03.2020 17:38	

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Certificate of Analytical Results 674152

Larson and Associates, Inc., Midland, TX

BF Harrison 13

Sample Id: **S-10 (1')** Matrix: Soil Date Received:10.02.2020 09:20

Lab Sample Id: 674152-004 Date Collected: 09.30.2020 09:55

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 10.05.2020 14:45 Basis: Wet Weight

Seq Number: 3138915

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**83.6**	4.99	mg/kg	10.05.2020 15:56		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P

Tech: DVM % Moisture:

Analyst: ARM Date Prep: 10.03.2020 09:00 Basis: Wet Weight

Seq Number: 3138822

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	10.03.2020 20:49	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	10.03.2020 20:49	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	10.03.2020 20:49	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	10.03.2020 20:49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	73	%	70-130	10.03.2020 20:49	
o-Terphenyl	84-15-1	74	%	70-130	10.03.2020 20:49	

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Certificate of Analytical Results 674152

Larson and Associates, Inc., Midland, TX

BF Harrison 13

Sample Id:	**S-10 (1')**	Matrix:	Soil	Date Received:	10.02.2020 09:20
Lab Sample Id:	674152-004	Date Collected:	09.30.2020 09:55		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	10.03.2020 10:00	Basis:	Wet Weight
Seq Number:	3138787				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.03.2020 17:58	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.03.2020 17:58	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.03.2020 17:58	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	10.03.2020 17:58	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.03.2020 17:58	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.03.2020 17:58	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.03.2020 17:58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	110	%	70-130	10.03.2020 17:58	
4-Bromofluorobenzene	460-00-4	105	%	70-130	10.03.2020 17:58	

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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

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QC Summary 674152

Larson and Associates, Inc.

BF Harrison 13

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3138812 — Matrix: Solid — Date Prep: 10.02.2020
MB Sample Id: 7712578-1-BLK — LCS Sample Id: 7712578-1-BKS — LCSD Sample Id: 7712578-1-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	271	108	269	108	90-110	1	20	mg/kg	10.03.2020 04:27	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3138915 — Matrix: Solid — Date Prep: 10.05.2020
MB Sample Id: 7712642-1-BLK — LCS Sample Id: 7712642-1-BKS — LCSD Sample Id: 7712642-1-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	263	105	264	106	90-110	0	20	mg/kg	10.05.2020 15:25	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3138812 — Matrix: Soil — Date Prep: 10.02.2020
Parent Sample Id: 674215-002 — MS Sample Id: 674215-002 S — MSD Sample Id: 674215-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2590	1260	3850	100	3900	104	90-110	1	20	mg/kg	10.03.2020 06:14	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3138812 — Matrix: Soil — Date Prep: 10.02.2020
Parent Sample Id: 674216-001 — MS Sample Id: 674216-001 S — MSD Sample Id: 674216-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	854	252	1070	86	1080	90	90-110	1	20	mg/kg	10.03.2020 04:46	X

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3138915 — Matrix: Soil — Date Prep: 10.05.2020
Parent Sample Id: 674152-002 — MS Sample Id: 674152-002 S — MSD Sample Id: 674152-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	91.1	249	352	105	352	105	90-110	0	20	mg/kg	10.05.2020 15:41	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3138915 — Matrix: Soil — Date Prep: 10.05.2020
Parent Sample Id: 674254-005 — MS Sample Id: 674254-005 S — MSD Sample Id: 674254-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	332	250	591	104	593	104	90-110	0	20	mg/kg	10.05.2020 16:54	

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

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QC Summary 674152

Larson and Associates, Inc.

BF Harrison 13

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3138822 — Matrix: Solid — Date Prep: 10.03.2020
MB Sample Id: 7712606-1-BLK — LCS Sample Id: 7712606-1-BKS — LCSD Sample Id: 7712606-1-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	827	83	847	85	70-130	2	20	mg/kg	10.03.2020 13:12	
Diesel Range Organics (DRO)	<50.0	1000	883	88	887	89	70-130	0	20	mg/kg	10.03.2020 13:12	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	78		74		77		70-130	%	10.03.2020 13:12
o-Terphenyl	84		71		74		70-130	%	10.03.2020 13:12

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3138822 — Matrix: Solid — Date Prep: 10.03.2020
MB Sample Id: 7712606-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	10.03.2020 12:49	

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3138822 — Matrix: Soil — Date Prep: 10.03.2020
Parent Sample Id: 673766-002 — MS Sample Id: 673766-002 S — MSD Sample Id: 673766-002 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	998	823	82	766	77	70-130	7	20	mg/kg	10.03.2020 14:20	
Diesel Range Organics (DRO)	<49.9	998	814	82	778	78	70-130	5	20	mg/kg	10.03.2020 14:20	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	76		76		70-130	%	10.03.2020 14:20
o-Terphenyl	74		77		70-130	%	10.03.2020 14:20

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5035A
Seq Number: 3138787 — Matrix: Solid — Date Prep: 10.03.2020
MB Sample Id: 7712589-1-BLK — LCS Sample Id: 7712589-1-BKS — LCSD Sample Id: 7712589-1-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	0.0879	88	0.0954	95	70-130	8	35	mg/kg	10.03.2020 14:21	
Toluene	<0.00200	0.100	0.0852	85	0.0973	97	70-130	13	35	mg/kg	10.03.2020 14:21	
Ethylbenzene	<0.00200	0.100	0.0806	81	0.0878	88	70-130	9	35	mg/kg	10.03.2020 14:21	
m,p-Xylenes	<0.00400	0.200	0.169	85	0.184	92	70-130	8	35	mg/kg	10.03.2020 14:21	
o-Xylene	<0.00200	0.100	0.0831	83	0.0920	92	70-130	10	35	mg/kg	10.03.2020 14:21	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	97		115		119		70-130	%	10.03.2020 14:21
4-Bromofluorobenzene	95		105		117		70-130	%	10.03.2020 14:21

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

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QC Summary 674152

Larson and Associates, Inc.

BF Harrison 13

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5035A

Seq Number: 3138794 Matrix: Solid Date Prep: 10.04.2020

MB Sample Id: 7712593-1-BLK LCS Sample Id: 7712593-1-BKS LCSD Sample Id: 7712593-1-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	0.0865	87	0.0936	94	70-130	8	35	mg/kg	10.04.2020 13:16	
Toluene	<0.00200	0.100	0.0846	85	0.0911	91	70-130	7	35	mg/kg	10.04.2020 13:16	
Ethylbenzene	<0.00200	0.100	0.0854	85	0.0909	91	70-130	6	35	mg/kg	10.04.2020 13:16	
m,p-Xylenes	<0.00400	0.200	0.180	90	0.192	96	70-130	6	35	mg/kg	10.04.2020 13:16	
o-Xylene	<0.00200	0.100	0.0868	87	0.0939	94	70-130	8	35	mg/kg	10.04.2020 13:16	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	96		109		115		70-130	%	10.04.2020 13:16
4-Bromofluorobenzene	49	**	58	**	55	**	70-130	%	10.04.2020 13:16

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5035A

Seq Number: 3138787 Matrix: Soil Date Prep: 10.03.2020

Parent Sample Id: 674152-001 MS Sample Id: 674152-001 S MSD Sample Id: 674152-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0817	82	0.0835	84	70-130	2	35	mg/kg	10.03.2020 15:02	
Toluene	<0.00200	0.0998	0.0770	77	0.0787	79	70-130	2	35	mg/kg	10.03.2020 15:02	
Ethylbenzene	<0.00200	0.0998	0.0724	73	0.0748	75	70-130	3	35	mg/kg	10.03.2020 15:02	
m,p-Xylenes	<0.00399	0.200	0.153	77	0.160	81	70-130	4	35	mg/kg	10.03.2020 15:02	
o-Xylene	<0.00200	0.0998	0.0744	75	0.0769	78	70-130	3	35	mg/kg	10.03.2020 15:02	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	112		119		70-130	%	10.03.2020 15:02
4-Bromofluorobenzene	103		113		70-130	%	10.03.2020 15:02

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5035A

Seq Number: 3138794 Matrix: Soil Date Prep: 10.04.2020

Parent Sample Id: 674152-002 MS Sample Id: 674152-002 S MSD Sample Id: 674152-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0939	94	0.0742	74	70-130	23	35	mg/kg	10.04.2020 13:58	
Toluene	<0.00200	0.100	0.0911	91	0.0716	72	70-130	24	35	mg/kg	10.04.2020 13:58	
Ethylbenzene	<0.00200	0.100	0.0901	90	0.0676	68	70-130	29	35	mg/kg	10.04.2020 13:58	X
m,p-Xylenes	<0.00400	0.200	0.189	95	0.142	71	70-130	28	35	mg/kg	10.04.2020 13:58	
o-Xylene	<0.00200	0.100	0.0921	92	0.0695	70	70-130	28	35	mg/kg	10.04.2020 13:58	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	111		103		70-130	%	10.04.2020 13:58
4-Bromofluorobenzene	56	**	50	**	70-130	%	10.04.2020 13:58

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

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

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

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№1357

1074152

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to:

DATE: 10/2/20 PAGE 1 OF 1

PO#: LAB WORK ORDER#:

PROJECT LOCATION OR NAME: BF HARRISON 13

LAI PROJECT #: 20.0107.19 COLLECTOR: DS

TRRP report? ☐ Yes ☒ No

S=SOIL P=PAINT
W=WATER SL=SLUDGE
A=AIR OT=OTHER

TIME ZONE: Time zone/State: MNT

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESSERVED	ANALYSES: BTEX ☒ MTBE ☐	TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☒	DIESEL - MOD 8015 ☒	OIL - MOD 8015 ☐	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TBLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDE ☒ ANIONS ☐ ALKALINITY ☐	FIELD NOTES
S-9 (0.5)		~~10/2/20~~ 9/30/20	0940	S	1				X		X		X	X	X												X			
S-9 (1')		"	0945	"	"				"		"		"	"	"												"			
S-10 (0.5)		"	0950	"	"				"		"		"	"	"												"			
S-10 (1')		"	0955	"	"				"		"		"	"	"												"			

TOTAL 4

RELINQUISHED BY:(Signature)	DATE/TIME	RECEIVED BY: (Signature)
DSelf	10/2/20 0920	Bill Rhea
RELINQUISHED BY:(Signature)	DATE/TIME	RECEIVED BY: (Signature)
RELINQUISHED BY:(Signature)	DATE/TIME	RECEIVED BY: (Signature)

LABORATORY: XENCO

TURN AROUND TIME
NORMAL ☒
1 DAY ☐
2 DAY ☐
OTHER ☐

LABORATORY USE ONLY:
RECEIVING TEMP: 3.2°C THERM#:
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL #
☐ HAND DELIVERED

Received by OCD: 10/14/2020 1:34:42 PM
Final 1.000
Page 18 of 19
Released to Imaging: 1/21/2021 2:38:55 PM

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: Larson and Associates, Inc.

Date/ Time Received: 10.02.2020 09.20.00 AM

Work Order #: 674152

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)?	3.2	
#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**	BTEX was in buk container
#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: 10.02.2020
Brianna Teel

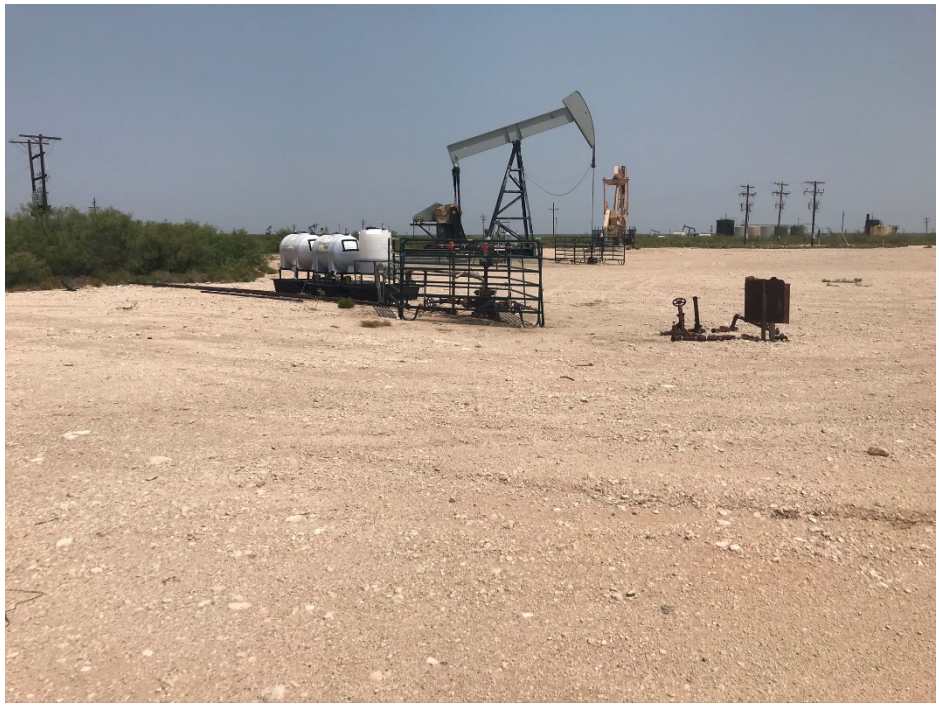
Checklist reviewed by: Holly Taylor Date: 10.05.2020
Holly Taylor

Appendix D

Photographs

Impacted area viewing northwest, August 21, 2020

Impacted area viewing north, August 21, 2020



Impacted area viewing northeast, August 21, 2020

Impacted area viewing southeast, August 21, 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 10629

CONDITIONS OF APPROVAL

Operator:			OGRID:	Action Number:	Action Type:
CHEVRON U S A INC	6301 Deauville Blvd	Midland, TX79706	4323	10629	C-141

OCD Reviewer	Condition
ceads	None