

Incident ID	nRM2020936197
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?	126 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas not on an exploration, development, production, or storage site?	☒ Yes ☐ No

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

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

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

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

State of New Mexico
Oil Conservation Division

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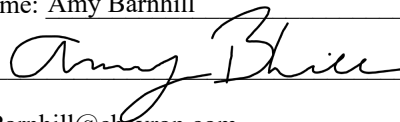
Incident ID	nRM2020936197
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I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release 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: 1-8-21

email: ABarnhill@chevron.com

Telephone: 432-687-7108

OCD Only

Received by: _____

Date: _____

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Remediation Plan

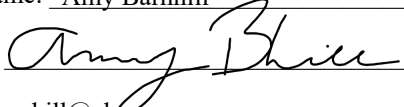
Remediation Plan Checklist: *Each of the following items must be included in the plan.*

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

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

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

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

Printed Name: Amy Barnhill Title: Waste and Water Specialist
Signature:  Date: 1-8-21
email: ABarnhill@chevron.com Telephone: 432-687-7108

OCD Only

Received by: _____ Date: _____

☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: _____ Date: _____

Tracking Number: nRM2020936197
Delineation Report and Remediation Plan
Central Vacuum Unit #139
Produced Water Release
Lea County, New Mexico

Latitude: N 32.790400°
Longitude: W -103.511800°

LAI Project No. 20-0107-17

December 11, 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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Appendix D	Photographic Documentation

nRM2020936197
Delineation Report and Remediation Plan
Chevron USA, Inc., Central Vacuum Unit #139
Produced Water Release
December 17, 2020

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 I for a produced water release at the Central Vacuum Unit #139 (Site) located in Unit J (NE/4, NW/4), Section 36, Township 17 South, Range 34 East in Lea County, New Mexico. The geodetic position is North 32.790400° and West -103.511800°. Figure 1 presents a topographic map. Figure 2 presents an aerial map.

1.1 Background

The release was discovered on July 13, 2020, due to failure of a two (2) inch buried fiberglass injection line. Chevron reported that approximately 92.11 barrels (bbls) of produced water were released. Approximately 70 bbls of produced water were recovered. The affected area measures approximately 3,424 square feet. Appendix A presents initial Chevron spill documentation. The initial C-141 was assigned an incident number of nRM2020936197.

1.2 Physical Setting

The physical setting is as follows:

- The surface elevation is approximately 3,995 feet above mean sea level (msl).
- The surface topography slopes gradually to the southeast.
- There are no surface water features within 1,000 feet of the Site.
- Karst data provided by the USGS describes the Site as “Low Risk” potential.
- The soils are designated “Kimbrough-Lea complex”, 0 to 3 percent slopes, consisting of 3 inches of gravelly loam, underlain by 7 inches of loam, and 70 inches of cemented material, in descending order.
- The geology consists of the Pliocene-age sand, silt, clay, gravel, and caliche cemented locally by calcite and by silica. (USGS).
- Groundwater was reported at approximately 126 feet below ground surface (bgs) in 2016.
- According to the New Mexico Office of the State Engineer (OSE) the nearest freshwater well is located in Section 36, Township 17 South, Range 34 East, approximately 0.49 miles or 2,584 feet northeast of the Site.

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 20,000 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.

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Delineation Report and Remediation Plan
Chevron USA, Inc., Central Vacuum Unit #139
Produced Water Release
December 17, 2020

2.0 DELINEATION

On August 12, 2020, LAI personnel used a stainless-steel hand auger to collect soil samples from ten (10) locations inside of the spill area and in each cardinal direction of the spill (SP-1 through SP-13). 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. The laboratory analyzed the samples for benzene, toluene, ethylbenzene and xylenes (BTEX) 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, BTEX, and TPH were below the OCD remediation levels of 10 milligrams per kilogram (mg/Kg), 50 mg/Kg, and 100 mg/Kg, respectively (19.15.29 NMAC Table 1). Chloride exceeded the OCD surface restoration level (19.15.29.13 NMAC) of 600 mg/Kg in the upper four (4) feet in the following soil samples:

Sample ID	Depth (Feet)	Chloride (mg/Kg)
SP-1	0.5	10,700
SP-2	0.5	10,500
SP-3	0.5	11,000
SP-4	0.5	6,770
SP-5	0.5	6,560
SP-6	0.5	10,400
SP-7	0.5	9,240
SP-8	0.5	7,320
SP-8	1	6,960
SP-9	0.5	9,070
SP-10	0.5	1,810
SP-13	0.5	1,330

On August 27, 2020, LAI personnel used a Geoprobe® 7822DT direct push rig to further delineate sample location (S-1 through S-10 and S-13). Soil samples were collected at a depth of approximately 1 and 1.5 feet bgs, depending on subsurface conditions. The samples were analyzed for BTEX, TPH, and chloride. Benzene and BTEX were not reported above the analytical reporting limits (RL). TPH exceeded the OCD delineation limit of 100 mg/Kg in samples from S-8, 1.5 feet (161 mg/Kg) and S-9, 1.5 feet (118 mg/Kg). Chloride remained above the OCD delineation criteria (600 mg/Kg).

On December 12, 2020, Scarborough Drilling, Inc. (SDI) under supervision from LAI used an air rotary drilling rig to further delineate sample locations S-2 through S-10. Samples were collected to depths of approximately twenty (20) feet bgs depending on field analysis. The borings were plugged with bentonite that was hydrated with potable water. Laboratory results confirm the release fully delineated according to the OCD remediation and closure requirements for groundwater greater than 100 feet bgs (19.15.29.12

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NMAC Table 1). Appendix C presents the Laboratory reports. Appendix D presents photographic documentation. Appendix E presents boring logs.

3.0 REMEDIATION PLAN

Chevron proposes the following remedial actions:

- Excavate soil from an area measuring approximately 7,300 square feet, encompassing SP-2 through SP-10 to approximately 4.1 feet bgs.
- Excavate soil from an area measuring approximately 680 square feet, encompassing SP-1, SP-13, and SP-14 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 I.

Figure 3 presents the proposed excavation areas.

Tables

Table 1
Soil Sample Analytical Data Summary
Central Vacuum Unit #139
Lea County, New Mexico
North 32° 47' 27.40", West 103° 30' 39.27"

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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 / 20,000
S-1	0.5	8/12/2020	In-Situ	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	10,700
	1	8/27/2020	In-Situ	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	58.5
	1.5	8/27/2020	In-Situ	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	53.6
S-2	0.5	8/12/2020	In-Situ	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	10,500
	1	8/27/2020	In-Situ	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	11,500
	1.5	8/27/2020	In-Situ	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	5,400
	5	12/2/2020	In-Situ	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	697
	10	12/2/2020	In-Situ	<0.00201	<0.00201	<49.9	<49.9	<49.9	<49.9	77.1
	15	12/2/2020	In-Situ	--	--	--	--	--	--	226
	20	12/2/2020	In-Situ	--	--	--	--	--	--	40.2
S-3	0.5	8/12/2020	In-Situ	<0.00201	<0.00201	<49.9	<49.9	<49.9	<49.9	11,000
	1	8/27/2020	In-Situ	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	9,110
	1.5	8/27/2020	In-Situ	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	6,210
	5	12/2/2020	In-Situ	<0.00202	<0.00202	<49.9	<49.9	<49.9	<49.9	1,160
	10	12/2/2020	In-Situ	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	813
	15	12/2/2020	In-Situ	--	--	--	--	--	--	556
	20	12/2/2020	In-Situ	--	--	--	--	--	--	139
S-4	0.5	8/12/2020	In-Situ	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	6,770
	1	8/27/2020	In-Situ	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	16,100
	1.5	8/27/2020	In-Situ	<0.00201	<0.00201	<49.9	<49.9	<49.9	<49.9	1,680
	5	12/2/2020	In-Situ	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	47.9
	10	12/2/2020	In-Situ	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	10.8

Table 1
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Central Vacuum Unit #139
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North 32° 47' 27.40", West 103° 30' 39.27"

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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 / 20,000
	15	12/2/2020	In-Situ	--	--	--	--	--	--	11.1
	20	12/2/2020	In-Situ	--	--	--	--	--	--	12.5
S-5	0.5	8/12/2020	In-Situ	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	6,560
	1	8/27/2020	In-Situ	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	11,600
	1.5	8/27/2020	In-Situ	<0.00201	<0.00201	<49.9	<49.9	<49.9	<49.9	2,120
	5	12/2/2020	In-Situ	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	1,940
	10	12/2/2020	In-Situ	<0.00201	<0.00201	<49.8	<49.8	<49.8	<49.8	3,730
	15	12/2/2020	In-Situ	--	--	--	--	--	--	2,810
	20	12/2/2020	In-Situ	--	--	--	--	--	--	1,410
	25	12/2/2020	In-Situ	--	--	--	--	--	--	54.9
S-6	0.5	8/12/2020	In-Situ	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	10,400
	1	8/27/2020	In-Situ	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	2,930
	1.5	8/27/2020	In-Situ	<0.00199	<0.00199	<49.8	<49.8	<49.8	<49.8	4,250
	5	12/2/2020	In-Situ	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	549
	10	12/2/2020	In-Situ	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	231
	15	12/2/2020	In-Situ	--	--	--	--	--	--	245
	20	12/2/2020	In-Situ	--	--	--	--	--	--	316
	25	12/2/2020	In-Situ	--	--	--	--	--	--	14.4
S-7	0.5	8/12/2020	In-Situ	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	9,240
	1	8/27/2020	In-Situ	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	6,510
	1.5	8/27/2020	In-Situ	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	3,820
	5	12/2/2020	In-Situ	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	1,040

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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 / 20,000
	10	12/2/2020	In-Situ	<0.00201	<0.00201	<49.8	<49.8	<49.8	<49.8	221
	15	12/2/2020	In-Situ	--	--	--	--	--	--	127
	20	12/2/2020	In-Situ	--	--	--	--	--	--	79.6
S-8	0.5	8/12/2020	In-Situ	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	7,320
	1	8/12/2020	In-Situ	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	6,960
	1	8/27/2020	In-Situ	<0.00198	<0.00198	<50.0	52.2	<50.0	52.2	8,690
	1.5	8/27/2020	In-Situ	<0.00199	<0.00199	<49.9	161	<49.9	161	3,230
	5	12/2/2020	In-Situ	<0.00198	<0.00198	<49.9	<49.9	<49.9	<49.9	501
	10	12/2/2020	In-Situ	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	558
	15	12/2/2020	In-Situ	--	--	--	--	--	--	970
	20	12/2/2020	In-Situ	--	--	--	--	--	--	707
	25	12/2/2020	In-Situ	--	--	--	--	--	--	183
S-9	0.5	8/12/2020	In-Situ	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	9,070
	1	8/27/2020	In-Situ	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	5,180
	1.5	8/27/2020	In-Situ	<0.00198	<0.00198	<50.0	118	<50.0	118	6,210
	5	12/2/2020	In-Situ	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	962
	10	12/2/2020	In-Situ	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	183
	15	12/2/2020	In-Situ	--	--	--	--	--	--	236
	20	12/2/2020	In-Situ	--	--	--	--	--	--	132
S-10	0.5	8/12/2020	In-Situ	<0.00198	<0.00198	<49.9	59.6	<49.6	59.6	1,810
	1	8/12/2020	In-Situ	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	2,770
	1	8/27/2020	In-Situ	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	3,130

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North 32° 47' 27.40", West 103° 30' 39.27"

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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 / 20,000
	1.5	8/27/2020	In-Situ	<0.00201	<0.00201	<49.8	<49.8	<49.8	<49.8	2,090
	5	12/2/2020	In-Situ	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	2,150
	10	12/2/2020	In-Situ	<0.00199	<0.00199	<49.8	<49.8	<49.8	<49.8	1,530
	15	12/2/2020	In-Situ	--	--	--	--	--	--	1,980
	20	12/2/2020	In-Situ	--	--	--	--	--	--	1,950
	25	12/2/2020	In-Situ	--	--	--	--	--	--	1,290
	30	12/2/2020	In-Situ	--	--	--	--	--	--	1,140
	35	12/2/2020	In-Situ	--	--	--	--	--	--	380
	40	12/2/2020	In-Situ	--	--	--	--	--	--	281
S-11	0.5	8/12/2020	In-Situ	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	54.2
S-12	0.5	8/12/2020	In-Situ	<0.00199	<0.00199	<49.8	<49.8	<49.8	<49.8	<5.01
S-13	0.5	8/12/2020	In-Situ	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	1,330
	1	8/27/2020	In-Situ	<0.00201	<0.00201	<49.8	<49.8	<49.8	<49.8	27.5
	1.5	8/27/2020	In-Situ	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	20.9
S-14	0.5	8/12/2020	In-Situ	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	49.9
S-15	0.5	8/12/2020	In-Situ	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	74.1

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

Depth in feet below ground surface (bgs)

Table 1
Soil Sample Analytical Data Summary
Central Vacuum Unit #139
Lea County, New Mexico
North 32° 47' 27.40", West 103° 30' 39.27"

Page 5 of 5

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 / 20,000

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

<: denotes concentration less than analytical method reporting limit

Bold and Highlighted exceeds OCD remediation action limits

Figures

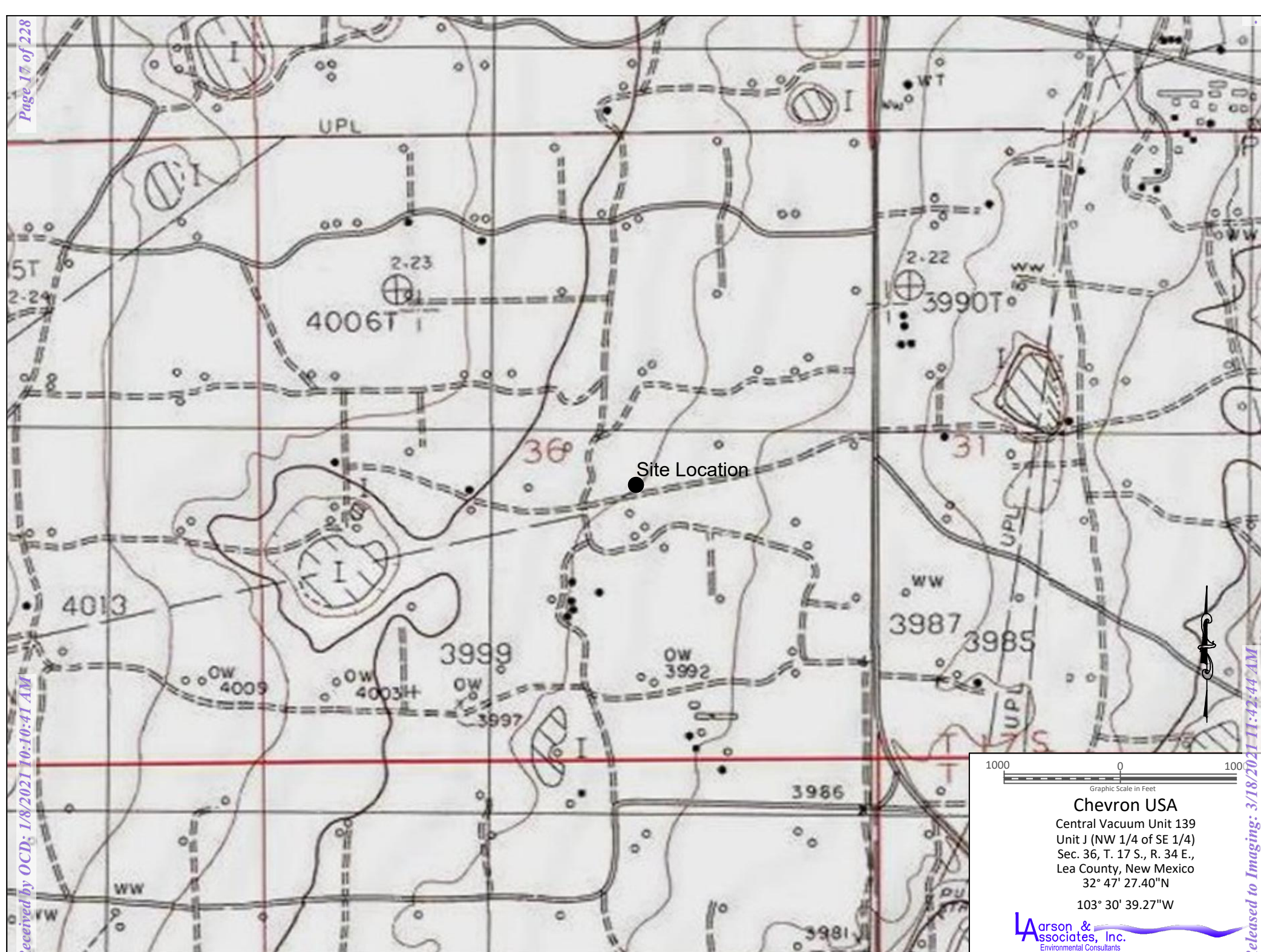
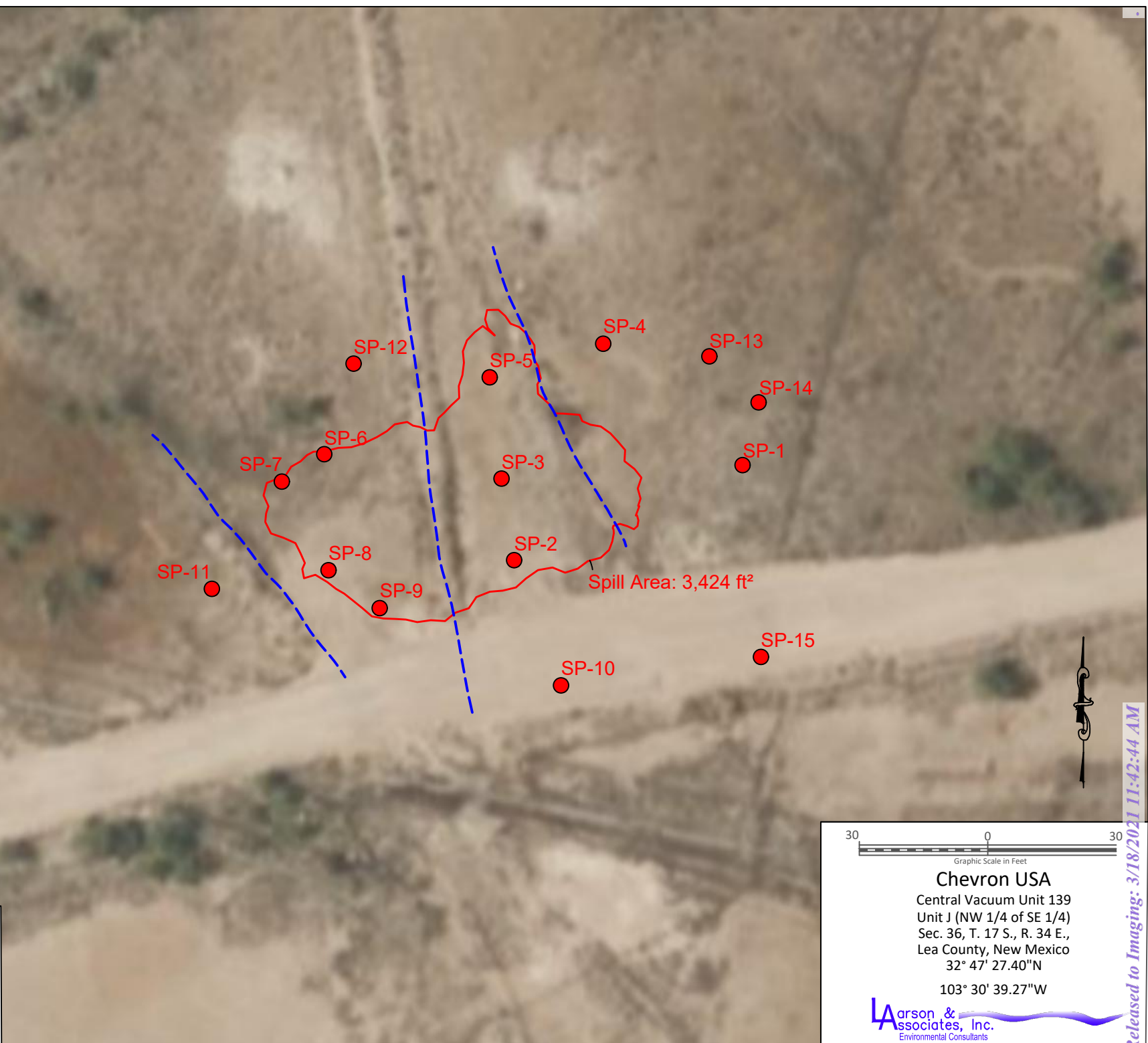


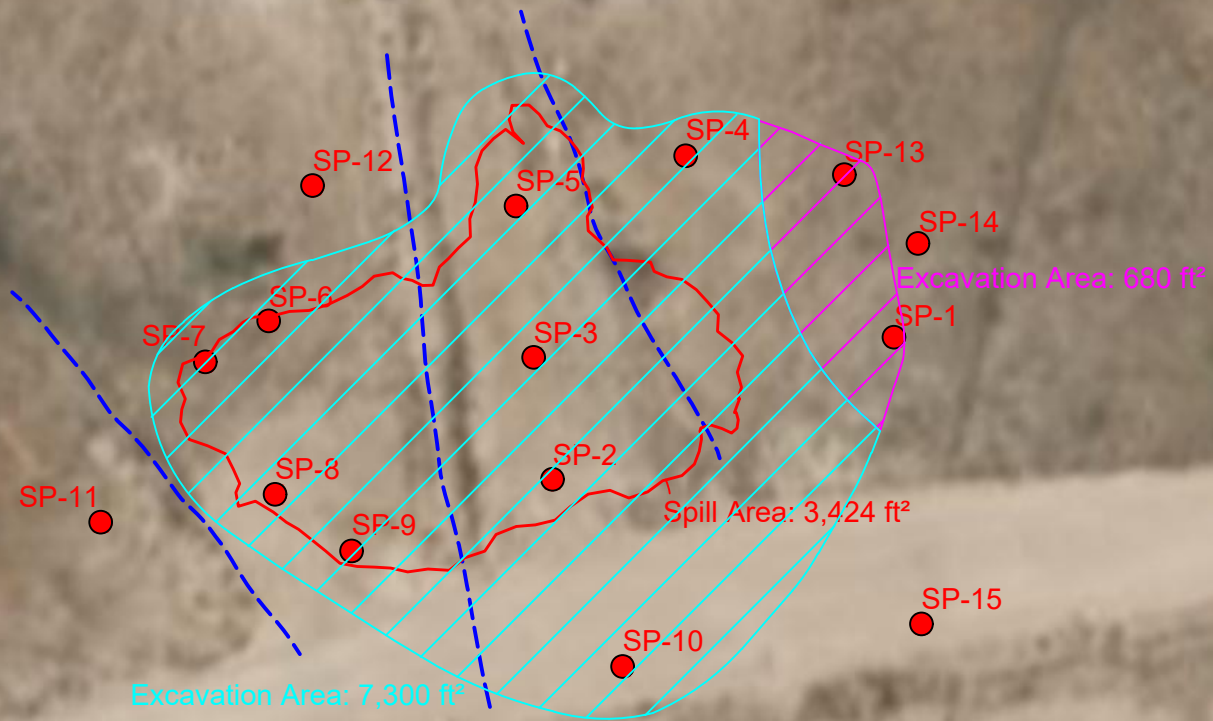
Figure 1 - Topographic Map

Legend

-  - Soil Sample Location
-  - Spill Area
-  - Buried Line

Figure 2 - Aerial Map





Legend

- Soil Sample Location
- Spill Area
- Buried Line
- Proposed Excavation Location: 1' bgs
- Proposed Excavation Location: 4.1' bgs



Chevron USA

Central Vacuum Unit 139
Unit J (NW 1/4 of SE 1/4)
Sec. 36, T. 17 S., R. 34 E.,
Lea County, New Mexico
32° 47' 27.40"N
103° 30' 39.27"W

Larson & Associates, Inc.
Environmental Consultants

Figure 3 - Aerial Map Showing Proposed Excavation Locations

Appendix A
Chevron Spill Calculation

State of New Mexico
Oil Conservation Division

Page 3

Incident ID	
District RP	
Facility ID	
Application ID	

Incident Date		7/13/2020			
Incident Time		Start Time	End Time		
		6:00 AM	1:04 PM		
Location	CVU 139 - API 30-025-26078				
Lat/Long	32.7904, -103.5118, UL J, Sec 36, T17S, 34E				
All volumes in following table in barrels					
Area	Standing Liquid	In Soil	dimensions / shape	Oil Volume	Water Volume
1	83.13	8.98	56x50	0	92.11
2					
3					
4					
5					
6					
7					
8					
Total Fluid				0	92.11
Fluid Recovered in barrels		Oil Volume		Water Volume	
		0		70	

Appendix B
Karst Risk Potential



Browser

Favorites

- Spatial Bookmarks
- Project Home
- Home
- C:\
- D:\
- L:\
- Z:\
- GeoPackage
- SpatialLite
- 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



Appendix C
Laboratory Reports

Certificate of Analysis Summary 669904

Larson and Associates, Inc., Midland, TX

Project Name: Chevron-Central Vacuum Unit #B9

Project Id: 20-0107-17

Date Received in Lab: Thu 08.13.2020 08:31

Contact: Mark Larson

Report Date: 08.20.2020 10:21

Project Location:

Project Manager: Holly Taylor

<i>Analysis Requested</i>	<i>Lab Id:</i>	669904-001	669904-002	669904-003	669904-004	669904-005	669904-006
	<i>Field Id:</i>	SP-1, 0.5'	SP-2, 0.5'	SP-3, 0.5'	SP-4, 0.5'	SP-5, 0.5'	SP-6, 0.5'
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	08.12.2020 11:24	08.12.2020 11:30	08.12.2020 11:35	08.12.2020 11:41	08.12.2020 11:52	08.12.2020 12:01
BTEX by EPA 8021B	<i>Extracted:</i>	08.14.2020 08:00	08.14.2020 08:00	08.14.2020 08:00	08.14.2020 08:00	08.14.2020 08:00	08.14.2020 08:00
	<i>Analyzed:</i>	08.14.2020 14:06	08.14.2020 14:27	08.14.2020 15:51	08.14.2020 16:11	08.14.2020 16:32	08.14.2020 16:52
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201
Toluene		<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201
Ethylbenzene		<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201
m,p-Xylenes		<0.00398 0.00398	<0.00402 0.00402	<0.00402 0.00402	<0.00399 0.00399	<0.00401 0.00401	<0.00402 0.00402
o-Xylene		<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201
Total Xylenes		<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201
Total BTEX		<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201
Chloride by EPA 300	<i>Extracted:</i>	08.13.2020 16:30	08.13.2020 16:30	08.13.2020 16:30	08.13.2020 16:30	08.13.2020 16:30	08.13.2020 16:30
	<i>Analyzed:</i>	08.13.2020 18:20	08.13.2020 18:45	08.13.2020 18:52	08.13.2020 19:11	08.13.2020 19:17	08.13.2020 19:24
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		10700 99.8	10500 99.0	11000 101	6770 50.0	6560 50.0	10400 100
TPH by SW8015 Mod	<i>Extracted:</i>	08.14.2020 12:00	08.14.2020 12:00	08.14.2020 12:00	08.14.2020 12:00	08.14.2020 12:00	08.14.2020 12:00
	<i>Analyzed:</i>	08.14.2020 12:46	08.14.2020 13:51	08.14.2020 14:12	08.14.2020 14:34	08.14.2020 14:56	08.14.2020 15:17
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0	<50.0 50.0	<49.9 49.9	<49.8 49.8	<50.0 50.0	<50.0 50.0
Diesel Range Organics (DRO)		<50.0 50.0	<50.0 50.0	<49.9 49.9	<49.8 49.8	<50.0 50.0	<50.0 50.0
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<50.0 50.0	<49.9 49.9	<49.8 49.8	<50.0 50.0	<50.0 50.0
Total TPH		<50.0 50.0	<50.0 50.0	<49.9 49.9	<49.8 49.8	<50.0 50.0	<50.0 50.0

BRL - Below Reporting Limit



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

Certificate of Analysis Summary 669904

Larson and Associates, Inc., Midland, TX

Project Name: Chevron-Central Vacuum Unit #B9

Project Id: 20-0107-17

Date Received in Lab: Thu 08.13.2020 08:31

Contact: Mark Larson

Report Date: 08.20.2020 10:21

Project Location:

Project Manager: Holly Taylor

<i>Analysis Requested</i>	<i>Lab Id:</i>	669904-007	669904-008	669904-009	669904-010	669904-011	669904-012
	<i>Field Id:</i>	SP-7, 0.5'	SP-8, 0.5'	SP-8, 1'	SP-9, 0.5'	SP-10, 0.5'	SP-10 1'
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	08.12.2020 12:05	08.12.2020 12:09	08.12.2020 12:11	08.12.2020 12:15	08.12.2020 12:18	08.12.2020 12:20
BTEX by EPA 8021B	<i>Extracted:</i>	08.14.2020 16:30	08.14.2020 16:30	08.14.2020 16:30	08.14.2020 16:30	08.14.2020 16:30	08.14.2020 16:30
	<i>Analyzed:</i>	08.14.2020 22:21	08.14.2020 22:41	08.14.2020 23:02	08.14.2020 23:22	08.14.2020 23:42	08.15.2020 00:03
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199
Toluene		<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199
Ethylbenzene		<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199
m,p-Xylenes		<0.00398 0.00398	<0.00399 0.00399	<0.00397 0.00397	<0.00399 0.00399	<0.00396 0.00396	<0.00398 0.00398
o-Xylene		<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199
Total Xylenes		<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199
Total BTEX		<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199
Chloride by EPA 300	<i>Extracted:</i>	08.13.2020 16:30	08.13.2020 16:30	08.13.2020 16:30	08.13.2020 16:30	08.14.2020 10:30	08.14.2020 10:30
	<i>Analyzed:</i>	08.13.2020 19:30	08.13.2020 19:36	08.13.2020 19:43	08.13.2020 19:49	08.14.2020 13:06	08.14.2020 13:25
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		9240 50.0	7320 50.5	6960 49.8	9070 49.6	1810 24.9	2770 25.1
TPH by SW8015 Mod	<i>Extracted:</i>	08.14.2020 12:00	08.14.2020 12:00	08.14.2020 12:00	08.14.2020 12:00	08.14.2020 12:00	08.14.2020 12:00
	<i>Analyzed:</i>	08.14.2020 15:39	08.14.2020 16:01	08.14.2020 16:23	08.14.2020 16:45	08.14.2020 17:29	08.14.2020 17:51
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<49.9 49.9	<49.8 49.8	<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.0 50.0
Diesel Range Organics (DRO)		<49.9 49.9	<49.8 49.8	<50.0 50.0	<50.0 50.0	59.6 49.9	<50.0 50.0
Motor Oil Range Hydrocarbons (MRO)		<49.9 49.9	<49.8 49.8	<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.0 50.0
Total TPH		<49.9 49.9	<49.8 49.8	<50.0 50.0	<50.0 50.0	59.6 49.9	<50.0 50.0

BRL - Below Reporting Limit



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

Certificate of Analysis Summary 669904

Larson and Associates, Inc., Midland, TX

Project Name: Chevron-Central Vacuum Unit #B9

Project Id: 20-0107-17

Date Received in Lab: Thu 08.13.2020 08:31

Contact: Mark Larson

Report Date: 08.20.2020 10:21

Project Location:

Project Manager: Holly Taylor

Analysis Requested	Lab Id:	669904-013	669904-014	669904-015			
	Field Id:	SP-11, 0.5'	SP-12, 0.5'	SP-13, 0.5'			
	Depth:						
	Matrix:	SOIL	SOIL	SOIL			
	Sampled:	08.12.2020 12:27	08.12.2020 12:31	08.12.2020 12:35			
BTEX by EPA 8021B	Extracted:	08.14.2020 16:30	08.14.2020 16:30	08.14.2020 16:30			
	Analyzed:	08.15.2020 00:23	08.15.2020 00:44	08.15.2020 01:04			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198			
Toluene		<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198			
Ethylbenzene		<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198			
m,p-Xylenes		<0.00400 0.00400	<0.00398 0.00398	<0.00397 0.00397			
o-Xylene		<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198			
Total Xylenes		<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198			
Total BTEX		<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198			
Chloride by EPA 300	Extracted:	08.14.2020 10:30	08.14.2020 10:30	08.14.2020 10:30			
	Analyzed:	08.14.2020 13:31	08.14.2020 13:38	08.14.2020 13:44			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		54.2 4.98	<5.01 5.01	1330 25.0			
TPH by SW8015 Mod	Extracted:	08.14.2020 12:00	08.14.2020 12:00	08.14.2020 12:00			
	Analyzed:	08.14.2020 18:13	08.14.2020 18:34	08.14.2020 18:56			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		<49.9 49.9	<49.8 49.8	<50.0 50.0			
Diesel Range Organics (DRO)		<49.9 49.9	<49.8 49.8	<50.0 50.0			
Motor Oil Range Hydrocarbons (MRO)		<49.9 49.9	<49.8 49.8	<50.0 50.0			
Total TPH		<49.9 49.9	<49.8 49.8	<50.0 50.0			

BRL - Below Reporting Limit

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



Analytical Report 669904

for

Larson and Associates, Inc.

Project Manager: Mark Larson

Chevron-Central Vacuum Unit #B9

20-0107-17

08.20.2020

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)



08.20.2020

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

Reference: Eurofins Xenco, LLC Report No(s): **669904**
Chevron-Central Vacuum Unit #B9
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) 669904. 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. 669904 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Holly Taylor
Project Manager

A Small Business and Minority Company

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

**Sample Cross Reference 669904****Larson and Associates, Inc., Midland, TX**

Chevron-Central Vacuum Unit #B9

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SP-1, 0.5'	S	08.12.2020 11:24		669904-001
SP-2, 0.5'	S	08.12.2020 11:30		669904-002
SP-3, 0.5'	S	08.12.2020 11:35		669904-003
SP-4, 0.5'	S	08.12.2020 11:41		669904-004
SP-5, 0.5'	S	08.12.2020 11:52		669904-005
SP-6, 0.5'	S	08.12.2020 12:01		669904-006
SP-7, 0.5'	S	08.12.2020 12:05		669904-007
SP-8, 0.5'	S	08.12.2020 12:09		669904-008
SP-8, 1'	S	08.12.2020 12:11		669904-009
SP-9, 0.5'	S	08.12.2020 12:15		669904-010
SP-10, 0.5'	S	08.12.2020 12:18		669904-011
SP-10 1'	S	08.12.2020 12:20		669904-012
SP-11, 0.5'	S	08.12.2020 12:27		669904-013
SP-12, 0.5'	S	08.12.2020 12:31		669904-014
SP-13, 0.5'	S	08.12.2020 12:35		669904-015

**CASE NARRATIVE****Client Name: Larson and Associates, Inc.****Project Name: Chevron-Central Vacuum Unit #B9**Project ID: 20-0107-17
Work Order Number(s): 669904Report Date: 08.20.2020
Date Received: 08.13.2020**Sample receipt non conformances and comments:****Sample receipt non conformances and comments per sample:**

None

Analytical non conformances and comments:

Batch: LBA-3134668 BTEX by EPA 8021B

Lab Sample ID 669904-007 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Ethylbenzene, 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: 669904-007, -008, -009, -010, -011, -012, -013, -014, -015.

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



Certificate of Analytical Results 669904

Larson and Associates, Inc., Midland, TX

Chevron-Central Vacuum Unit #B9

Sample Id: **SP-1, 0.5'**

Matrix: Soil

Date Received: 08.13.2020 08:31

Lab Sample Id: 669904-001

Date Collected: 08.12.2020 11:24

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 08.13.2020 16:30

Basis: Wet Weight

Seq Number: 3134521

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10700	99.8	mg/kg	08.13.2020 18:20		20

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 08.14.2020 12:00

Basis: Wet Weight

Seq Number: 3134713

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	08.14.2020 12:46	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	08.14.2020 12:46	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	08.14.2020 12:46	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	08.14.2020 12:46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-130	08.14.2020 12:46	
o-Terphenyl	84-15-1	104	%	70-130	08.14.2020 12:46	



Certificate of Analytical Results 669904

Larson and Associates, Inc., Midland, TX

Chevron-Central Vacuum Unit #B9

Sample Id: **SP-1, 0.5'**

Matrix: Soil

Date Received: 08.13.2020 08:31

Lab Sample Id: 669904-001

Date Collected: 08.12.2020 11:24

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 08.14.2020 08:00

Basis: Wet Weight

Seq Number: 3134566

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.14.2020 14:06	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.14.2020 14:06	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.14.2020 14:06	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.14.2020 14:06	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.14.2020 14:06	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.14.2020 14:06	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.14.2020 14:06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	103	%	70-130	08.14.2020 14:06	
1,4-Difluorobenzene	540-36-3	103	%	70-130	08.14.2020 14:06	



Certificate of Analytical Results 669904

Larson and Associates, Inc., Midland, TX

Chevron-Central Vacuum Unit #B9

Sample Id: **SP-2, 0.5'**

Matrix: Soil

Date Received: 08.13.2020 08:31

Lab Sample Id: 669904-002

Date Collected: 08.12.2020 11:30

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 08.13.2020 16:30

Basis: Wet Weight

Seq Number: 3134521

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10500	99.0	mg/kg	08.13.2020 18:45		20

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 08.14.2020 12:00

Basis: Wet Weight

Seq Number: 3134713

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	08.14.2020 13:51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	08.14.2020 13:51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	08.14.2020 13:51	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	08.14.2020 13:51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-130	08.14.2020 13:51	
o-Terphenyl	84-15-1	105	%	70-130	08.14.2020 13:51	



Certificate of Analytical Results 669904

Larson and Associates, Inc., Midland, TX

Chevron-Central Vacuum Unit #B9

Sample Id: **SP-2, 0.5'**

Matrix: Soil

Date Received: 08.13.2020 08:31

Lab Sample Id: 669904-002

Date Collected: 08.12.2020 11:30

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 08.14.2020 08:00

Basis: Wet Weight

Seq Number: 3134566

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	08.14.2020 14:27	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	08.14.2020 14:27	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	08.14.2020 14:27	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	08.14.2020 14:27	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	08.14.2020 14:27	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	08.14.2020 14:27	U	1
Total BTEX		<0.00201	0.00201	mg/kg	08.14.2020 14:27	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	08.14.2020 14:27		
4-Bromofluorobenzene	460-00-4	104	%	70-130	08.14.2020 14:27		



Certificate of Analytical Results 669904

Larson and Associates, Inc., Midland, TX

Chevron-Central Vacuum Unit #B9

Sample Id: **SP-3, 0.5'**

Matrix: Soil

Date Received: 08.13.2020 08:31

Lab Sample Id: 669904-003

Date Collected: 08.12.2020 11:35

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 08.13.2020 16:30

Basis: Wet Weight

Seq Number: 3134521

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	11000	101	mg/kg	08.13.2020 18:52		20

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 08.14.2020 12:00

Basis: Wet Weight

Seq Number: 3134713

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	08.14.2020 14:12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	08.14.2020 14:12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	08.14.2020 14:12	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	08.14.2020 14:12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-130	08.14.2020 14:12	
o-Terphenyl	84-15-1	107	%	70-130	08.14.2020 14:12	



Certificate of Analytical Results 669904

Larson and Associates, Inc., Midland, TX

Chevron-Central Vacuum Unit #B9

Sample Id: **SP-3, 0.5'**

Matrix: Soil

Date Received: 08.13.2020 08:31

Lab Sample Id: 669904-003

Date Collected: 08.12.2020 11:35

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 08.14.2020 08:00

Basis: Wet Weight

Seq Number: 3134566

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	08.14.2020 15:51	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	08.14.2020 15:51	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	08.14.2020 15:51	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	08.14.2020 15:51	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	08.14.2020 15:51	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	08.14.2020 15:51	U	1
Total BTEX		<0.00201	0.00201	mg/kg	08.14.2020 15:51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	100	%	70-130	08.14.2020 15:51	
4-Bromofluorobenzene	460-00-4	104	%	70-130	08.14.2020 15:51	



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Larson and Associates, Inc., Midland, TX

Chevron-Central Vacuum Unit #B9

Sample Id: **SP-4, 0.5'**

Matrix: Soil

Date Received: 08.13.2020 08:31

Lab Sample Id: 669904-004

Date Collected: 08.12.2020 11:41

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 08.13.2020 16:30

Basis: Wet Weight

Seq Number: 3134521

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6770	50.0	mg/kg	08.13.2020 19:11		10

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 08.14.2020 12:00

Basis: Wet Weight

Seq Number: 3134713

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	08.14.2020 14:34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	08.14.2020 14:34	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	08.14.2020 14:34	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	08.14.2020 14:34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-130	08.14.2020 14:34	
o-Terphenyl	84-15-1	102	%	70-130	08.14.2020 14:34	



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Larson and Associates, Inc., Midland, TX

Chevron-Central Vacuum Unit #B9

Sample Id: **SP-4, 0.5'**

Matrix: Soil

Date Received: 08.13.2020 08:31

Lab Sample Id: 669904-004

Date Collected: 08.12.2020 11:41

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 08.14.2020 08:00

Basis: Wet Weight

Seq Number: 3134566

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.14.2020 16:11	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.14.2020 16:11	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.14.2020 16:11	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.14.2020 16:11	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.14.2020 16:11	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.14.2020 16:11	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.14.2020 16:11	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	104	%	70-130	08.14.2020 16:11		
1,4-Difluorobenzene	540-36-3	104	%	70-130	08.14.2020 16:11		



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Larson and Associates, Inc., Midland, TX

Chevron-Central Vacuum Unit #B9

Sample Id: **SP-5, 0.5'**

Matrix: Soil

Date Received: 08.13.2020 08:31

Lab Sample Id: 669904-005

Date Collected: 08.12.2020 11:52

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 08.13.2020 16:30

Basis: Wet Weight

Seq Number: 3134521

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6560	50.0	mg/kg	08.13.2020 19:17		10

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 08.14.2020 12:00

Basis: Wet Weight

Seq Number: 3134713

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	08.14.2020 14:56	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	08.14.2020 14:56	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	08.14.2020 14:56	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	08.14.2020 14:56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	116	%	70-130	08.14.2020 14:56	
o-Terphenyl	84-15-1	110	%	70-130	08.14.2020 14:56	



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Larson and Associates, Inc., Midland, TX

Chevron-Central Vacuum Unit #B9

Sample Id: **SP-5, 0.5'**

Matrix: Soil

Date Received: 08.13.2020 08:31

Lab Sample Id: 669904-005

Date Collected: 08.12.2020 11:52

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 08.14.2020 08:00

Basis: Wet Weight

Seq Number: 3134566

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.14.2020 16:32	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.14.2020 16:32	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.14.2020 16:32	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	08.14.2020 16:32	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.14.2020 16:32	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.14.2020 16:32	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.14.2020 16:32	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	104	%	70-130	08.14.2020 16:32		
1,4-Difluorobenzene	540-36-3	101	%	70-130	08.14.2020 16:32		



Certificate of Analytical Results 669904

Larson and Associates, Inc., Midland, TX

Chevron-Central Vacuum Unit #B9

Sample Id: **SP-6, 0.5'**

Matrix: Soil

Date Received: 08.13.2020 08:31

Lab Sample Id: 669904-006

Date Collected: 08.12.2020 12:01

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 08.13.2020 16:30

Basis: Wet Weight

Seq Number: 3134521

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10400	100	mg/kg	08.13.2020 19:24		20

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 08.14.2020 12:00

Basis: Wet Weight

Seq Number: 3134713

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	08.14.2020 15:17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	08.14.2020 15:17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	08.14.2020 15:17	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	08.14.2020 15:17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-130	08.14.2020 15:17	
o-Terphenyl	84-15-1	103	%	70-130	08.14.2020 15:17	



Certificate of Analytical Results 669904

Larson and Associates, Inc., Midland, TX

Chevron-Central Vacuum Unit #B9

Sample Id: **SP-6, 0.5'**

Matrix: Soil

Date Received: 08.13.2020 08:31

Lab Sample Id: 669904-006

Date Collected: 08.12.2020 12:01

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 08.14.2020 08:00

Basis: Wet Weight

Seq Number: 3134566

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	08.14.2020 16:52	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	08.14.2020 16:52	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	08.14.2020 16:52	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	08.14.2020 16:52	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	08.14.2020 16:52	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	08.14.2020 16:52	U	1
Total BTEX		<0.00201	0.00201	mg/kg	08.14.2020 16:52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	105	%	70-130	08.14.2020 16:52	
1,4-Difluorobenzene	540-36-3	102	%	70-130	08.14.2020 16:52	



Certificate of Analytical Results 669904

Larson and Associates, Inc., Midland, TX

Chevron-Central Vacuum Unit #B9

Sample Id: **SP-7, 0.5'**

Matrix: Soil

Date Received: 08.13.2020 08:31

Lab Sample Id: 669904-007

Date Collected: 08.12.2020 12:05

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 08.13.2020 16:30

Basis: Wet Weight

Seq Number: 3134521

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9240	50.0	mg/kg	08.13.2020 19:30		10

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 08.14.2020 12:00

Basis: Wet Weight

Seq Number: 3134713

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	08.14.2020 15:39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	08.14.2020 15:39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	08.14.2020 15:39	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	08.14.2020 15:39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-130	08.14.2020 15:39	
o-Terphenyl	84-15-1	110	%	70-130	08.14.2020 15:39	



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Larson and Associates, Inc., Midland, TX

Chevron-Central Vacuum Unit #B9

Sample Id: **SP-7, 0.5'**
Lab Sample Id: 669904-007

Matrix: Soil
Date Collected: 08.12.2020 12:05

Date Received: 08.13.2020 08:31

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 08.14.2020 16:30

Basis: Wet Weight

Seq Number: 3134668

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.14.2020 22:21	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.14.2020 22:21	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.14.2020 22:21	UX	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.14.2020 22:21	UX	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.14.2020 22:21	UX	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.14.2020 22:21	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.14.2020 22:21	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	08.14.2020 22:21		
4-Bromofluorobenzene	460-00-4	104	%	70-130	08.14.2020 22:21		



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Larson and Associates, Inc., Midland, TX

Chevron-Central Vacuum Unit #B9

Sample Id: **SP-8, 0.5'**

Matrix: Soil

Date Received: 08.13.2020 08:31

Lab Sample Id: 669904-008

Date Collected: 08.12.2020 12:09

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 08.13.2020 16:30

Basis: Wet Weight

Seq Number: 3134521

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7320	50.5	mg/kg	08.13.2020 19:36		10

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 08.14.2020 12:00

Basis: Wet Weight

Seq Number: 3134713

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	08.14.2020 16:01	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	08.14.2020 16:01	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	08.14.2020 16:01	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	08.14.2020 16:01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-130	08.14.2020 16:01	
o-Terphenyl	84-15-1	111	%	70-130	08.14.2020 16:01	



Certificate of Analytical Results 669904

Larson and Associates, Inc., Midland, TX

Chevron-Central Vacuum Unit #B9

Sample Id: **SP-8, 0.5'**

Matrix: Soil

Date Received: 08.13.2020 08:31

Lab Sample Id: 669904-008

Date Collected: 08.12.2020 12:09

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 08.14.2020 16:30

Basis: Wet Weight

Seq Number: 3134668

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.14.2020 22:41	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.14.2020 22:41	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.14.2020 22:41	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.14.2020 22:41	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.14.2020 22:41	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.14.2020 22:41	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.14.2020 22:41	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	103	%	70-130	08.14.2020 22:41		
1,4-Difluorobenzene	540-36-3	103	%	70-130	08.14.2020 22:41		



Certificate of Analytical Results 669904

Larson and Associates, Inc., Midland, TX

Chevron-Central Vacuum Unit #B9

Sample Id: **SP-8, 1'**
 Lab Sample Id: 669904-009

Matrix: Soil
 Date Collected: 08.12.2020 12:11

Date Received: 08.13.2020 08:31

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 08.13.2020 16:30

Basis: Wet Weight

Seq Number: 3134521

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6960	49.8	mg/kg	08.13.2020 19:43		10

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 08.14.2020 12:00

Basis: Wet Weight

Seq Number: 3134713

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	08.14.2020 16:23	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	08.14.2020 16:23	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	08.14.2020 16:23	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	08.14.2020 16:23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-130	08.14.2020 16:23	
o-Terphenyl	84-15-1	109	%	70-130	08.14.2020 16:23	



Certificate of Analytical Results 669904

Larson and Associates, Inc., Midland, TX

Chevron-Central Vacuum Unit #B9

Sample Id: **SP-8, 1'**
Lab Sample Id: 669904-009

Matrix: Soil
Date Collected: 08.12.2020 12:11

Date Received: 08.13.2020 08:31

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 08.14.2020 16:30

Basis: Wet Weight

Seq Number: 3134668

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	08.14.2020 23:02	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	08.14.2020 23:02	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	08.14.2020 23:02	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	08.14.2020 23:02	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	08.14.2020 23:02	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	08.14.2020 23:02	U	1
Total BTEX		<0.00198	0.00198	mg/kg	08.14.2020 23:02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	104	%	70-130	08.14.2020 23:02	
1,4-Difluorobenzene	540-36-3	103	%	70-130	08.14.2020 23:02	



Certificate of Analytical Results 669904

Larson and Associates, Inc., Midland, TX

Chevron-Central Vacuum Unit #B9

Sample Id: **SP-9, 0.5'**

Matrix: Soil

Date Received: 08.13.2020 08:31

Lab Sample Id: 669904-010

Date Collected: 08.12.2020 12:15

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 08.13.2020 16:30

Basis: Wet Weight

Seq Number: 3134521

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9070	49.6	mg/kg	08.13.2020 19:49		10

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 08.14.2020 12:00

Basis: Wet Weight

Seq Number: 3134713

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	08.14.2020 16:45	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	08.14.2020 16:45	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	08.14.2020 16:45	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	08.14.2020 16:45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-130	08.14.2020 16:45	
o-Terphenyl	84-15-1	107	%	70-130	08.14.2020 16:45	



Certificate of Analytical Results 669904

Larson and Associates, Inc., Midland, TX

Chevron-Central Vacuum Unit #B9

Sample Id: **SP-9, 0.5'**

Matrix: Soil

Date Received: 08.13.2020 08:31

Lab Sample Id: 669904-010

Date Collected: 08.12.2020 12:15

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 08.14.2020 16:30

Basis: Wet Weight

Seq Number: 3134668

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.14.2020 23:22	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.14.2020 23:22	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.14.2020 23:22	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.14.2020 23:22	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.14.2020 23:22	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.14.2020 23:22	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.14.2020 23:22	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	08.14.2020 23:22		
4-Bromofluorobenzene	460-00-4	104	%	70-130	08.14.2020 23:22		



Certificate of Analytical Results 669904

Larson and Associates, Inc., Midland, TX

Chevron-Central Vacuum Unit #B9

Sample Id: **SP-10, 0.5'**

Matrix: Soil

Date Received: 08.13.2020 08:31

Lab Sample Id: 669904-011

Date Collected: 08.12.2020 12:18

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SPC

% Moisture:

Analyst: SPC

Date Prep: 08.14.2020 10:30

Basis: Wet Weight

Seq Number: 3134685

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1810	24.9	mg/kg	08.14.2020 13:06		5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 08.14.2020 12:00

Basis: Wet Weight

Seq Number: 3134713

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	08.14.2020 17:29	U	1
Diesel Range Organics (DRO)	C10C28DRO	59.6	49.9	mg/kg	08.14.2020 17:29		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	08.14.2020 17:29	U	1
Total TPH	PHC635	59.6	49.9	mg/kg	08.14.2020 17:29		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-130	08.14.2020 17:29	
o-Terphenyl	84-15-1	105	%	70-130	08.14.2020 17:29	



Certificate of Analytical Results 669904

Larson and Associates, Inc., Midland, TX

Chevron-Central Vacuum Unit #B9

Sample Id: **SP-10, 0.5'**

Matrix: Soil

Date Received: 08.13.2020 08:31

Lab Sample Id: 669904-011

Date Collected: 08.12.2020 12:18

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 08.14.2020 16:30

Basis: Wet Weight

Seq Number: 3134668

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	08.14.2020 23:42	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	08.14.2020 23:42	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	08.14.2020 23:42	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	08.14.2020 23:42	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	08.14.2020 23:42	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	08.14.2020 23:42	U	1
Total BTEX		<0.00198	0.00198	mg/kg	08.14.2020 23:42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	104	%	70-130	08.14.2020 23:42	
1,4-Difluorobenzene	540-36-3	103	%	70-130	08.14.2020 23:42	



Certificate of Analytical Results 669904

Larson and Associates, Inc., Midland, TX

Chevron-Central Vacuum Unit #B9

Sample Id: **SP-10 1'**
 Lab Sample Id: 669904-012

Matrix: Soil
 Date Collected: 08.12.2020 12:20

Date Received: 08.13.2020 08:31

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SPC

% Moisture:

Analyst: SPC

Date Prep: 08.14.2020 10:30

Basis: Wet Weight

Seq Number: 3134685

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2770	25.1	mg/kg	08.14.2020 13:25		5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 08.14.2020 12:00

Basis: Wet Weight

Seq Number: 3134713

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	08.14.2020 17:51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	08.14.2020 17:51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	08.14.2020 17:51	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	08.14.2020 17:51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-130	08.14.2020 17:51	
o-Terphenyl	84-15-1	106	%	70-130	08.14.2020 17:51	



Certificate of Analytical Results 669904

Larson and Associates, Inc., Midland, TX

Chevron-Central Vacuum Unit #B9

Sample Id: **SP-10 1'**
Lab Sample Id: 669904-012

Matrix: Soil
Date Collected: 08.12.2020 12:20

Date Received: 08.13.2020 08:31

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 08.14.2020 16:30

Basis: Wet Weight

Seq Number: 3134668

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.15.2020 00:03	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.15.2020 00:03	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.15.2020 00:03	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.15.2020 00:03	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.15.2020 00:03	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.15.2020 00:03	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.15.2020 00:03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	101	%	70-130	08.15.2020 00:03	
1,4-Difluorobenzene	540-36-3	102	%	70-130	08.15.2020 00:03	



Certificate of Analytical Results 669904

Larson and Associates, Inc., Midland, TX

Chevron-Central Vacuum Unit #B9

Sample Id: **SP-11, 0.5'**

Matrix: Soil

Date Received: 08.13.2020 08:31

Lab Sample Id: 669904-013

Date Collected: 08.12.2020 12:27

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SPC

% Moisture:

Analyst: SPC

Date Prep: 08.14.2020 10:30

Basis: Wet Weight

Seq Number: 3134685

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	54.2	4.98	mg/kg	08.14.2020 13:31		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 08.14.2020 12:00

Basis: Wet Weight

Seq Number: 3134713

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	08.14.2020 18:13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	08.14.2020 18:13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	08.14.2020 18:13	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	08.14.2020 18:13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-130	08.14.2020 18:13	
o-Terphenyl	84-15-1	107	%	70-130	08.14.2020 18:13	



Certificate of Analytical Results 669904

Larson and Associates, Inc., Midland, TX

Chevron-Central Vacuum Unit #B9

Sample Id: **SP-11, 0.5'**

Matrix: Soil

Date Received: 08.13.2020 08:31

Lab Sample Id: 669904-013

Date Collected: 08.12.2020 12:27

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 08.14.2020 16:30

Basis: Wet Weight

Seq Number: 3134668

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.15.2020 00:23	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.15.2020 00:23	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.15.2020 00:23	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	08.15.2020 00:23	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.15.2020 00:23	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.15.2020 00:23	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.15.2020 00:23	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	105	%	70-130	08.15.2020 00:23		
1,4-Difluorobenzene	540-36-3	102	%	70-130	08.15.2020 00:23		



Certificate of Analytical Results 669904

Larson and Associates, Inc., Midland, TX

Chevron-Central Vacuum Unit #B9

Sample Id: **SP-12, 0.5'**

Matrix: Soil

Date Received: 08.13.2020 08:31

Lab Sample Id: 669904-014

Date Collected: 08.12.2020 12:31

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SPC

% Moisture:

Analyst: SPC

Date Prep: 08.14.2020 10:30

Basis: Wet Weight

Seq Number: 3134685

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.01	5.01	mg/kg	08.14.2020 13:38	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 08.14.2020 12:00

Basis: Wet Weight

Seq Number: 3134713

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	08.14.2020 18:34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	08.14.2020 18:34	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	08.14.2020 18:34	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	08.14.2020 18:34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-130	08.14.2020 18:34	
o-Terphenyl	84-15-1	104	%	70-130	08.14.2020 18:34	



Certificate of Analytical Results 669904

Larson and Associates, Inc., Midland, TX

Chevron-Central Vacuum Unit #B9

Sample Id: **SP-12, 0.5'**

Matrix: Soil

Date Received: 08.13.2020 08:31

Lab Sample Id: 669904-014

Date Collected: 08.12.2020 12:31

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 08.14.2020 16:30

Basis: Wet Weight

Seq Number: 3134668

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.15.2020 00:44	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.15.2020 00:44	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.15.2020 00:44	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.15.2020 00:44	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.15.2020 00:44	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.15.2020 00:44	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.15.2020 00:44	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	70-130	08.15.2020 00:44		
4-Bromofluorobenzene	460-00-4	105	%	70-130	08.15.2020 00:44		



Certificate of Analytical Results 669904

Larson and Associates, Inc., Midland, TX

Chevron-Central Vacuum Unit #B9

Sample Id: **SP-13, 0.5'**

Matrix: Soil

Date Received: 08.13.2020 08:31

Lab Sample Id: 669904-015

Date Collected: 08.12.2020 12:35

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SPC

% Moisture:

Analyst: SPC

Date Prep: 08.14.2020 10:30

Basis: Wet Weight

Seq Number: 3134685

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1330	25.0	mg/kg	08.14.2020 13:44		5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 08.14.2020 12:00

Basis: Wet Weight

Seq Number: 3134713

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	08.14.2020 18:56	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	08.14.2020 18:56	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	08.14.2020 18:56	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	08.14.2020 18:56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-130	08.14.2020 18:56	
o-Terphenyl	84-15-1	109	%	70-130	08.14.2020 18:56	



Certificate of Analytical Results 669904

Larson and Associates, Inc., Midland, TX

Chevron-Central Vacuum Unit #B9

Sample Id: **SP-13, 0.5'**

Matrix: Soil

Date Received: 08.13.2020 08:31

Lab Sample Id: 669904-015

Date Collected: 08.12.2020 12:35

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 08.14.2020 16:30

Basis: Wet Weight

Seq Number: 3134668

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	08.15.2020 01:04	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	08.15.2020 01:04	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	08.15.2020 01:04	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	08.15.2020 01:04	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	08.15.2020 01:04	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	08.15.2020 01:04	U	1
Total BTEX		<0.00198	0.00198	mg/kg	08.15.2020 01:04	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	106	%	70-130	08.15.2020 01:04		
1,4-Difluorobenzene	540-36-3	103	%	70-130	08.15.2020 01:04		

Flagging Criteria

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

** Surrogate recovered outside laboratory control limit.

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

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



Larson and Associates, Inc.
Chevron-Central Vacuum Unit #B9

Analytical Method: Chloride by EPA 300

Seq Number: 3134521

MB Sample Id: 7709412-1-BLK

Matrix: Solid

LCS Sample Id: 7709412-1-BKS

Prep Method: E300P

Date Prep: 08.13.2020

LCSD Sample Id: 7709412-1-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	272	109	273	109	90-110	0	20	mg/kg	08.13.2020 16:45	

Analytical Method: Chloride by EPA 300

Seq Number: 3134685

MB Sample Id: 7709466-1-BLK

Matrix: Solid

LCS Sample Id: 7709466-1-BKS

Prep Method: E300P

Date Prep: 08.14.2020

LCSD Sample Id: 7709466-1-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	243	97	243	97	90-110	0	20	mg/kg	08.14.2020 12:53	

Analytical Method: Chloride by EPA 300

Seq Number: 3134521

Parent Sample Id: 669840-003

Matrix: Soil

MS Sample Id: 669840-003 S

Prep Method: E300P

Date Prep: 08.13.2020

MSD Sample Id: 669840-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	3100	1260	4670	125	4480	110	90-110	4	20	mg/kg	08.13.2020 17:04	X

Analytical Method: Chloride by EPA 300

Seq Number: 3134521

Parent Sample Id: 669868-004

Matrix: Soil

MS Sample Id: 669868-004 S

Prep Method: E300P

Date Prep: 08.13.2020

MSD Sample Id: 669868-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1440	1250	2870	114	2830	111	90-110	1	20	mg/kg	08.13.2020 18:33	X

Analytical Method: Chloride by EPA 300

Seq Number: 3134685

Parent Sample Id: 669904-011

Matrix: Soil

MS Sample Id: 669904-011 S

Prep Method: E300P

Date Prep: 08.14.2020

MSD Sample Id: 669904-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1810	1240	3170	110	3170	110	90-110	0	20	mg/kg	08.14.2020 13:12	

Analytical Method: Chloride by EPA 300

Seq Number: 3134685

Parent Sample Id: 669966-007

Matrix: Soil

MS Sample Id: 669966-007 S

Prep Method: E300P

Date Prep: 08.14.2020

MSD Sample Id: 669966-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1.64	249	271	108	272	109	90-110	0	20	mg/kg	08.14.2020 14:41	

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

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

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

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



Larson and Associates, Inc.
Chevron-Central Vacuum Unit #B9

Analytical Method: TPH by SW8015 Mod

Seq Number: 3134713

MB Sample Id: 7709544-1-BLK

Matrix: Solid

LCS Sample Id: 7709544-1-BKS

Prep Method: SW8015P

Date Prep: 08.14.2020

LCSD Sample Id: 7709544-1-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	989	99	1050	105	70-130	6	20	mg/kg	08.14.2020 12:02	
Diesel Range Organics (DRO)	<50.0	1000	1030	103	1050	105	70-130	2	20	mg/kg	08.14.2020 12:02	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	125		118		120		70-130	%	08.14.2020 12:02
o-Terphenyl	121		113		115		70-130	%	08.14.2020 12:02

Analytical Method: TPH by SW8015 Mod

Seq Number: 3134713

Matrix: Solid

Prep Method: SW8015P

Date Prep: 08.14.2020

MB Sample Id: 7709544-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	08.15.2020 10:09	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3134713

Matrix: Soil

Prep Method: SW8015P

Date Prep: 08.14.2020

Parent Sample Id: 669904-001

MS Sample Id: 669904-001 S

MSD Sample Id: 669904-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<49.9	998	1020	102	1020	102	70-130	0	20	mg/kg	08.14.2020 13:07	
Diesel Range Organics (DRO)	<49.9	998	1030	103	1060	106	70-130	3	20	mg/kg	08.14.2020 13:07	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	114		116		70-130	%	08.14.2020 13:07
o-Terphenyl	107		113		70-130	%	08.14.2020 13:07

Analytical Method: BTEX by EPA 8021B

Seq Number: 3134566

Matrix: Solid

Prep Method: SW5035A

Date Prep: 08.14.2020

MB Sample Id: 7709470-1-BLK

LCS Sample Id: 7709470-1-BKS

LCSD Sample Id: 7709470-1-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	0.109	109	0.104	104	70-130	5	35	mg/kg	08.14.2020 07:57	
Toluene	<0.00200	0.100	0.116	116	0.111	111	70-130	4	35	mg/kg	08.14.2020 07:57	
Ethylbenzene	<0.00200	0.100	0.0974	97	0.0927	93	70-130	5	35	mg/kg	08.14.2020 07:57	
m,p-Xylenes	<0.00400	0.200	0.195	98	0.185	93	70-130	5	35	mg/kg	08.14.2020 07:57	
o-Xylene	<0.00200	0.100	0.0977	98	0.0928	93	70-130	5	35	mg/kg	08.14.2020 07:57	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		102		100		70-130	%	08.14.2020 07:57
4-Bromofluorobenzene	103		102		98		70-130	%	08.14.2020 07:57

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

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

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

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



Larson and Associates, Inc.
Chevron-Central Vacuum Unit #B9

Analytical Method: BTEX by EPA 8021B

Seq Number: 3134668

Matrix: Solid

Prep Method: SW5035A

Date Prep: 08.14.2020

MB Sample Id: 7709514-1-BLK

LCS Sample Id: 7709514-1-BKS

LCSD Sample Id: 7709514-1-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	0.101	101	0.102	102	70-130	1	35	mg/kg	08.14.2020 19:58	
Toluene	<0.00200	0.100	0.0968	97	0.0997	100	70-130	3	35	mg/kg	08.14.2020 19:58	
Ethylbenzene	<0.00200	0.100	0.0930	93	0.0941	94	70-130	1	35	mg/kg	08.14.2020 19:58	
m,p-Xylenes	<0.00400	0.200	0.187	94	0.190	95	70-130	2	35	mg/kg	08.14.2020 19:58	
o-Xylene	<0.00200	0.100	0.0937	94	0.0952	95	70-130	2	35	mg/kg	08.14.2020 19:58	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		99		98		70-130	%	08.14.2020 19:58
4-Bromofluorobenzene	104		100		99		70-130	%	08.14.2020 19:58

Analytical Method: BTEX by EPA 8021B

Seq Number: 3134566

Matrix: Soil

Prep Method: SW5035A

Date Prep: 08.14.2020

Parent Sample Id: 669779-003

MS Sample Id: 669779-003 S

MSD Sample Id: 669779-003 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	0.0973	98	0.0985	99	70-130	1	35	mg/kg	08.14.2020 08:38	
Toluene	0.00578	0.0992	0.106	101	0.109	103	70-130	3	35	mg/kg	08.14.2020 08:38	
Ethylbenzene	<0.00198	0.0992	0.0844	85	0.0871	87	70-130	3	35	mg/kg	08.14.2020 08:38	
m,p-Xylenes	<0.00397	0.198	0.168	85	0.173	87	70-130	3	35	mg/kg	08.14.2020 08:38	
o-Xylene	<0.00198	0.0992	0.0816	82	0.0857	86	70-130	5	35	mg/kg	08.14.2020 08:38	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		101		70-130	%	08.14.2020 08:38
4-Bromofluorobenzene	105		105		70-130	%	08.14.2020 08:38

Analytical Method: BTEX by EPA 8021B

Seq Number: 3134668

Matrix: Soil

Prep Method: SW5035A

Date Prep: 08.14.2020

Parent Sample Id: 669904-007

MS Sample Id: 669904-007 S

MSD Sample Id: 669904-007 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	0.0812	81	0.0830	83	70-130	2	35	mg/kg	08.14.2020 20:39	
Toluene	<0.00200	0.100	0.0745	75	0.0823	82	70-130	10	35	mg/kg	08.14.2020 20:39	
Ethylbenzene	<0.00200	0.100	0.0675	68	0.0608	61	70-130	10	35	mg/kg	08.14.2020 20:39	X
m,p-Xylenes	<0.00400	0.200	0.135	68	0.120	60	70-130	12	35	mg/kg	08.14.2020 20:39	X
o-Xylene	<0.00200	0.100	0.0663	66	0.0600	60	70-130	10	35	mg/kg	08.14.2020 20:39	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		100		70-130	%	08.14.2020 20:39
4-Bromofluorobenzene	102		102		70-130	%	08.14.2020 20:39

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

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

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

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

406009

Varson & Associates, Inc.
Environmental Consultants

Environmental Consultants

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

Data Reported to:

DATE: 8/13/2020 PAGE 1 OF 1
PO#: _____ LAB WORK ORDER#: _____
PROJECT LOCATION OR NAME: Chester - Central Vacuum Unit #1
LAI PROJECT #: 20-0107-17 COLLECTOR: 011

[illegible]

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: Larson and Associates, Inc.**Date/ Time Received:** 08.13.2020 08.31.00 AM**Work Order #:** 669904**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)?	2.1
#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: 08.13.2020

Checklist reviewed by:

Holly Taylor

Date: 08.17.2020

Certificate of Analysis Summary 670668

Larson and Associates, Inc., Midland, TX

Project Name: Central Vacuum Unit

Project Id: 20-0107-17

Contact: Mark Larson

Project Location:

Date Received in Lab: Fri 08.21.2020 08:34

Report Date: 08.25.2020 10:43

Project Manager: Holly Taylor

Analysis Requested	Lab Id:	670668-001	670668-002				
	Field Id:	SP-14 0.5'	SP-15 0.5'				
	Depth:						
	Matrix:	SOIL	SOIL				
	Sampled:	08.20.2020 11:20	08.20.2020 11:40				
BTEX by EPA 8021B	Extracted:	08.21.2020 12:45	08.21.2020 12:45				
	Analyzed:	08.21.2020 16:20	08.21.2020 16:41				
	Units/RL:	mg/kg RL	mg/kg RL				
Benzene		<0.00202 0.00202	<0.00201 0.00201				
Toluene		<0.00202 0.00202	<0.00201 0.00201				
Ethylbenzene		<0.00202 0.00202	<0.00201 0.00201				
m,p-Xylenes		<0.00404 0.00404	<0.00402 0.00402				
o-Xylene		<0.00202 0.00202	<0.00201 0.00201				
Total Xylenes		<0.00202 0.00202	<0.00201 0.00201				
Total BTEX		<0.00202 0.00202	<0.00201 0.00201				
Chloride by EPA 300	Extracted:	08.21.2020 16:45	08.21.2020 16:45				
	Analyzed:	08.22.2020 02:20	08.22.2020 02:36				
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		49.9 5.00	74.1 5.05				
TPH by SW8015 Mod	Extracted:	08.21.2020 12:00	08.21.2020 12:00				
	Analyzed:	08.21.2020 14:11	08.21.2020 15:16				
	Units/RL:	mg/kg RL	mg/kg RL				
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0	<50.0 50.0				
Diesel Range Organics (DRO)		<50.0 50.0	<50.0 50.0				
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<50.0 50.0				
Total TPH		<50.0 50.0	<50.0 50.0				

BRL - Below Reporting Limit

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



Analytical Report 670668

for

Larson and Associates, Inc.

Project Manager: Mark Larson

Central Vacuum Unit

20-0107-17

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)



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): **670668**
Central Vacuum Unit
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) 670668. 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. 670668 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Holly Taylor
Project Manager

A Small Business and Minority Company

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



Sample Cross Reference 670668

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SP-14 0.5'	S	08.20.2020 11:20		670668-001
SP-15 0.5'	S	08.20.2020 11:40		670668-002



CASE NARRATIVE

Client Name: Larson and Associates, Inc.

Project Name: Central Vacuum Unit

Project ID: 20-0107-17
Work Order Number(s): 670668

Report Date: 08.25.2020
Date Received: 08.21.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 670668

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit

Sample Id: **SP-14 0.5'**

Matrix: Soil

Date Received: 08.21.2020 08:34

Lab Sample Id: 670668-001

Date Collected: 08.20.2020 11:20

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 08.21.2020 16:45

Basis: Wet Weight

Seq Number: 3135320

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	49.9	5.00	mg/kg	08.22.2020 02:20		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 08.21.2020 12:00

Basis: Wet Weight

Seq Number: 3135345

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	08.21.2020 14:11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	08.21.2020 14:11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	08.21.2020 14:11	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	08.21.2020 14:11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	87	%	70-130	08.21.2020 14:11	
o-Terphenyl	84-15-1	95	%	70-130	08.21.2020 14:11	



Certificate of Analytical Results 670668

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit

Sample Id: **SP-14 0.5'**

Matrix: Soil

Date Received: 08.21.2020 08:34

Lab Sample Id: 670668-001

Date Collected: 08.20.2020 11:20

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 08.21.2020 12:45

Basis: Wet Weight

Seq Number: 3135301

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	08.21.2020 16:20	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	08.21.2020 16:20	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	08.21.2020 16:20	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	08.21.2020 16:20	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	08.21.2020 16:20	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	08.21.2020 16:20	U	1
Total BTEX		<0.00202	0.00202	mg/kg	08.21.2020 16:20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	101	%	70-130	08.21.2020 16:20	
1,4-Difluorobenzene	540-36-3	100	%	70-130	08.21.2020 16:20	



Certificate of Analytical Results 670668

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit

Sample Id: **SP-15 0.5'** Matrix: Soil Date Received: 08.21.2020 08:34
 Lab Sample Id: 670668-002 Date Collected: 08.20.2020 11:40
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 08.21.2020 16:45 Basis: Wet Weight
 Seq Number: 3135320

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	74.1	5.05	mg/kg	08.22.2020 02:36		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 08.21.2020 12:00 Basis: Wet Weight
 Seq Number: 3135345

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	08.21.2020 15:16	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	08.21.2020 15:16	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	08.21.2020 15:16	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	08.21.2020 15:16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	83	%	70-130	08.21.2020 15:16	
o-Terphenyl	84-15-1	91	%	70-130	08.21.2020 15:16	



Certificate of Analytical Results 670668

Larson and Associates, Inc., Midland, TX Central Vacuum Unit

Sample Id: **SP-15 0.5'**

Matrix: Soil

Date Received: 08.21.2020 08:34

Lab Sample Id: 670668-002

Date Collected: 08.20.2020 11:40

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 08.21.2020 12:45

Basis: Wet Weight

Seq Number: 3135301

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	08.21.2020 16:41	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	08.21.2020 16:41	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	08.21.2020 16:41	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	08.21.2020 16:41	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	08.21.2020 16:41	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	08.21.2020 16:41	U	1
Total BTEX		<0.00201	0.00201	mg/kg	08.21.2020 16:41	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	100	%	70-130	08.21.2020 16:41		
1,4-Difluorobenzene	540-36-3	100	%	70-130	08.21.2020 16:41		

Flagging Criteria

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

** Surrogate recovered outside laboratory control limit.

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

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

Larson and Associates, Inc.
Central Vacuum Unit
Analytical Method: Chloride by EPA 300

Seq Number: 3135320

MB Sample Id: 7709974-1-BLK

Matrix: Solid

LCS Sample Id: 7709974-1-BKS

Prep Method: E300P

Date Prep: 08.21.2020

LCSD Sample Id: 7709974-1-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	300	321	107	317	106	90-110	1	20	mg/kg	08.22.2020 02:09	

Analytical Method: Chloride by EPA 300

Seq Number: 3135320

Parent Sample Id: 670666-008

Matrix: Soil

MS Sample Id: 670666-008 S

Prep Method: E300P

Date Prep: 08.21.2020

MSD Sample Id: 670666-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	5710	2500	8160	98	8150	98	90-110	0	20	mg/kg	08.22.2020 03:39	

Analytical Method: Chloride by EPA 300

Seq Number: 3135320

Parent Sample Id: 670668-001

Matrix: Soil

MS Sample Id: 670668-001 S

Prep Method: E300P

Date Prep: 08.21.2020

MSD Sample Id: 670668-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	49.9	250	300	100	301	100	90-110	0	20	mg/kg	08.22.2020 02:25	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3135345

MB Sample Id: 7709953-1-BLK

Matrix: Solid

LCS Sample Id: 7709953-1-BKS

Prep Method: SW8015P

Date Prep: 08.21.2020

LCSD Sample Id: 7709953-1-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	883	88	876	88	70-130	1	20	mg/kg	08.21.2020 13:27	
Diesel Range Organics (DRO)	<50.0	1000	937	94	932	93	70-130	1	20	mg/kg	08.21.2020 13:27	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	87		88		88		70-130	%	08.21.2020 13:27
o-Terphenyl	102		93		95		70-130	%	08.21.2020 13:27

Analytical Method: TPH by SW8015 Mod

Seq Number: 3135345

Matrix: Solid

MB Sample Id: 7709953-1-BLK

Prep Method: SW8015P

Date Prep: 08.21.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	08.21.2020 13:05	

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

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

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

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



Larson and Associates, Inc.
Central Vacuum Unit

Analytical Method: TPH by SW8015 Mod

Seq Number: 3135345

Parent Sample Id: 670668-001

Matrix: Soil

MS Sample Id: 670668-001 S

Prep Method: SW8015P

Date Prep: 08.21.2020

MSD Sample Id: 670668-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<49.9	997	963	97	932	94	70-130	3	20	mg/kg	08.21.2020 14:33	
Diesel Range Organics (DRO)	<49.9	997	966	97	1000	100	70-130	3	20	mg/kg	08.21.2020 14:33	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	91		92		70-130	%	08.21.2020 14:33
o-Terphenyl	94		97		70-130	%	08.21.2020 14:33

Analytical Method: BTEX by EPA 8021B

Seq Number: 3135301

MB Sample Id: 7709982-1-BLK

Matrix: Solid

LCS Sample Id: 7709982-1-BKS

Prep Method: SW5035A

Date Prep: 08.21.2020

LCSD Sample Id: 7709982-1-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	0.106	106	0.110	110	70-130	4	35	mg/kg	08.21.2020 13:13	
Toluene	<0.00200	0.100	0.109	109	0.110	110	70-130	1	35	mg/kg	08.21.2020 13:13	
Ethylbenzene	<0.00200	0.100	0.101	101	0.105	105	70-130	4	35	mg/kg	08.21.2020 13:13	
m,p-Xylenes	<0.00400	0.200	0.202	101	0.210	105	70-130	4	35	mg/kg	08.21.2020 13:13	
o-Xylene	<0.00200	0.100	0.0984	98	0.103	103	70-130	5	35	mg/kg	08.21.2020 13:13	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	98		99		99		70-130	%	08.21.2020 13:13
4-Bromofluorobenzene	100		100		99		70-130	%	08.21.2020 13:13

Analytical Method: BTEX by EPA 8021B

Seq Number: 3135301

Parent Sample Id: 670668-001

Matrix: Soil

MS Sample Id: 670668-001 S

Prep Method: SW5035A

Date Prep: 08.21.2020

MSD Sample Id: 670668-001 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	0.100	0.107	107	0.101	100	70-130	6	35	mg/kg	08.21.2020 13:54	
Toluene	<0.00200	0.100	0.105	105	0.0941	93	70-130	11	35	mg/kg	08.21.2020 13:54	
Ethylbenzene	<0.00200	0.100	0.0929	93	0.0833	82	70-130	11	35	mg/kg	08.21.2020 13:54	
m,p-Xylenes	<0.00401	0.200	0.185	93	0.164	82	70-130	12	35	mg/kg	08.21.2020 13:54	
o-Xylene	<0.00200	0.100	0.0909	91	0.0812	80	70-130	11	35	mg/kg	08.21.2020 13:54	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		99		70-130	%	08.21.2020 13:54
4-Bromofluorobenzene	101		102		70-130	%	08.21.2020 13:54

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

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

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

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

№ 1330

CHAIN-OF-CUSTODY

Arson & Associates, Inc.
Environmental Consultants

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

Data Reported to:

DATE: 8/20/20 PAGE 1 OF 1

PO#: _____ LAB WORK ORDER#:

PROJECT LOCATION OR NAME: Central vacuum unitLAI PROJECT #: 20-0107-17 COLLECTOR: DS + TJ

TRRP report?

☐ Yes ☒ No

S=SOIL

W=WATER

A=AIR

P=PAINT

SL=SLUDGE

OT=OTHER

TIME ZONE:

Time zone/State:

MST

Field Sample I.D.

Lab #

Date

Time

Matrix

of Containers

HCl

HNO₃H₂SO₄ ☐ NaOH ☐

ICE

UNPRESSERVED

ANALYSES

BTEX ☒ MTBE ☐TPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐GASOLINE MOD 8015 ☒DIESEL - MOD 8015 ☒OIL - MOD 8015 ☒VOC 8280 ☒SVOC 8270 ☒8081 PESTICIDES ☒8082 PESTICIDES ☒TBLP - METALS (RCRA) ☒TCLP - METALS (RCRA) ☒TOTAL METALS (RCRA) ☒LEAD - TOTAL ☒RCI ☒TOX ☒TDS ☒TSS ☒pH ☒EXPLOSIVES ☒HEXAVALENT CHROMIUM ☒PECHLORATE ☒ANIONS ☒ALKALINITY ☒

FIELD NOTES

SP-14 0.5'
SP-15 0.5'

8/29/20 1120
8/29/20 1140

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TOTAL 2

RELINQUISHED BY: (Signature)

Mark J. Smith

DATE/TIME

8/20/20

RECEIVED BY: (Signature)

DS + TJ

TURN AROUND TIME

NORMAL ☒1 DAY ☐2 DAY ☐OTHER ☐

LABORATORY USE ONLY:

RECEIVING TEMP: 20.0THERM#: 100CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED

CARRIER BILL #

HAND DELIVERED

RELINQUISHED BY: (Signature)

Mark J. Smith

DATE/TIME

8/20/20

RECEIVED BY: (Signature)

DS + TJ

TURN AROUND TIME

NORMAL ☒1 DAY ☐2 DAY ☐OTHER ☐

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NORMAL ☒1 DAY ☐2 DAY ☐OTHER ☐

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NORMAL ☒1 DAY ☐2 DAY ☐OTHER ☐

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DS + TJ

TURN AROUND TIME

NORMAL ☒1 DAY ☐2 DAY ☐OTHER ☐

LABORATORY USE ONLY:

RECEIVING TEMP: 20.0THERM#: 100CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED

CARRIER BILL #

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Mark J. Smith

DATE/TIME

8/20/20

RECEIVED BY: (Signature)

DS + TJ

TURN AROUND TIME

NORMAL ☒1 DAY ☐2 DAY ☐OTHER ☐

LABORATORY USE ONLY:

RECEIVING TEMP: 20.0THERM#: 100CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED

CARRIER BILL #

HAND DELIVERED

RELINQUISHED BY: (Signature)

Mark J. Smith

DATE/TIME

8/20/20

RECEIVED BY: (Signature)

DS + TJ

TURN AROUND TIME

NORMAL ☒1 DAY ☐2 DAY ☐OTHER ☐

LABORATORY USE ONLY:

RECEIVING TEMP: 20.0THERM#: 100CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED

CARRIER BILL #

HAND DELIVERED

RELINQUISHED BY: (Signature)

Mark J. Smith

DATE/TIME

8/20/20

RECEIVED BY: (Signature)

DS + TJ

TURN AROUND TIME

NORMAL ☒1 DAY ☐2 DAY ☐OTHER ☐

LABORATORY USE ONLY:

RECEIVING TEMP: 20.0THERM#: 100CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED

CARRIER BILL #

HAND DELIVERED

RELINQUISHED BY: (Signature)

Mark J. Smith

DATE/TIME

8/20/20

RECEIVED BY: (Signature)

DS + TJ

TURN AROUND TIME

NORMAL ☒1 DAY ☐2 DAY ☐OTHER ☐

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RECEIVING TEMP: 20.0THERM#: 100CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED

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HAND DELIVERED

RELINQUISHED BY: (Signature)

Mark J. Smith

DATE/TIME

8/20/20

RECEIVED BY: (Signature)

DS + TJ

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: Larson and Associates, Inc.**Date/ Time Received:** 08.21.2020 08.34.00 AM**Work Order #:** 670668**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)?	2.2
#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: 08.21.2020

Checklist reviewed by:

Holly Taylor

Date: 08.24.2020

Certificate of Analysis Summary 671426

Larson and Associates, Inc., Midland, TX

Project Name: Central Vaccum Unit #139

Project Id: 20-0107-17

Contact: Mark Larson

Project Location:

Date Received in Lab: Mon 08.31.2020 16:20

Report Date: 09.16.2020 09:16

Project Manager: Holly Taylor

<i>Analysis Requested</i>	<i>Lab Id:</i>	671426-001	671426-002	671426-003	671426-004	671426-005	671426-006
	<i>Field Id:</i>	SP-2 1'	SP-2 1.5'	SP-6 1'	SP-6 1.5'	SP-7 1'	SP-7 1.5'
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	08.27.2020 10:00	08.27.2020 10:10	08.27.2020 11:00	08.27.2020 11:10	08.27.2020 10:45	08.27.2020 10:50
BTEX by EPA 8021B	<i>Extracted:</i>	09.01.2020 08:30	09.01.2020 08:30	09.01.2020 08:30	09.01.2020 08:40	09.01.2020 08:30	09.01.2020 08:30
	<i>Analyzed:</i>	09.01.2020 19:21	09.01.2020 11:34	09.01.2020 19:41	09.01.2020 11:56	09.01.2020 20:02	09.01.2020 20:22
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	<0.00199 0.00199
Toluene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	<0.00199 0.00199
Ethylbenzene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	<0.00199 0.00199
m,p-Xylenes		<0.00401 0.00401	<0.00399 0.00399	<0.00399 0.00399	<0.00398 0.00398	<0.00398 0.00398	<0.00398 0.00398
o-Xylene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	<0.00199 0.00199
Total Xylenes		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	<0.00199 0.00199
Total BTEX		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	<0.00199 0.00199
Chloride by EPA 300	<i>Extracted:</i>	09.01.2020 15:30	09.01.2020 15:30	09.01.2020 15:30	09.01.2020 15:30	09.02.2020 11:45	09.02.2020 11:45
	<i>Analyzed:</i>	09.02.2020 00:15	09.02.2020 00:20	09.02.2020 00:25	09.02.2020 00:30	09.02.2020 12:46	09.02.2020 13:02
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		11500 99.8	5400 25.2	2930 24.9	4250 49.5	6510 49.6	3820 25.2
TPH by SW8015 Mod	<i>Extracted:</i>	09.02.2020 17:00	09.02.2020 17:00	09.02.2020 17:00	09.02.2020 17:00	09.02.2020 17:00	09.02.2020 17:00
	<i>Analyzed:</i>	09.02.2020 23:18	09.03.2020 00:26	09.03.2020 00:49	09.03.2020 01:12	09.03.2020 01:35	09.03.2020 01:57
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<49.9 49.9	<49.9 49.9	<49.9 49.9	<49.8 49.8	<50.0 50.0	<49.9 49.9
Diesel Range Organics (DRO)		<49.9 49.9	<49.9 49.9	<49.9 49.9	<49.8 49.8	<50.0 50.0	<49.9 49.9
Motor Oil Range Hydrocarbons (MRO)		<49.9 49.9	<49.9 49.9	<49.9 49.9	<49.8 49.8	<50.0 50.0	<49.9 49.9
Total TPH		<49.9 49.9	<49.9 49.9	<49.9 49.9	<49.8 49.8	<50.0 50.0	<49.9 49.9

BRL - Below Reporting Limit



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

Certificate of Analysis Summary 671426



Larson and Associates, Inc., Midland, TX

Project Name: Central Vaccum Unit #139

Project Id: 20-0107-17

Date Received in Lab: Mon 08.31.2020 16:20

Contact: Mark Larson

Report Date: 09.16.2020 09:16

Project Location:

Project Manager: Holly Taylor

<i>Analysis Requested</i>	<i>Lab Id:</i>	671426-007	671426-008	671426-009	671426-010	671426-011	671426-012
	<i>Field Id:</i>	SP-8 1'	SP-8 1.5'	SP-9 1.5'	SP-9 1'	SP-10 1'	SP-10 1.5'
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	08.27.2020 10:35	08.27.2020 10:45	08.27.2020 10:45	08.27.2020 10:30	08.27.2020 10:15	08.27.2020 10:18
BTEX by EPA 8021B	<i>Extracted:</i>	09.01.2020 08:40	09.01.2020 08:40	09.01.2020 08:40	09.01.2020 08:40	09.01.2020 08:40	09.01.2020 08:40
	<i>Analyzed:</i>	09.01.2020 18:43	09.01.2020 19:04	09.01.2020 19:24	09.01.2020 19:45	09.01.2020 20:06	09.01.2020 20:27
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00198 0.00198	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201
Toluene		<0.00198 0.00198	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201
Ethylbenzene		<0.00198 0.00198	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201
m,p-Xylenes		<0.00396 0.00396	<0.00398 0.00398	<0.00397 0.00397	<0.00399 0.00399	<0.00401 0.00401	<0.00402 0.00402
o-Xylene		<0.00198 0.00198	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201
Total Xylenes		<0.00198 0.00198	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201
Total BTEX		<0.00198 0.00198	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201
Chloride by EPA 300	<i>Extracted:</i>	09.02.2020 11:45	09.02.2020 11:45	09.02.2020 11:45	09.02.2020 11:45	09.02.2020 11:45	09.02.2020 11:45
	<i>Analyzed:</i>	09.02.2020 13:07	09.02.2020 13:13	09.02.2020 13:18	09.02.2020 13:34	09.02.2020 13:39	09.02.2020 13:44
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		8690 49.8	3230 25.0	6210 50.5	5180 49.7	3130 24.8	2090 24.8
TPH by SW8015 Mod	<i>Extracted:</i>	09.02.2020 17:00	09.02.2020 17:00	09.02.2020 17:00	09.02.2020 17:00	09.02.2020 17:00	09.02.2020 17:00
	<i>Analyzed:</i>	09.03.2020 02:20	09.03.2020 02:43	09.03.2020 03:06	09.03.2020 03:29	09.03.2020 04:14	09.03.2020 04:37
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0	<49.9 49.9	<50.0 50.0	<50.0 50.0	<49.9 49.9	<49.8 49.8
Diesel Range Organics (DRO)		52.2 50.0	161 49.9	118 50.0	<50.0 50.0	<49.9 49.9	<49.8 49.8
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<49.9 49.9	<50.0 50.0	<50.0 50.0	<49.9 49.9	<49.8 49.8
Total TPH		52.2 50.0	161 49.9	118 50.0	<50.0 50.0	<49.9 49.9	<49.8 49.8

BRL - Below Reporting Limit

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

Certificate of Analysis Summary 671426

Larson and Associates, Inc., Midland, TX

Project Name: Central Vaccum Unit #139

Project Id: 20-0107-17

Date Received in Lab: Mon 08.31.2020 16:20

Contact: Mark Larson

Report Date: 09.16.2020 09:16

Project Location:

Project Manager: Holly Taylor

<i>Analysis Requested</i>	<i>Lab Id:</i>	671426-013	671426-014	671426-015	671426-016	671426-017	671426-018
	<i>Field Id:</i>	SP-1 1'	SP-1 1.5'	SP-3 1'	SP-3 1.5'	SP-4 1'	SP-4 1.5'
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	08.26.2020 12:45	08.26.2020 12:50	08.26.2020 14:43	08.26.2020 14:45	08.26.2020 13:10	08.26.2020 13:20
BTEX by EPA 8021B	<i>Extracted:</i>	09.01.2020 08:40	09.01.2020 08:40	09.01.2020 08:40	09.01.2020 16:00	09.01.2020 16:00	09.01.2020 16:00
	<i>Analyzed:</i>	09.01.2020 20:47	09.01.2020 21:08	09.01.2020 21:29	09.01.2020 23:40	09.02.2020 00:00	09.02.2020 00:21
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00201 0.00201
Toluene		<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00201 0.00201
Ethylbenzene		<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00201 0.00201
m,p-Xylenes		<0.00399 0.00399	<0.00398 0.00398	<0.00398 0.00398	<0.00396 0.00396	<0.00399 0.00399	<0.00402 0.00402
o-Xylene		<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00201 0.00201
Total Xylenes		<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00201 0.00201
Total BTEX		<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00201 0.00201
Chloride by EPA 300	<i>Extracted:</i>	09.02.2020 11:45	09.02.2020 11:45	09.02.2020 11:45	09.02.2020 11:45	09.02.2020 11:45	09.02.2020 11:45
	<i>Analyzed:</i>	09.02.2020 13:49	09.02.2020 13:55	09.02.2020 14:00	09.02.2020 14:16	09.02.2020 14:21	09.02.2020 14:37
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		58.5 5.02	53.6 4.98	9110 50.0	6210 49.6	16100 99.0	1680 25.2
TPH by SW8015 Mod	<i>Extracted:</i>	09.02.2020 17:00	09.02.2020 17:00	09.02.2020 17:00	09.02.2020 17:00	09.02.2020 17:00	09.02.2020 17:00
	<i>Analyzed:</i>	09.03.2020 05:00	09.03.2020 05:23	09.03.2020 05:45	09.03.2020 06:08	09.03.2020 06:31	09.03.2020 06:53
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.0 50.0	<50.0 50.0	<49.9 49.9
Diesel Range Organics (DRO)		<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.0 50.0	<50.0 50.0	<49.9 49.9
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.0 50.0	<50.0 50.0	<49.9 49.9
Total TPH		<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.0 50.0	<50.0 50.0	<49.9 49.9

BRL - Below Reporting Limit



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

Certificate of Analysis Summary 671426



Larson and Associates, Inc., Midland, TX

Project Name: Central Vaccum Unit #139

Project Id: 20-0107-17

Date Received in Lab: Mon 08.31.2020 16:20

Contact: Mark Larson

Report Date: 09.16.2020 09:16

Project Location:

Project Manager: Holly Taylor

<i>Analysis Requested</i>	<i>Lab Id:</i>	671426-019	671426-020	671426-021	671426-022		
	<i>Field Id:</i>	SP-5 1'	SP- 5 1.5'	SP-13 1'	SP-13 1.5'		
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL		
	<i>Sampled:</i>	08.26.2020 14:28	08.26.2020 14:30	08.26.2020 14:08	08.26.2020 14:10		
BTEX by EPA 8021B	<i>Extracted:</i>	09.02.2020 08:45	09.02.2020 08:45	09.02.2020 08:45	09.02.2020 08:45		
	<i>Analyzed:</i>	09.02.2020 13:30	09.02.2020 11:46	09.02.2020 13:50	09.02.2020 14:11		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201	<0.00201 0.00201		
Toluene		<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201	<0.00201 0.00201		
Ethylbenzene		<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201	<0.00201 0.00201		
m,p-Xylenes		<0.00399 0.00399	<0.00402 0.00402	<0.00402 0.00402	<0.00402 0.00402		
o-Xylene		<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201	<0.00201 0.00201		
Total Xylenes		<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201	<0.00201 0.00201		
Total BTEX		<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201	<0.00201 0.00201		
Chloride by EPA 300	<i>Extracted:</i>	09.02.2020 11:45	09.02.2020 11:45	09.02.2020 11:45	09.02.2020 11:45		
	<i>Analyzed:</i>	09.02.2020 14:42	09.02.2020 14:47	09.02.2020 14:52	09.02.2020 14:58		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		11600 99.6	2120 25.0	27.5 4.95	20.9 4.98		
TPH by SW8015 Mod	<i>Extracted:</i>	09.02.2020 17:00	09.02.2020 17:00	09.02.2020 17:00	09.02.2020 17:00		
	<i>Analyzed:</i>	09.03.2020 07:16	09.03.2020 08:01	09.03.2020 05:45	09.03.2020 06:08		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0	<49.9 49.9	<49.8 49.8	<50.0 50.0		
Diesel Range Organics (DRO)		<50.0 50.0	<49.9 49.9	<49.8 49.8	<50.0 50.0		
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<49.9 49.9	<49.8 49.8	<50.0 50.0		
Total TPH		<50.0 50.0	<49.9 49.9	<49.8 49.8	<50.0 50.0		

BRL - Below Reporting Limit

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

Analytical Report 671426

for

Larson and Associates, Inc.

Project Manager: Mark Larson

Central Vacuum Unit #139

20-0107-17

09.16.2020

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 (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)



09.16.2020

Project Manager: **Mark Larson**

Larson and Associates, Inc.

P. O. Box 50685

Midland, TX 79710

Reference: Eurofins Xenco, LLC Report No(s): **671426**

Central Vaccum Unit #139

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) 671426. 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. 671426 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Holly Taylor
Project Manager

A Small Business and Minority Company

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Sample Cross Reference 671426

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit #139

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SP-2 1'	S	08.27.2020 10:00		671426-001
SP-2 1.5'	S	08.27.2020 10:10		671426-002
SP-6 1'	S	08.27.2020 11:00		671426-003
SP-6 1.5'	S	08.27.2020 11:10		671426-004
SP-7 1'	S	08.27.2020 10:45		671426-005
SP-7 1.5'	S	08.27.2020 10:50		671426-006
SP-8 1'	S	08.27.2020 10:35		671426-007
SP-8 1.5'	S	08.27.2020 10:45		671426-008
SP-9 1.5'	S	08.27.2020 10:45		671426-009
SP-9 1'	S	08.27.2020 10:30		671426-010
SP-10 1'	S	08.27.2020 10:15		671426-011
SP-10 1.5'	S	08.27.2020 10:18		671426-012
SP-1 1'	S	08.26.2020 12:45		671426-013
SP-1 1.5'	S	08.26.2020 12:50		671426-014
SP-3 1'	S	08.26.2020 14:43		671426-015
SP-3 1.5'	S	08.26.2020 14:45		671426-016
SP-4 1'	S	08.26.2020 13:10		671426-017
SP-4 1.5'	S	08.26.2020 13:20		671426-018
SP-5 1'	S	08.26.2020 14:28		671426-019
SP- 5 1.5'	S	08.26.2020 14:30		671426-020
SP-13 1'	S	08.26.2020 14:08		671426-021
SP-13 1.5'	S	08.26.2020 14:10		671426-022

**CASE NARRATIVE****Client Name: Larson and Associates, Inc.****Project Name: Central Vacuum Unit #139**Project ID: 20-0107-17
Work Order Number(s): 671426Report Date: 09.16.2020
Date Received: 08.31.2020**Sample receipt non conformances and comments:**

9/16/2020 1.001 Revised to change project number per client. HT

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3136155 BTEX by EPA 8021B

Lab Sample ID 671426-017 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). 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: 671426-016, -017, -018.

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

Batch: LBA-3136263 BTEX by EPA 8021B

Lab Sample ID 671426-020 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). o-Xylene recovered below QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 671426-019, -020, -021, -022.

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



Certificate of Analytical Results 671426

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit #139

Sample Id: **SP-2 1'**
Lab Sample Id: 671426-001

Matrix: Soil
Date Collected: 08.27.2020 10:00

Date Received: 08.31.2020 16:20

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 09.01.2020 15:30

Basis: Wet Weight

Seq Number: 3136163

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	11500	99.8	mg/kg	09.02.2020 00:15		20

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 09.02.2020 17:00

Basis: Wet Weight

Seq Number: 3136326

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	09.02.2020 23:18	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	09.02.2020 23:18	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	09.02.2020 23:18	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	09.02.2020 23:18	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-130	09.02.2020 23:18	
o-Terphenyl	84-15-1	105	%	70-130	09.02.2020 23:18	



Certificate of Analytical Results 671426

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit #139

Sample Id: **SP-2 1'**
Lab Sample Id: 671426-001

Matrix: Soil
Date Collected: 08.27.2020 10:00

Date Received: 08.31.2020 16:20

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 09.01.2020 08:30

Basis: Wet Weight

Seq Number: 3136119

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.01.2020 19:21	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.01.2020 19:21	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.01.2020 19:21	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	09.01.2020 19:21	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.01.2020 19:21	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.01.2020 19:21	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.01.2020 19:21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	123	%	70-130	09.01.2020 19:21	
1,4-Difluorobenzene	540-36-3	102	%	70-130	09.01.2020 19:21	



Certificate of Analytical Results 671426

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit #139

Sample Id: **SP-2 1.5'**
Lab Sample Id: 671426-002

Matrix: Soil
Date Collected: 08.27.2020 10:10

Date Received: 08.31.2020 16:20

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 09.01.2020 15:30

Basis: Wet Weight

Seq Number: 3136163

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5400	25.2	mg/kg	09.02.2020 00:20		5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 09.02.2020 17:00

Basis: Wet Weight

Seq Number: 3136326

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	09.03.2020 00:26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	09.03.2020 00:26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	09.03.2020 00:26	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	09.03.2020 00:26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-130	09.03.2020 00:26	
o-Terphenyl	84-15-1	104	%	70-130	09.03.2020 00:26	



Certificate of Analytical Results 671426

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit #139

Sample Id: **SP-2 1.5'**
Lab Sample Id: 671426-002

Matrix: Soil
Date Collected: 08.27.2020 10:10

Date Received: 08.31.2020 16:20

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 09.01.2020 08:30

Basis: Wet Weight

Seq Number: 3136119

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.01.2020 11:34	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.01.2020 11:34	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.01.2020 11:34	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	09.01.2020 11:34	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.01.2020 11:34	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.01.2020 11:34	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.01.2020 11:34	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	09.01.2020 11:34		
4-Bromofluorobenzene	460-00-4	98	%	70-130	09.01.2020 11:34		



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Larson and Associates, Inc., Midland, TX

Central Vacuum Unit #139

Sample Id: **SP-6 1'** Matrix: Soil Date Received: 08.31.2020 16:20
 Lab Sample Id: 671426-003 Date Collected: 08.27.2020 11:00
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 09.01.2020 15:30 Basis: Wet Weight
 Seq Number: 3136163

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2930	24.9	mg/kg	09.02.2020 00:25		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 09.02.2020 17:00 Basis: Wet Weight
 Seq Number: 3136326

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	09.03.2020 00:49	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	09.03.2020 00:49	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	09.03.2020 00:49	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	09.03.2020 00:49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-130	09.03.2020 00:49	
o-Terphenyl	84-15-1	107	%	70-130	09.03.2020 00:49	



Certificate of Analytical Results 671426

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit #139

Sample Id: **SP-6 1'**
Lab Sample Id: 671426-003

Matrix: Soil
Date Collected: 08.27.2020 11:00

Date Received: 08.31.2020 16:20

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 09.01.2020 08:30

Basis: Wet Weight

Seq Number: 3136119

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.01.2020 19:41	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.01.2020 19:41	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.01.2020 19:41	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	09.01.2020 19:41	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.01.2020 19:41	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.01.2020 19:41	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.01.2020 19:41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	101	%	70-130	09.01.2020 19:41	
4-Bromofluorobenzene	460-00-4	128	%	70-130	09.01.2020 19:41	



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Larson and Associates, Inc., Midland, TX

Central Vacuum Unit #139

Sample Id: **SP-6 1.5'**
Lab Sample Id: 671426-004

Matrix: Soil
Date Collected: 08.27.2020 11:10

Date Received: 08.31.2020 16:20

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 09.01.2020 15:30

Basis: Wet Weight

Seq Number: 3136163

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4250	49.5	mg/kg	09.02.2020 00:30		10

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 09.02.2020 17:00

Basis: Wet Weight

Seq Number: 3136326

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	09.03.2020 01:12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	09.03.2020 01:12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	09.03.2020 01:12	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	09.03.2020 01:12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-130	09.03.2020 01:12	
o-Terphenyl	84-15-1	106	%	70-130	09.03.2020 01:12	



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Larson and Associates, Inc., Midland, TX

Central Vacuum Unit #139

Sample Id: **SP-6 1.5'**
Lab Sample Id: 671426-004

Matrix: Soil
Date Collected: 08.27.2020 11:10

Date Received: 08.31.2020 16:20

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 09.01.2020 08:40

Basis: Wet Weight

Seq Number: 3136120

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.01.2020 11:56	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.01.2020 11:56	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.01.2020 11:56	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.01.2020 11:56	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.01.2020 11:56	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.01.2020 11:56	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.01.2020 11:56	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	94	%	70-130	09.01.2020 11:56		
1,4-Difluorobenzene	540-36-3	94	%	70-130	09.01.2020 11:56		



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Larson and Associates, Inc., Midland, TX

Central Vacuum Unit #139

Sample Id: **SP-7 1'**
Lab Sample Id: 671426-005

Matrix: Soil
Date Collected: 08.27.2020 10:45

Date Received: 08.31.2020 16:20

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 09.02.2020 11:45

Basis: Wet Weight

Seq Number: 3136249

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6510	49.6	mg/kg	09.02.2020 12:46		10

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 09.02.2020 17:00

Basis: Wet Weight

Seq Number: 3136326

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	09.03.2020 01:35	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	09.03.2020 01:35	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	09.03.2020 01:35	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	09.03.2020 01:35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-130	09.03.2020 01:35	
o-Terphenyl	84-15-1	102	%	70-130	09.03.2020 01:35	



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Larson and Associates, Inc., Midland, TX

Central Vacuum Unit #139

Sample Id: **SP-7 1'**
Lab Sample Id: 671426-005

Matrix: Soil
Date Collected: 08.27.2020 10:45

Date Received: 08.31.2020 16:20

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 09.01.2020 08:30

Basis: Wet Weight

Seq Number: 3136119

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.01.2020 20:02	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.01.2020 20:02	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.01.2020 20:02	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.01.2020 20:02	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.01.2020 20:02	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.01.2020 20:02	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.01.2020 20:02	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	09.01.2020 20:02		
4-Bromofluorobenzene	460-00-4	127	%	70-130	09.01.2020 20:02		



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Larson and Associates, Inc., Midland, TX

Central Vacuum Unit #139

Sample Id: **SP-7 1.5'**
Lab Sample Id: 671426-006

Matrix: Soil
Date Collected: 08.27.2020 10:50

Date Received: 08.31.2020 16:20

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 09.02.2020 11:45

Basis: Wet Weight

Seq Number: 3136249

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3820	25.2	mg/kg	09.02.2020 13:02		5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 09.02.2020 17:00

Basis: Wet Weight

Seq Number: 3136326

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	09.03.2020 01:57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	09.03.2020 01:57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	09.03.2020 01:57	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	09.03.2020 01:57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-130	09.03.2020 01:57	
o-Terphenyl	84-15-1	107	%	70-130	09.03.2020 01:57	



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Larson and Associates, Inc., Midland, TX

Central Vacuum Unit #139

Sample Id: **SP-7 1.5'**
Lab Sample Id: 671426-006

Matrix: Soil
Date Collected: 08.27.2020 10:50

Date Received: 08.31.2020 16:20

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 09.01.2020 08:30

Basis: Wet Weight

Seq Number: 3136119

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.01.2020 20:22	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.01.2020 20:22	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.01.2020 20:22	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.01.2020 20:22	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.01.2020 20:22	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.01.2020 20:22	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.01.2020 20:22	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	121	%	70-130	09.01.2020 20:22		
1,4-Difluorobenzene	540-36-3	101	%	70-130	09.01.2020 20:22		



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Larson and Associates, Inc., Midland, TX

Central Vacuum Unit #139

Sample Id: **SP-8 1'**
Lab Sample Id: 671426-007

Matrix: Soil
Date Collected: 08.27.2020 10:35

Date Received: 08.31.2020 16:20

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3136249

Prep Method: E300P

% Moisture:

Date Prep: 09.02.2020 11:45

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8690	49.8	mg/kg	09.02.2020 13:07		10

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3136326

Prep Method: SW8015P

% Moisture:

Date Prep: 09.02.2020 17:00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	09.03.2020 02:20	U	1
Diesel Range Organics (DRO)	C10C28DRO	52.2	50.0	mg/kg	09.03.2020 02:20		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	09.03.2020 02:20	U	1
Total TPH	PHC635	52.2	50.0	mg/kg	09.03.2020 02:20		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-130	09.03.2020 02:20	
o-Terphenyl	84-15-1	105	%	70-130	09.03.2020 02:20	



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Larson and Associates, Inc., Midland, TX

Central Vacuum Unit #139

Sample Id: **SP-8 1'**
Lab Sample Id: 671426-007

Matrix: Soil
Date Collected: 08.27.2020 10:35

Date Received: 08.31.2020 16:20

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 09.01.2020 08:40

Basis: Wet Weight

Seq Number: 3136120

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	09.01.2020 18:43	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	09.01.2020 18:43	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	09.01.2020 18:43	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	09.01.2020 18:43	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	09.01.2020 18:43	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	09.01.2020 18:43	U	1
Total BTEX		<0.00198	0.00198	mg/kg	09.01.2020 18:43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	98	%	70-130	09.01.2020 18:43	
1,4-Difluorobenzene	540-36-3	100	%	70-130	09.01.2020 18:43	



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Larson and Associates, Inc., Midland, TX

Central Vacuum Unit #139

Sample Id: **SP-8 1.5'**
Lab Sample Id: 671426-008

Matrix: Soil
Date Collected: 08.27.2020 10:45

Date Received: 08.31.2020 16:20

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3136249

Prep Method: E300P

% Moisture:

Date Prep: 09.02.2020 11:45

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3230	25.0	mg/kg	09.02.2020 13:13		5

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3136326

Prep Method: SW8015P

% Moisture:

Date Prep: 09.02.2020 17:00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	09.03.2020 02:43	U	1
Diesel Range Organics (DRO)	C10C28DRO	161	49.9	mg/kg	09.03.2020 02:43		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	09.03.2020 02:43	U	1
Total TPH	PHC635	161	49.9	mg/kg	09.03.2020 02:43		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	120	%	70-130	09.03.2020 02:43	
o-Terphenyl	84-15-1	119	%	70-130	09.03.2020 02:43	



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Larson and Associates, Inc., Midland, TX

Central Vacuum Unit #139

Sample Id: **SP-8 1.5'**
Lab Sample Id: 671426-008

Matrix: Soil
Date Collected: 08.27.2020 10:45

Date Received: 08.31.2020 16:20

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 09.01.2020 08:40

Basis: Wet Weight

Seq Number: 3136120

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.01.2020 19:04	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.01.2020 19:04	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.01.2020 19:04	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.01.2020 19:04	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.01.2020 19:04	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.01.2020 19:04	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.01.2020 19:04	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	09.01.2020 19:04		
4-Bromofluorobenzene	460-00-4	94	%	70-130	09.01.2020 19:04		



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Larson and Associates, Inc., Midland, TX

Central Vacuum Unit #139

Sample Id: **SP-9 1.5'**
Lab Sample Id: 671426-009

Matrix: Soil
Date Collected: 08.27.2020 10:45

Date Received: 08.31.2020 16:20

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3136249

Prep Method: E300P

% Moisture:

Date Prep: 09.02.2020 11:45

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6210	50.5	mg/kg	09.02.2020 13:18		10

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3136326

Prep Method: SW8015P

% Moisture:

Date Prep: 09.02.2020 17:00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	09.03.2020 03:06	U	1
Diesel Range Organics (DRO)	C10C28DRO	118	50.0	mg/kg	09.03.2020 03:06		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	09.03.2020 03:06	U	1
Total TPH	PHC635	118	50.0	mg/kg	09.03.2020 03:06		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-130	09.03.2020 03:06	
o-Terphenyl	84-15-1	112	%	70-130	09.03.2020 03:06	



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Larson and Associates, Inc., Midland, TX

Central Vacuum Unit #139

Sample Id: **SP-9 1.5'**
Lab Sample Id: 671426-009

Matrix: Soil
Date Collected: 08.27.2020 10:45

Date Received: 08.31.2020 16:20

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 09.01.2020 08:40

Basis: Wet Weight

Seq Number: 3136120

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	09.01.2020 19:24	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	09.01.2020 19:24	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	09.01.2020 19:24	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	09.01.2020 19:24	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	09.01.2020 19:24	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	09.01.2020 19:24	U	1
Total BTEX		<0.00198	0.00198	mg/kg	09.01.2020 19:24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	103	%	70-130	09.01.2020 19:24	
4-Bromofluorobenzene	460-00-4	96	%	70-130	09.01.2020 19:24	



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Larson and Associates, Inc., Midland, TX

Central Vacuum Unit #139

Sample Id: **SP-9 1'**
Lab Sample Id: 671426-010

Matrix: Soil
Date Collected: 08.27.2020 10:30

Date Received: 08.31.2020 16:20

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 09.02.2020 11:45

Basis: Wet Weight

Seq Number: 3136249

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5180	49.7	mg/kg	09.02.2020 13:34		10

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 09.02.2020 17:00

Basis: Wet Weight

Seq Number: 3136326

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	09.03.2020 03:29	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	09.03.2020 03:29	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	09.03.2020 03:29	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	09.03.2020 03:29	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-130	09.03.2020 03:29	
o-Terphenyl	84-15-1	113	%	70-130	09.03.2020 03:29	



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Larson and Associates, Inc., Midland, TX

Central Vacuum Unit #139

Sample Id: **SP-9 1'**
Lab Sample Id: 671426-010

Matrix: Soil
Date Collected: 08.27.2020 10:30

Date Received: 08.31.2020 16:20

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 09.01.2020 08:40

Basis: Wet Weight

Seq Number: 3136120

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.01.2020 19:45	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.01.2020 19:45	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.01.2020 19:45	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	09.01.2020 19:45	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.01.2020 19:45	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.01.2020 19:45	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.01.2020 19:45	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	93	%	70-130	09.01.2020 19:45		
1,4-Difluorobenzene	540-36-3	100	%	70-130	09.01.2020 19:45		



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Larson and Associates, Inc., Midland, TX

Central Vacuum Unit #139

Sample Id: **SP-10 1'**
Lab Sample Id: 671426-011

Matrix: Soil
Date Collected: 08.27.2020 10:15

Date Received: 08.31.2020 16:20

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 09.02.2020 11:45

Basis: Wet Weight

Seq Number: 3136249

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3130	24.8	mg/kg	09.02.2020 13:39		5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 09.02.2020 17:00

Basis: Wet Weight

Seq Number: 3136326

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	09.03.2020 04:14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	09.03.2020 04:14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	09.03.2020 04:14	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	09.03.2020 04:14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-130	09.03.2020 04:14	
o-Terphenyl	84-15-1	105	%	70-130	09.03.2020 04:14	



Certificate of Analytical Results 671426

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit #139

Sample Id: **SP-10 1'**
Lab Sample Id: 671426-011

Matrix: Soil
Date Collected: 08.27.2020 10:15

Date Received: 08.31.2020 16:20

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 09.01.2020 08:40

Basis: Wet Weight

Seq Number: 3136120

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.01.2020 20:06	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.01.2020 20:06	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.01.2020 20:06	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	09.01.2020 20:06	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.01.2020 20:06	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.01.2020 20:06	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.01.2020 20:06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	94	%	70-130	09.01.2020 20:06	
1,4-Difluorobenzene	540-36-3	103	%	70-130	09.01.2020 20:06	



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Larson and Associates, Inc., Midland, TX

Central Vacuum Unit #139

Sample Id: **SP-10 1.5'**

Matrix: Soil

Date Received: 08.31.2020 16:20

Lab Sample Id: 671426-012

Date Collected: 08.27.2020 10:18

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 09.02.2020 11:45

Basis: Wet Weight

Seq Number: 3136249

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2090	24.8	mg/kg	09.02.2020 13:44		5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 09.02.2020 17:00

Basis: Wet Weight

Seq Number: 3136326

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	09.03.2020 04:37	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	09.03.2020 04:37	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	09.03.2020 04:37	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	09.03.2020 04:37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	116	%	70-130	09.03.2020 04:37	
o-Terphenyl	84-15-1	115	%	70-130	09.03.2020 04:37	



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Larson and Associates, Inc., Midland, TX

Central Vacuum Unit #139

Sample Id: **SP-10 1.5'**

Matrix: Soil

Date Received: 08.31.2020 16:20

Lab Sample Id: 671426-012

Date Collected: 08.27.2020 10:18

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 09.01.2020 08:40

Basis: Wet Weight

Seq Number: 3136120

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	09.01.2020 20:27	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	09.01.2020 20:27	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	09.01.2020 20:27	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	09.01.2020 20:27	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	09.01.2020 20:27	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	09.01.2020 20:27	U	1
Total BTEX		<0.00201	0.00201	mg/kg	09.01.2020 20:27	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	102	%	70-130	09.01.2020 20:27		
1,4-Difluorobenzene	540-36-3	106	%	70-130	09.01.2020 20:27		



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Larson and Associates, Inc., Midland, TX

Central Vacuum Unit #139

Sample Id: **SP-1 1'**
Lab Sample Id: 671426-013

Matrix: Soil
Date Collected: 08.26.2020 12:45

Date Received: 08.31.2020 16:20

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 09.02.2020 11:45

Basis: Wet Weight

Seq Number: 3136249

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	58.5	5.02	mg/kg	09.02.2020 13:49		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 09.02.2020 17:00

Basis: Wet Weight

Seq Number: 3136326

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	09.03.2020 05:00	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	09.03.2020 05:00	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	09.03.2020 05:00	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	09.03.2020 05:00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-130	09.03.2020 05:00	
o-Terphenyl	84-15-1	103	%	70-130	09.03.2020 05:00	



Certificate of Analytical Results 671426

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit #139

Sample Id: **SP-1 1'**
Lab Sample Id: 671426-013

Matrix: Soil
Date Collected: 08.26.2020 12:45

Date Received: 08.31.2020 16:20

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 09.01.2020 08:40

Basis: Wet Weight

Seq Number: 3136120

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.01.2020 20:47	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.01.2020 20:47	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.01.2020 20:47	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	09.01.2020 20:47	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.01.2020 20:47	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.01.2020 20:47	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.01.2020 20:47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	100	%	70-130	09.01.2020 20:47	
1,4-Difluorobenzene	540-36-3	105	%	70-130	09.01.2020 20:47	



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Larson and Associates, Inc., Midland, TX

Central Vacuum Unit #139

Sample Id: **SP-1 1.5'**
Lab Sample Id: 671426-014

Matrix: Soil
Date Collected: 08.26.2020 12:50

Date Received: 08.31.2020 16:20

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 09.02.2020 11:45

Basis: Wet Weight

Seq Number: 3136249

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	53.6	4.98	mg/kg	09.02.2020 13:55		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 09.02.2020 17:00

Basis: Wet Weight

Seq Number: 3136326

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	09.03.2020 05:23	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	09.03.2020 05:23	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	09.03.2020 05:23	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	09.03.2020 05:23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-130	09.03.2020 05:23	
o-Terphenyl	84-15-1	97	%	70-130	09.03.2020 05:23	



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Larson and Associates, Inc., Midland, TX

Central Vacuum Unit #139

Sample Id: **SP-1 1.5'**
Lab Sample Id: 671426-014

Matrix: Soil
Date Collected: 08.26.2020 12:50

Date Received: 08.31.2020 16:20

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 09.01.2020 08:40

Basis: Wet Weight

Seq Number: 3136120

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.01.2020 21:08	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.01.2020 21:08	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.01.2020 21:08	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.01.2020 21:08	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.01.2020 21:08	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.01.2020 21:08	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.01.2020 21:08	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	105	%	70-130	09.01.2020 21:08		
1,4-Difluorobenzene	540-36-3	105	%	70-130	09.01.2020 21:08		



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Larson and Associates, Inc., Midland, TX

Central Vacuum Unit #139

Sample Id: **SP-3 1'**
Lab Sample Id: 671426-015

Matrix: Soil
Date Collected: 08.26.2020 14:43

Date Received: 08.31.2020 16:20

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 09.02.2020 11:45

Basis: Wet Weight

Seq Number: 3136249

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9110	50.0	mg/kg	09.02.2020 14:00		10

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 09.02.2020 17:00

Basis: Wet Weight

Seq Number: 3136326

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	09.03.2020 05:45	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	09.03.2020 05:45	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	09.03.2020 05:45	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	09.03.2020 05:45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	123	%	70-130	09.03.2020 05:45	
o-Terphenyl	84-15-1	123	%	70-130	09.03.2020 05:45	



Certificate of Analytical Results 671426

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit #139

Sample Id: **SP-3 1'**
Lab Sample Id: 671426-015

Matrix: Soil
Date Collected: 08.26.2020 14:43

Date Received: 08.31.2020 16:20

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 09.01.2020 08:40

Basis: Wet Weight

Seq Number: 3136120

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.01.2020 21:29	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.01.2020 21:29	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.01.2020 21:29	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.01.2020 21:29	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.01.2020 21:29	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.01.2020 21:29	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.01.2020 21:29	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	107	%	70-130	09.01.2020 21:29	
1,4-Difluorobenzene	540-36-3	108	%	70-130	09.01.2020 21:29	



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Larson and Associates, Inc., Midland, TX

Central Vacuum Unit #139

Sample Id: **SP-3 1.5'**
Lab Sample Id: 671426-016

Matrix: Soil
Date Collected: 08.26.2020 14:45

Date Received: 08.31.2020 16:20

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3136249

Prep Method: E300P

% Moisture:

Date Prep: 09.02.2020 11:45

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6210	49.6	mg/kg	09.02.2020 14:16		10

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3136326

Prep Method: SW8015P

% Moisture:

Date Prep: 09.02.2020 17:00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	09.03.2020 06:08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	09.03.2020 06:08	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	09.03.2020 06:08	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	09.03.2020 06:08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-130	09.03.2020 06:08	
o-Terphenyl	84-15-1	113	%	70-130	09.03.2020 06:08	



Certificate of Analytical Results 671426

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit #139

Sample Id: **SP-3 1.5'**
Lab Sample Id: 671426-016

Matrix: Soil
Date Collected: 08.26.2020 14:45

Date Received: 08.31.2020 16:20

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 09.01.2020 16:00

Basis: Wet Weight

Seq Number: 3136155

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	09.01.2020 23:40	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	09.01.2020 23:40	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	09.01.2020 23:40	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	09.01.2020 23:40	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	09.01.2020 23:40	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	09.01.2020 23:40	U	1
Total BTEX		<0.00198	0.00198	mg/kg	09.01.2020 23:40	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	102	%	70-130	09.01.2020 23:40	
4-Bromofluorobenzene	460-00-4	107	%	70-130	09.01.2020 23:40	



Certificate of Analytical Results 671426

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit #139

Sample Id: **SP-4 1'**
Lab Sample Id: 671426-017

Matrix: Soil
Date Collected: 08.26.2020 13:10

Date Received: 08.31.2020 16:20

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 09.02.2020 11:45

Basis: Wet Weight

Seq Number: 3136249

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	16100	99.0	mg/kg	09.02.2020 14:21		20

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 09.02.2020 17:00

Basis: Wet Weight

Seq Number: 3136326

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	09.03.2020 06:31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	09.03.2020 06:31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	09.03.2020 06:31	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	09.03.2020 06:31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-130	09.03.2020 06:31	
o-Terphenyl	84-15-1	107	%	70-130	09.03.2020 06:31	



Certificate of Analytical Results 671426

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit #139

Sample Id: **SP-4 1'**
Lab Sample Id: 671426-017

Matrix: Soil
Date Collected: 08.26.2020 13:10

Date Received: 08.31.2020 16:20

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 09.01.2020 16:00

Basis: Wet Weight

Seq Number: 3136155

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.02.2020 00:00	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.02.2020 00:00	UX	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.02.2020 00:00	UX	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	09.02.2020 00:00	UX	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.02.2020 00:00	UX	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.02.2020 00:00	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.02.2020 00:00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	107	%	70-130	09.02.2020 00:00	
1,4-Difluorobenzene	540-36-3	104	%	70-130	09.02.2020 00:00	



Certificate of Analytical Results 671426

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit #139

Sample Id: **SP-4 1.5'**
Lab Sample Id: 671426-018

Matrix: Soil
Date Collected: 08.26.2020 13:20

Date Received: 08.31.2020 16:20

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 09.02.2020 11:45

Basis: Wet Weight

Seq Number: 3136249

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1680	25.2	mg/kg	09.02.2020 14:37		5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 09.02.2020 17:00

Basis: Wet Weight

Seq Number: 3136326

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	09.03.2020 06:53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	09.03.2020 06:53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	09.03.2020 06:53	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	09.03.2020 06:53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-130	09.03.2020 06:53	
o-Terphenyl	84-15-1	103	%	70-130	09.03.2020 06:53	



Certificate of Analytical Results 671426

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit #139

Sample Id: **SP-4 1.5'**
Lab Sample Id: 671426-018

Matrix: Soil
Date Collected: 08.26.2020 13:20

Date Received: 08.31.2020 16:20

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 09.01.2020 16:00

Basis: Wet Weight

Seq Number: 3136155

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	09.02.2020 00:21	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	09.02.2020 00:21	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	09.02.2020 00:21	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	09.02.2020 00:21	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	09.02.2020 00:21	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	09.02.2020 00:21	U	1
Total BTEX		<0.00201	0.00201	mg/kg	09.02.2020 00:21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	109	%	70-130	09.02.2020 00:21	
1,4-Difluorobenzene	540-36-3	103	%	70-130	09.02.2020 00:21	



Certificate of Analytical Results 671426

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit #139

Sample Id: **SP-5 1'**
Lab Sample Id: 671426-019

Matrix: Soil
Date Collected: 08.26.2020 14:28

Date Received: 08.31.2020 16:20

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 09.02.2020 11:45

Basis: Wet Weight

Seq Number: 3136249

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	11600	99.6	mg/kg	09.02.2020 14:42		20

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 09.02.2020 17:00

Basis: Wet Weight

Seq Number: 3136326

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	09.03.2020 07:16	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	09.03.2020 07:16	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	09.03.2020 07:16	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	09.03.2020 07:16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-130	09.03.2020 07:16	
o-Terphenyl	84-15-1	107	%	70-130	09.03.2020 07:16	



Certificate of Analytical Results 671426

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit #139

Sample Id: **SP-5 1'**
Lab Sample Id: 671426-019

Matrix: Soil
Date Collected: 08.26.2020 14:28

Date Received: 08.31.2020 16:20

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 09.02.2020 08:45

Basis: Wet Weight

Seq Number: 3136263

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.02.2020 13:30	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.02.2020 13:30	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.02.2020 13:30	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	09.02.2020 13:30	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.02.2020 13:30	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.02.2020 13:30	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.02.2020 13:30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	105	%	70-130	09.02.2020 13:30	
1,4-Difluorobenzene	540-36-3	100	%	70-130	09.02.2020 13:30	



Certificate of Analytical Results 671426

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit #139

Sample Id: **SP- 5 1.5'**

Matrix: Soil

Date Received: 08.31.2020 16:20

Lab Sample Id: 671426-020

Date Collected: 08.26.2020 14:30

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 09.02.2020 11:45

Basis: Wet Weight

Seq Number: 3136249

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2120	25.0	mg/kg	09.02.2020 14:47		5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 09.02.2020 17:00

Basis: Wet Weight

Seq Number: 3136326

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	09.03.2020 08:01	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	09.03.2020 08:01	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	09.03.2020 08:01	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	09.03.2020 08:01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-130	09.03.2020 08:01	
o-Terphenyl	84-15-1	103	%	70-130	09.03.2020 08:01	



Certificate of Analytical Results 671426

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit #139

Sample Id: **SP- 5 1.5'**

Matrix: Soil

Date Received: 08.31.2020 16:20

Lab Sample Id: 671426-020

Date Collected: 08.26.2020 14:30

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 09.02.2020 08:45

Basis: Wet Weight

Seq Number: 3136263

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	09.02.2020 11:46	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	09.02.2020 11:46	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	09.02.2020 11:46	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	09.02.2020 11:46	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	09.02.2020 11:46	UX	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	09.02.2020 11:46	U	1
Total BTEX		<0.00201	0.00201	mg/kg	09.02.2020 11:46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	103	%	70-130	09.02.2020 11:46	
1,4-Difluorobenzene	540-36-3	100	%	70-130	09.02.2020 11:46	



Certificate of Analytical Results 671426

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit #139

Sample Id: **SP-13 1'**
Lab Sample Id: 671426-021

Matrix: Soil
Date Collected: 08.26.2020 14:08

Date Received: 08.31.2020 16:20

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 09.02.2020 11:45

Basis: Wet Weight

Seq Number: 3136249

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	27.5	4.95	mg/kg	09.02.2020 14:52		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 09.02.2020 17:00

Basis: Wet Weight

Seq Number: 3136327

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	09.03.2020 05:45	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	09.03.2020 05:45	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	09.03.2020 05:45	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	09.03.2020 05:45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-130	09.03.2020 05:45	
o-Terphenyl	84-15-1	96	%	70-130	09.03.2020 05:45	



Certificate of Analytical Results 671426

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit #139

Sample Id: **SP-13 1'**
Lab Sample Id: 671426-021

Matrix: Soil
Date Collected: 08.26.2020 14:08

Date Received: 08.31.2020 16:20

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 09.02.2020 08:45

Basis: Wet Weight

Seq Number: 3136263

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	09.02.2020 13:50	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	09.02.2020 13:50	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	09.02.2020 13:50	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	09.02.2020 13:50	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	09.02.2020 13:50	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	09.02.2020 13:50	U	1
Total BTEX		<0.00201	0.00201	mg/kg	09.02.2020 13:50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	102	%	70-130	09.02.2020 13:50	
4-Bromofluorobenzene	460-00-4	109	%	70-130	09.02.2020 13:50	



Certificate of Analytical Results 671426

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit #139

Sample Id: **SP-13 1.5'**

Matrix: Soil

Date Received: 08.31.2020 16:20

Lab Sample Id: 671426-022

Date Collected: 08.26.2020 14:10

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 09.02.2020 11:45

Basis: Wet Weight

Seq Number: 3136249

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	20.9	4.98	mg/kg	09.02.2020 14:58		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 09.02.2020 17:00

Basis: Wet Weight

Seq Number: 3136327

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	09.03.2020 06:08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	09.03.2020 06:08	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	09.03.2020 06:08	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	09.03.2020 06:08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-130	09.03.2020 06:08	
o-Terphenyl	84-15-1	100	%	70-130	09.03.2020 06:08	



Certificate of Analytical Results 671426

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit #139

Sample Id: **SP-13 1.5'**

Matrix: Soil

Date Received: 08.31.2020 16:20

Lab Sample Id: 671426-022

Date Collected: 08.26.2020 14:10

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 09.02.2020 08:45

Basis: Wet Weight

Seq Number: 3136263

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	09.02.2020 14:11	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	09.02.2020 14:11	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	09.02.2020 14:11	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	09.02.2020 14:11	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	09.02.2020 14:11	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	09.02.2020 14:11	U	1
Total BTEX		<0.00201	0.00201	mg/kg	09.02.2020 14:11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	109	%	70-130	09.02.2020 14:11	
1,4-Difluorobenzene	540-36-3	101	%	70-130	09.02.2020 14:11	

Flagging Criteria

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

** Surrogate recovered outside laboratory control limit.

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

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



Larson and Associates, Inc.
Central Vaccum Unit #139

Analytical Method: Chloride by EPA 300

Seq Number: 3136163

MB Sample Id: 7710596-1-BLK

Matrix: Solid

LCS Sample Id: 7710596-1-BKS

Prep Method: E300P

Date Prep: 09.01.2020

LCSD Sample Id: 7710596-1-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	256	102	254	102	90-110	1	20	mg/kg	09.01.2020 22:03	

Analytical Method: Chloride by EPA 300

Seq Number: 3136249

MB Sample Id: 7710655-1-BLK

Matrix: Solid

LCS Sample Id: 7710655-1-BKS

Prep Method: E300P

Date Prep: 09.02.2020

LCSD Sample Id: 7710655-1-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	256	102	255	102	90-110	0	20	mg/kg	09.02.2020 12:36	

Analytical Method: Chloride by EPA 300

Seq Number: 3136163

Parent Sample Id: 671437-021

Matrix: Soil

MS Sample Id: 671437-021 S

Prep Method: E300P

Date Prep: 09.01.2020

MSD Sample Id: 671437-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	5240	2500	7930	108	7850	104	90-110	1	20	mg/kg	09.01.2020 22:19	

Analytical Method: Chloride by EPA 300

Seq Number: 3136163

Parent Sample Id: 671437-031

Matrix: Soil

MS Sample Id: 671437-031 S

Prep Method: E300P

Date Prep: 09.01.2020

MSD Sample Id: 671437-031 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	4440	2500	7250	112	7130	108	90-110	2	20	mg/kg	09.01.2020 23:29	X

Analytical Method: Chloride by EPA 300

Seq Number: 3136249

Parent Sample Id: 671426-005

Matrix: Soil

MS Sample Id: 671426-005 S

Prep Method: E300P

Date Prep: 09.02.2020

MSD Sample Id: 671426-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	6510	2480	9190	108	9140	106	90-110	1	20	mg/kg	09.02.2020 12:52	

Analytical Method: Chloride by EPA 300

Seq Number: 3136249

Parent Sample Id: 671426-015

Matrix: Soil

MS Sample Id: 671426-015 S

Prep Method: E300P

Date Prep: 09.02.2020

MSD Sample Id: 671426-015 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	9110	2500	11700	104	11700	104	90-110	0	20	mg/kg	09.02.2020 14:05	

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

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

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

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

Larson and Associates, Inc.
 Central Vaccum Unit #139
Analytical Method: TPH by SW8015 Mod

Seq Number: 3136326

MB Sample Id: 7710710-1-BLK

Matrix: Solid

LCS Sample Id: 7710710-1-BKS

Prep Method: SW8015P

Date Prep: 09.02.2020

LCSD Sample Id: 7710710-1-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	875	88	853	85	70-130	3	20	mg/kg	09.02.2020 22:34	
Diesel Range Organics (DRO)	<50.0	1000	921	92	905	91	70-130	2	20	mg/kg	09.02.2020 22:34	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag		LCSD %Rec	LCSD Flag		Limits	Units	Analysis Date	
1-Chlorooctane	96		113			101			70-130	%	09.02.2020 22:34	
o-Terphenyl	96		107			101			70-130	%	09.02.2020 22:34	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3136327

MB Sample Id: 7710711-1-BLK

Matrix: Solid

LCS Sample Id: 7710711-1-BKS

Prep Method: SW8015P

Date Prep: 09.02.2020

LCSD Sample Id: 7710711-1-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	929	93	839	84	70-130	10	20	mg/kg	09.02.2020 22:34	
Diesel Range Organics (DRO)	<50.0	1000	952	95	822	82	70-130	15	20	mg/kg	09.02.2020 22:34	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag		LCSD %Rec	LCSD Flag		Limits	Units	Analysis Date	
1-Chlorooctane	96		114			101			70-130	%	09.02.2020 22:34	
o-Terphenyl	96		117			101			70-130	%	09.02.2020 22:34	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3136326

Matrix: Solid

MB Sample Id: 7710710-1-BLK

Prep Method: SW8015P

Date Prep: 09.02.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	09.02.2020 22:12	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3136327

Matrix: Solid

MB Sample Id: 7710711-1-BLK

Prep Method: SW8015P

Date Prep: 09.02.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	09.02.2020 22:12	

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

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

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

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

Larson and Associates, Inc.
 Central Vaccum Unit #139
Analytical Method: TPH by SW8015 Mod

Seq Number: 3136326

Parent Sample Id: 671426-001

Matrix: Soil

MS Sample Id: 671426-001 S

Prep Method: SW8015P

Date Prep: 09.02.2020

MSD Sample Id: 671426-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	999	930	93	874	88	70-130	6	20	mg/kg	09.02.2020 23:41	
Diesel Range Organics (DRO)	<50.0	999	988	99	866	87	70-130	13	20	mg/kg	09.02.2020 23:41	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	106		93		70-130	%	09.02.2020 23:41
o-Terphenyl	103		94		70-130	%	09.02.2020 23:41

Analytical Method: TPH by SW8015 Mod

Seq Number: 3136327

Parent Sample Id: 671554-001

Matrix: Soil

MS Sample Id: 671554-001 S

Prep Method: SW8015P

Date Prep: 09.02.2020

MSD Sample Id: 671554-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<49.9	997	848	85	829	83	70-130	2	20	mg/kg	09.02.2020 23:41	
Diesel Range Organics (DRO)	<49.9	997	826	83	805	81	70-130	3	20	mg/kg	09.02.2020 23:41	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	96		94		70-130	%	09.02.2020 23:41
o-Terphenyl	95		93		70-130	%	09.02.2020 23:41

Analytical Method: BTEX by EPA 8021B

Seq Number: 3136119

MB Sample Id: 7710618-1-BLK

Matrix: Solid

LCS Sample Id: 7710618-1-BKS

Prep Method: SW5035A

Date Prep: 09.01.2020

LCSD Sample Id: 7710618-1-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	0.101	101	0.0879	88	70-130	14	35	mg/kg	09.01.2020 08:59	
Toluene	<0.00200	0.100	0.0978	98	0.0842	84	70-130	15	35	mg/kg	09.01.2020 08:59	
Ethylbenzene	<0.00200	0.100	0.104	104	0.0885	89	70-130	16	35	mg/kg	09.01.2020 08:59	
m,p-Xylenes	<0.00400	0.200	0.213	107	0.179	90	70-130	17	35	mg/kg	09.01.2020 08:59	
o-Xylene	<0.00200	0.100	0.107	107	0.0903	90	70-130	17	35	mg/kg	09.01.2020 08:59	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		100		98		70-130	%	09.01.2020 08:59
4-Bromofluorobenzene	101		117		109		70-130	%	09.01.2020 08:59

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

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

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

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



Larson and Associates, Inc.
Central Vaccum Unit #139

Analytical Method: BTEX by EPA 8021B

Seq Number: 3136120

Matrix: Solid

Prep Method: SW5035A

Date Prep: 09.01.2020

MB Sample Id: 7710620-1-BLK

LCS Sample Id: 7710620-1-BKS

LCSD Sample Id: 7710620-1-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	0.104	104	0.101	101	70-130	3	35	mg/kg	09.01.2020 09:05	
Toluene	<0.00200	0.100	0.106	106	0.103	103	70-130	3	35	mg/kg	09.01.2020 09:05	
Ethylbenzene	<0.00200	0.100	0.0998	100	0.0963	96	70-130	4	35	mg/kg	09.01.2020 09:05	
m,p-Xylenes	<0.00400	0.200	0.199	100	0.192	96	70-130	4	35	mg/kg	09.01.2020 09:05	
o-Xylene	<0.00200	0.100	0.100	100	0.0965	97	70-130	4	35	mg/kg	09.01.2020 09:05	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	92		104		106		70-130	%	09.01.2020 09:05
4-Bromofluorobenzene	81		101		103		70-130	%	09.01.2020 09:05

Analytical Method: BTEX by EPA 8021B

Seq Number: 3136155

Matrix: Solid

Prep Method: SW5035A

Date Prep: 09.01.2020

MB Sample Id: 7710629-1-BLK

LCS Sample Id: 7710629-1-BKS

LCSD Sample Id: 7710629-1-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	0.105	105	0.102	102	70-130	3	35	mg/kg	09.01.2020 21:18	
Toluene	<0.00200	0.100	0.0979	98	0.0945	95	70-130	4	35	mg/kg	09.01.2020 21:18	
Ethylbenzene	<0.00200	0.100	0.0990	99	0.0949	95	70-130	4	35	mg/kg	09.01.2020 21:18	
m,p-Xylenes	<0.00400	0.200	0.197	99	0.188	94	70-130	5	35	mg/kg	09.01.2020 21:18	
o-Xylene	<0.00200	0.100	0.0970	97	0.0924	92	70-130	5	35	mg/kg	09.01.2020 21:18	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	98		96		97		70-130	%	09.01.2020 21:18
4-Bromofluorobenzene	106		101		100		70-130	%	09.01.2020 21:18

Analytical Method: BTEX by EPA 8021B

Seq Number: 3136263

Matrix: Solid

Prep Method: SW5035A

Date Prep: 09.02.2020

MB Sample Id: 7710715-1-BLK

LCS Sample Id: 7710715-1-BKS

LCSD Sample Id: 7710715-1-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	0.105	105	0.0884	88	70-130	17	35	mg/kg	09.02.2020 09:24	
Toluene	<0.00200	0.100	0.114	114	0.0967	97	70-130	16	35	mg/kg	09.02.2020 09:24	
Ethylbenzene	<0.00200	0.100	0.104	104	0.0881	88	70-130	17	35	mg/kg	09.02.2020 09:24	
m,p-Xylenes	<0.00400	0.200	0.206	103	0.176	88	70-130	16	35	mg/kg	09.02.2020 09:24	
o-Xylene	<0.00200	0.100	0.0990	99	0.0842	84	70-130	16	35	mg/kg	09.02.2020 09:24	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	97		97		86		70-130	%	09.02.2020 09:24
4-Bromofluorobenzene	105		104		94		70-130	%	09.02.2020 09:24

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

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

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

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



Larson and Associates, Inc.
Central Vaccum Unit #139

Analytical Method: BTEX by EPA 8021B

Seq Number: 3136119

Matrix: Soil

Prep Method: SW5035A

Date Prep: 09.01.2020

Parent Sample Id: 671426-002

MS Sample Id: 671426-002 S

MSD Sample Id: 671426-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.0836	84	0.0749	76	70-130	11	35	mg/kg	09.01.2020 09:54	
Toluene	<0.00199	0.0996	0.0754	76	0.0711	72	70-130	6	35	mg/kg	09.01.2020 09:54	
Ethylbenzene	<0.00199	0.0996	0.0762	77	0.0737	74	70-130	3	35	mg/kg	09.01.2020 09:54	
m,p-Xylenes	<0.00398	0.199	0.151	76	0.150	76	70-130	1	35	mg/kg	09.01.2020 09:54	
o-Xylene	<0.00199	0.0996	0.0757	76	0.0761	77	70-130	1	35	mg/kg	09.01.2020 09:54	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		97		70-130	%	09.01.2020 09:54
4-Bromofluorobenzene	102		111		70-130	%	09.01.2020 09:54

Analytical Method: BTEX by EPA 8021B

Seq Number: 3136120

Matrix: Soil

Prep Method: SW5035A

Date Prep: 09.01.2020

Parent Sample Id: 671426-004

MS Sample Id: 671426-004 S

MSD Sample Id: 671426-004 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	0.101	101	0.105	105	70-130	4	35	mg/kg	09.01.2020 10:00	
Toluene	<0.00200	0.0998	0.104	104	0.106	106	70-130	2	35	mg/kg	09.01.2020 10:00	
Ethylbenzene	<0.00200	0.0998	0.0978	98	0.0990	99	70-130	1	35	mg/kg	09.01.2020 10:00	
m,p-Xylenes	<0.00399	0.200	0.196	98	0.203	102	70-130	4	35	mg/kg	09.01.2020 10:00	
o-Xylene	<0.00200	0.0998	0.0977	98	0.0986	99	70-130	1	35	mg/kg	09.01.2020 10:00	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		100		70-130	%	09.01.2020 10:00
4-Bromofluorobenzene	112		117		70-130	%	09.01.2020 10:00

Analytical Method: BTEX by EPA 8021B

Seq Number: 3136155

Matrix: Soil

Prep Method: SW5035A

Date Prep: 09.01.2020

Parent Sample Id: 671426-017

MS Sample Id: 671426-017 S

MSD Sample Id: 671426-017 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.0723	73	0.0756	76	70-130	4	35	mg/kg	09.01.2020 21:59	
Toluene	<0.00199	0.0996	0.0654	66	0.0645	65	70-130	1	35	mg/kg	09.01.2020 21:59	X
Ethylbenzene	<0.00199	0.0996	0.0627	63	0.0580	58	70-130	8	35	mg/kg	09.01.2020 21:59	X
m,p-Xylenes	<0.00398	0.199	0.123	62	0.113	57	70-130	8	35	mg/kg	09.01.2020 21:59	X
o-Xylene	<0.00199	0.0996	0.0608	61	0.0557	56	70-130	9	35	mg/kg	09.01.2020 21:59	X

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		98		70-130	%	09.01.2020 21:59
4-Bromofluorobenzene	107		103		70-130	%	09.01.2020 21:59

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

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

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

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

Larson and Associates, Inc.
 Central Vacuum Unit #139
Analytical Method: BTEX by EPA 8021B

Seq Number: 3136263

Parent Sample Id: 671426-020

Matrix: Soil

MS Sample Id: 671426-020 S

Prep Method: SW5035A

Date Prep: 09.02.2020

MSD Sample Id: 671426-020 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	0.0779	78	0.0918	92	70-130	16	35	mg/kg	09.02.2020 10:05	
Toluene	<0.00200	0.0998	0.0827	83	0.0965	97	70-130	15	35	mg/kg	09.02.2020 10:05	
Ethylbenzene	<0.00200	0.0998	0.0717	72	0.0843	85	70-130	16	35	mg/kg	09.02.2020 10:05	
m,p-Xylenes	<0.00399	0.200	0.143	72	0.167	84	70-130	15	35	mg/kg	09.02.2020 10:05	
o-Xylene	<0.00200	0.0998	0.0693	69	0.0817	82	70-130	16	35	mg/kg	09.02.2020 10:05	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	88		98		70-130	%	09.02.2020 10:05
4-Bromofluorobenzene	97		109		70-130	%	09.02.2020 10:05

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

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

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

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

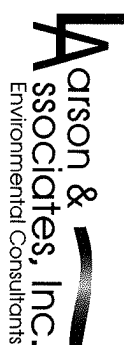
276
N₁₀

COLLECTOR: DS/75

FIELD NOTES

No.

☐ HAND DELIVERED



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

Data Reported to:

DATE: 8/31/2020 PAGE 2 OF 2
PO#: _____ LAB WORK ORDER#: _____
PROJECT LOCATION OR NAME: Central Petroleum Unit #139
LAI PROJECT #: 20-0107-17 COLLECTOR: DS/TS

TRRP report?
☐ Yes ☒ No
S=SOIL P=PAINT
W=WATER SL=SLUDGE
A=AIR OT=OTHER

TIME ZONE:
Time zone/State:

WST

Field
Sample I.D.

Lab #

Date

Time

Matrix

of Containers

HCl

HNO₃H₂SO₄ ☐ NaOH ☐

ICE

UNPRESERVED

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 ☐
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 ☐ PECTHLORATE ☐
CHLORIDE ANIONS ☐ ALKALINITY ☐

FIELD NOTES

TOTAL

RELINQUISHED BY: (Signature)

DATE/TIME

RECEIVED BY: (Signature)

RELINQUISHED BY: (Signature)

DATE/TIME

RECEIVED BY: (Signature)

RELINQUISHED BY: (Signature)

DATE/TIME

RECEIVED BY: (Signature)

LABORATORY: Xenoco

TURN AROUND TIME

NORMAL ☒1 DAY ☐2 DAY ☐OTHER ☐

LABORATORY USE ONLY

RECEIVING TEMP: 20.0 THERM#: 806CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED

CARRIER BILL # _____

☐ HAND DELIVERED

1071424

CHAIN-OF-CUSTODY

NO 1277

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: Larson and Associates, Inc.

Date/ Time Received: 08.31.2020 04.20.00 PM

Work Order #: 671426

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)?	2.2
#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: 08.31.2020

Checklist reviewed by:



Holly Taylor

Date: 09.01.2020

Certificate of Analysis Summary 679810



Larson and Associates, Inc., Midland, TX

Project Name: Central Vacuum Unit 139

Project Id: 20-0107-17

Date Received in Lab: Fri 12.04.2020 10:05

Contact: Mark Larson

Report Date: 12.08.2020 14:20

Project Location:

Project Manager: Holly Taylor

<i>Analysis Requested</i>	<i>Lab Id:</i>	679810-001	679810-002	679810-003	679810-004	679810-005	679810-006
	<i>Field Id:</i>	SP-4 5'	SP-4 10'	SP-4 15'	SP-4 20'	SP-10 5'	SP-10 10'
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	12.02.2020 12:31	12.02.2020 12:35	12.02.2020 12:37	12.02.2020 12:40	12.02.2020 13:13	12.02.2020 13:16
BTEX by EPA 8021B	<i>Extracted:</i>	12.04.2020 16:00	12.04.2020 16:00			12.04.2020 16:00	12.04.2020 16:00
	<i>Analyzed:</i>	12.05.2020 06:20	12.05.2020 06:41			12.05.2020 07:02	12.05.2020 07:22
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL			mg/kg RL	mg/kg RL
Benzene		<0.00199 0.00199	<0.00200 0.00200			<0.00200 0.00200	<0.00199 0.00199
Toluene		<0.00199 0.00199	<0.00200 0.00200			<0.00200 0.00200	<0.00199 0.00199
Ethylbenzene		<0.00199 0.00199	<0.00200 0.00200			<0.00200 0.00200	<0.00199 0.00199
m,p-Xylenes		<0.00398 0.00398	<0.00400 0.00400			<0.00400 0.00400	<0.00398 0.00398
o-Xylene		<0.00199 0.00199	<0.00200 0.00200			<0.00200 0.00200	<0.00199 0.00199
Total Xylenes		<0.001990 0.001990	<0.002000 0.002000			<0.002000 0.002000	<0.001990 0.001990
Total BTEX		<0.001990 0.001990	<0.002000 0.002000			<0.002000 0.002000	<0.001990 0.001990
Chloride by EPA 300	<i>Extracted:</i>	12.04.2020 16:05	12.04.2020 16:05	12.04.2020 16:05	12.04.2020 16:05	12.04.2020 16:05	12.04.2020 16:05
	<i>Analyzed:</i>	12.04.2020 20:45	12.04.2020 20:50	12.04.2020 20:55	12.04.2020 21:11	12.04.2020 21:17	12.04.2020 21:32
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		47.9 4.95	10.8 5.05	11.1 5.00	12.5 5.04	2150 24.9	1530 25.0
TPH by SW8015 Mod	<i>Extracted:</i>	12.06.2020 10:00	12.06.2020 10:00			12.06.2020 10:00	12.06.2020 10:00
	<i>Analyzed:</i>	12.06.2020 23:13	12.06.2020 15:42			12.06.2020 16:04	12.06.2020 16:26
	<i>Units/RL:</i>	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	<49.8 49.8
Diesel Range Organics (DRO)		<50.0 50.0	<50.0 50.0			<49.9 49.9	<49.8 49.8
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<50.0 50.0			<49.9 49.9	<49.8 49.8
Total TPH		<50.00 50.00	<50.00 50.00			<49.90 49.90	<49.80 49.80

BRL - Below Reporting Limit

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

Certificate of Analysis Summary 679810



Larson and Associates, Inc., Midland, TX

Project Name: Central Vacuum Unit 139

Project Id: 20-0107-17

Date Received in Lab: Fri 12.04.2020 10:05

Contact: Mark Larson

Report Date: 12.08.2020 14:20

Project Location:

Project Manager: Holly Taylor

Analysis Requested	Lab Id:	679810-007	679810-008	679810-009	679810-010	679810-011	679810-012
	Field Id:	SP-10 15'	SP-10 20'	SP-10 25'	SP-10 30'	SP-10 35'	SP-10 40'
	Depth:						
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	12.02.2020 13:18	12.02.2020 13:20	12.02.2020 14:00	12.02.2020 14:05	12.02.2020 14:30	12.02.2020 14:38
Chloride by EPA 300	Extracted:	12.04.2020 16:05	12.04.2020 16:05	12.04.2020 16:05	12.04.2020 16:05	12.04.2020 16:05	12.04.2020 16:05
	Analyzed:	12.04.2020 21:38	12.04.2020 21:43	12.04.2020 21:48	12.04.2020 21:53	12.04.2020 21:59	12.04.2020 22:04
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		1980 24.8	1950 24.8	1290 4.95	1140 4.95	380 5.04	281 5.01

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Certificate of Analysis Summary 679810



Larson and Associates, Inc., Midland, TX

Project Name: Central Vacuum Unit 139

Project Id: 20-0107-17

Date Received in Lab: Fri 12.04.2020 10:05

Contact: Mark Larson

Report Date: 12.08.2020 14:20

Project Location:

Project Manager: Holly Taylor

<i>Analysis Requested</i>	<i>Lab Id:</i>	679810-013	679810-014	679810-015	679810-016	679810-017	679810-018
	<i>Field Id:</i>	SP-2 5'	SP-2 10'	SP-2 15'	SP-2 20'	SP-3 5'	SP-3 10'
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	12.03.2020 08:37	12.03.2020 08:41	12.03.2020 08:43	12.03.2020 08:46	12.03.2020 09:13	12.03.2020 09:16
BTEX by EPA 8021B	<i>Extracted:</i>	12.04.2020 16:00	12.04.2020 16:00			12.04.2020 16:00	12.04.2020 16:00
	<i>Analyzed:</i>	12.05.2020 07:43	12.05.2020 08:04			12.05.2020 08:24	12.05.2020 08:45
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL			mg/kg RL	mg/kg RL
Benzene		<0.00201 0.00201	<0.00201 0.00201			<0.00202 0.00202	<0.00200 0.00200
Toluene		<0.00201 0.00201	<0.00201 0.00201			<0.00202 0.00202	<0.00200 0.00200
Ethylbenzene		<0.00201 0.00201	<0.00201 0.00201			<0.00202 0.00202	<0.00200 0.00200
m,p-Xylenes		<0.00402 0.00402	<0.00402 0.00402			<0.00404 0.00404	<0.00401 0.00401
o-Xylene		<0.00201 0.00201	<0.00201 0.00201			<0.00202 0.00202	<0.00200 0.00200
Total Xylenes		<0.002010 0.002010	<0.002010 0.002010			<0.002020 0.002020	<0.002000 0.002000
Total BTEX		<0.002010 0.002010	<0.002010 0.002010			<0.002020 0.002020	<0.002000 0.002000
Chloride by EPA 300	<i>Extracted:</i>	12.04.2020 16:23	12.04.2020 16:23	12.04.2020 16:23	12.04.2020 16:23	12.04.2020 16:23	12.04.2020 16:23
	<i>Analyzed:</i>	12.04.2020 22:36	12.04.2020 22:51	12.04.2020 22:57	12.04.2020 23:02	12.04.2020 23:07	12.04.2020 23:23
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		697 X 5.05	77.1 4.96	226 5.00	40.2 5.04	1160 4.98	813 4.99
TPH by SW8015 Mod	<i>Extracted:</i>	12.06.2020 10:00	12.06.2020 10:00			12.06.2020 10:00	12.06.2020 10:00
	<i>Analyzed:</i>	12.06.2020 16:49	12.06.2020 17:11			12.06.2020 17:33	12.06.2020 17:55
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL			mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0	<49.9 49.9			<49.9 49.9	<50.0 50.0
Diesel Range Organics (DRO)		<50.0 50.0	<49.9 49.9			<49.9 49.9	<50.0 50.0
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<49.9 49.9			<49.9 49.9	<50.0 50.0
Total TPH		<50.00 50.00	<49.90 49.90			<49.90 49.90	<50.00 50.00

BRL - Below Reporting Limit

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Certificate of Analysis Summary 679810

Larson and Associates, Inc., Midland, TX

Project Name: Central Vacuum Unit 139

Project Id: 20-0107-17

Date Received in Lab: Fri 12.04.2020 10:05

Contact: Mark Larson

Report Date: 12.08.2020 14:20

Project Location:

Project Manager: Holly Taylor

<i>Analysis Requested</i>	<i>Lab Id:</i>	679810-019	679810-020	679810-021	679810-022	679810-023	679810-024
	<i>Field Id:</i>	SP-3 15'	SP-3 20'	SP-5 5'	SP-5 10'	SP-5 15'	SP-5 20'
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	12.03.2020 09:17	12.03.2020 09:19	12.03.2020 09:56	12.03.2020 10:00	12.03.2020 10:01	12.03.2020 10:04
BTEX by EPA 8021B	<i>Extracted:</i>			12.04.2020 16:00	12.04.2020 16:00		
	<i>Analyzed:</i>			12.05.2020 09:05	12.05.2020 10:29		
	<i>Units/RL:</i>			mg/kg RL	mg/kg RL		
Benzene				<0.00200 0.00200	<0.00201 0.00201		
Toluene				<0.00200 0.00200	<0.00201 0.00201		
Ethylbenzene				<0.00200 0.00200	<0.00201 0.00201		
m,p-Xylenes				<0.00399 0.00399	<0.00402 0.00402		
o-Xylene				<0.00200 0.00200	<0.00201 0.00201		
Total Xylenes				<0.002000 0.002000	<0.002010 0.002010		
Total BTEX				<0.002000 0.002000	<0.002010 0.002010		
Chloride by EPA 300	<i>Extracted:</i>	12.04.2020 16:23	12.04.2020 16:23	12.04.2020 16:23	12.04.2020 16:23	12.04.2020 16:23	12.04.2020 16:23
	<i>Analyzed:</i>	12.04.2020 23:28	12.04.2020 23:34	12.04.2020 23:39	12.04.2020 23:44	12.04.2020 23:49	12.05.2020 00:05
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		556 5.03	139 4.95	1940 25.2	3730 24.9	2810 25.3	1410 24.8
TPH by SW8015 Mod	<i>Extracted:</i>			12.06.2020 10:00	12.06.2020 10:00		
	<i>Analyzed:</i>			12.06.2020 18:18	12.06.2020 18:40		
	<i>Units/RL:</i>			mg/kg RL	mg/kg RL		
Gasoline Range Hydrocarbons (GRO)				<49.9 49.9	<49.8 49.8		
Diesel Range Organics (DRO)				<49.9 49.9	<49.8 49.8		
Motor Oil Range Hydrocarbons (MRO)				<49.9 49.9	<49.8 49.8		
Total TPH				<49.90 49.90	<49.80 49.80		

BRL - Below Reporting Limit



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Certificate of Analysis Summary 679810

Larson and Associates, Inc., Midland, TX

Project Name: Central Vacuum Unit 139

Project Id: 20-0107-17

Date Received in Lab: Fri 12.04.2020 10:05

Contact: Mark Larson

Report Date: 12.08.2020 14:20

Project Location:

Project Manager: Holly Taylor

<i>Analysis Requested</i>	<i>Lab Id:</i>	679810-025	679810-026	679810-027	679810-028	679810-029	679810-030
	<i>Field Id:</i>	SP-5 25'	SP-9 5'	SP-9 10'	SP-9 15'	SP-9 20'	SP-8 5'
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	12.03.2020 10:28	12.03.2020 10:54	12.03.2020 11:00	12.03.2020 11:01	12.03.2020 11:02	12.03.2020 11:27
BTEX by EPA 8021B	<i>Extracted:</i>		12.04.2020 16:00	12.04.2020 16:00			12.04.2020 16:00
	<i>Analyzed:</i>		12.05.2020 10:49	12.05.2020 11:10			12.05.2020 11:30
	<i>Units/RL:</i>		mg/kg RL	mg/kg RL			mg/kg RL
Benzene			<0.00199 0.00199	<0.00198 0.00198			<0.00198 0.00198
Toluene			<0.00199 0.00199	<0.00198 0.00198			<0.00198 0.00198
Ethylbenzene			<0.00199 0.00199	<0.00198 0.00198			<0.00198 0.00198
m,p-Xylenes			<0.00398 0.00398	<0.00396 0.00396			<0.00397 0.00397
o-Xylene			<0.00199 0.00199	<0.00198 0.00198			<0.00198 0.00198
Total Xylenes			<0.001990 0.001990	<0.001980 0.001980			<0.001980 0.001980
Total BTEX			<0.001990 0.001990	<0.001980 0.001980			<0.001980 0.001980
Chloride by EPA 300	<i>Extracted:</i>	12.04.2020 16:23	12.04.2020 16:23	12.04.2020 16:23	12.04.2020 16:23	12.04.2020 16:23	12.04.2020 16:23
	<i>Analyzed:</i>	12.05.2020 00:10	12.05.2020 00:26	12.05.2020 00:32	12.05.2020 00:37	12.05.2020 00:42	12.05.2020 00:47
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		54.9 5.03	962 4.98	183 4.96	236 5.00	132 5.00	501 5.00
TPH by SW8015 Mod	<i>Extracted:</i>		12.06.2020 10:00	12.06.2020 10:00			12.06.2020 10:00
	<i>Analyzed:</i>		12.06.2020 19:25	12.06.2020 19:47			12.06.2020 20:10
	<i>Units/RL:</i>		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
Diesel Range Organics (DRO)			<50.0 50.0	<50.0 50.0			<49.9 49.9
Motor Oil Range Hydrocarbons (MRO)			<50.0 50.0	<50.0 50.0			<49.9 49.9
Total TPH			<50.00 50.00	<50.00 50.00			<49.90 49.90

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Larson and Associates, Inc., Midland, TX

Project Name: Central Vacuum Unit 139

Project Id: 20-0107-17

Date Received in Lab: Fri 12.04.2020 10:05

Contact: Mark Larson

Report Date: 12.08.2020 14:20

Project Location:

Project Manager: Holly Taylor

<i>Analysis Requested</i>	<i>Lab Id:</i>	679810-031	679810-032	679810-033	679810-034	679810-035	679810-036
	<i>Field Id:</i>	SP-8 10'	SP-8 15'	SP-8 20'	SP-8 25'	SP-7 5'	SP-7 10'
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	12.03.2020 11:29	12.03.2020 11:32	12.03.2020 11:33	12.03.2020 11:53	12.03.2020 12:12	12.03.2020 12:14
BTEX by EPA 8021B	<i>Extracted:</i>	12.04.2020 16:00				12.04.2020 16:00	12.04.2020 16:00
	<i>Analyzed:</i>	12.05.2020 11:51				12.05.2020 12:12	12.05.2020 12:32
	<i>Units/RL:</i>	mg/kg RL				mg/kg RL	mg/kg RL
Benzene		<0.00198 0.00198				<0.00200 0.00200	<0.00201 0.00201
Toluene		<0.00198 0.00198				<0.00200 0.00200	<0.00201 0.00201
Ethylbenzene		<0.00198 0.00198				<0.00200 0.00200	<0.00201 0.00201
m,p-Xylenes		<0.00397 0.00397				<0.00400 0.00400	<0.00402 0.00402
o-Xylene		<0.00198 0.00198				<0.00200 0.00200	<0.00201 0.00201
Total Xylenes		<0.001980 0.001980				<0.002000 0.002000	<0.002010 0.002010
Total BTEX		<0.001980 0.001980				<0.002000 0.002000	<0.002010 0.002010
Chloride by EPA 300	<i>Extracted:</i>	12.04.2020 16:23	12.04.2020 16:23	12.04.2020 16:35	12.04.2020 16:35	12.04.2020 16:35	12.04.2020 16:35
	<i>Analyzed:</i>	12.05.2020 00:53	12.05.2020 00:58	12.04.2020 17:09	12.04.2020 17:31	12.04.2020 17:39	12.04.2020 17:46
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		558 5.00	970 5.05	707 5.04	183 4.96	1040 4.99	221 5.05
TPH by SW8015 Mod	<i>Extracted:</i>	12.06.2020 10:00				12.06.2020 10:00	12.06.2020 10:00
	<i>Analyzed:</i>	12.06.2020 20:32				12.06.2020 21:22	12.06.2020 21:44
	<i>Units/RL:</i>	mg/kg RL				mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0				<49.9 49.9	<49.8 49.8
Diesel Range Organics (DRO)		<50.0 50.0				<49.9 49.9	<49.8 49.8
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0				<49.9 49.9	<49.8 49.8
Total TPH		<50.00 50.00				<49.90 49.90	<49.80 49.80

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Certificate of Analysis Summary 679810



Larson and Associates, Inc., Midland, TX

Project Name: Central Vacuum Unit 139

Project Id: 20-0107-17

Date Received in Lab: Fri 12.04.2020 10:05

Contact: Mark Larson

Report Date: 12.08.2020 14:20

Project Location:

Project Manager: Holly Taylor

<i>Analysis Requested</i>	<i>Lab Id:</i>	679810-037	679810-038	679810-039	679810-040	679810-041	679810-042
	<i>Field Id:</i>	SP-7 15'	SP-7 20'	SP-6 5'	SP-6 10'	SP-6 15'	SP-6 20'
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	12.03.2020 12:17	12.03.2020 12:18	12.03.2020 12:38	12.03.2020 12:40	12.03.2020 12:43	12.03.2020 12:45
BTEX by EPA 8021B	<i>Extracted:</i>			12.04.2020 16:00	12.04.2020 16:00		
	<i>Analyzed:</i>			12.05.2020 12:53	12.05.2020 13:14		
	<i>Units/RL:</i>			mg/kg RL	mg/kg RL		
Benzene				<0.00202 0.00202	<0.00198 0.00198		
Toluene				<0.00202 0.00202	<0.00198 0.00198		
Ethylbenzene				<0.00202 0.00202	<0.00198 0.00198		
m,p-Xylenes				<0.00403 0.00403	<0.00396 0.00396		
o-Xylene				<0.00202 0.00202	<0.00198 0.00198		
Total Xylenes				<0.002020 0.002020	<0.001980 0.001980		
Total BTEX				<0.002020 0.002020	<0.001980 0.001980		
Chloride by EPA 300	<i>Extracted:</i>	12.04.2020 16:35	12.04.2020 16:35	12.04.2020 16:35	12.04.2020 16:35	12.04.2020 16:35	12.04.2020 16:35
	<i>Analyzed:</i>	12.04.2020 17:53	12.04.2020 18:15	12.04.2020 18:23	12.04.2020 18:30	12.04.2020 18:37	12.04.2020 18:45
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		127 4.96	79.6 4.99	549 5.00	231 5.03	245 5.00	316 5.02
TPH by SW8015 Mod	<i>Extracted:</i>			12.06.2020 10:00	12.06.2020 10:00		
	<i>Analyzed:</i>			12.06.2020 22:07	12.06.2020 22:30		
	<i>Units/RL:</i>			mg/kg RL	mg/kg RL		
Gasoline Range Hydrocarbons (GRO)				<50.0 50.0	<50.0 50.0		
Diesel Range Organics (DRO)				<50.0 50.0	<50.0 50.0		
Motor Oil Range Hydrocarbons (MRO)				<50.0 50.0	<50.0 50.0		
Total TPH				<50.00 50.00	<50.00 50.00		

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Certificate of Analysis Summary 679810

Larson and Associates, Inc., Midland, TX

Project Name: Central Vacuum Unit 139

Project Id: 20-0107-17

Date Received in Lab: Fri 12.04.2020 10:05

Contact: Mark Larson

Report Date: 12.08.2020 14:20

Project Location:

Project Manager: Holly Taylor

Analysis Requested	Lab Id:	679810-043					
	Field Id:	SP-6 25'					
	Depth:						
	Matrix:	SOIL					
	Sampled:	12.03.2020 13:13					
Chloride by EPA 300	Extracted:	12.04.2020 16:35					
	Analyzed:	12.04.2020 18:52					
	Units/RL:	mg/kg RL					
Chloride		14.4 X 4.95					

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Analytical Report 679810

for

Larson and Associates, Inc.

Project Manager: Mark Larson

Central Vacuum Unit 139

20-0107-17

12.08.2020

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)



12.08.2020

Project Manager: **Mark Larson**

Larson and Associates, Inc.

P. O. Box 50685

Midland, TX 79710

Reference: Eurofins Xenco, LLC Report No(s): **679810**

Central Vacuum Unit 139

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) 679810. 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. 679810 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Holly Taylor
Project Manager

A Small Business and Minority Company

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


 Environment Testing
Xenco

Sample Cross Reference 679810

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit 139

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SP-4 5'	S	12.02.2020 12:31		679810-001
SP-4 10'	S	12.02.2020 12:35		679810-002
SP-4 15'	S	12.02.2020 12:37		679810-003
SP-4 20'	S	12.02.2020 12:40		679810-004
SP-10 5'	S	12.02.2020 13:13		679810-005
SP-10 10'	S	12.02.2020 13:16		679810-006
SP-10 15'	S	12.02.2020 13:18		679810-007
SP-10 20'	S	12.02.2020 13:20		679810-008
SP-10 25'	S	12.02.2020 14:00		679810-009
SP-10 30'	S	12.02.2020 14:05		679810-010
SP-10 35'	S	12.02.2020 14:30		679810-011
SP-10 40'	S	12.02.2020 14:38		679810-012
SP-2 5'	S	12.03.2020 08:37		679810-013
SP-2 10'	S	12.03.2020 08:41		679810-014
SP-2 15'	S	12.03.2020 08:43		679810-015
SP-2 20'	S	12.03.2020 08:46		679810-016
SP-3 5'	S	12.03.2020 09:13		679810-017
SP-3 10'	S	12.03.2020 09:16		679810-018
SP-3 15'	S	12.03.2020 09:17		679810-019
SP-3 20'	S	12.03.2020 09:19		679810-020
SP-5 5'	S	12.03.2020 09:56		679810-021
SP-5 10'	S	12.03.2020 10:00		679810-022
SP-5 15'	S	12.03.2020 10:01		679810-023
SP-5 20'	S	12.03.2020 10:04		679810-024
SP-5 25'	S	12.03.2020 10:28		679810-025
SP-9 5'	S	12.03.2020 10:54		679810-026
SP-9 10'	S	12.03.2020 11:00		679810-027
SP-9 15'	S	12.03.2020 11:01		679810-028
SP-9 20'	S	12.03.2020 11:02		679810-029
SP-8 5'	S	12.03.2020 11:27		679810-030
SP-8 10'	S	12.03.2020 11:29		679810-031
SP-8 15'	S	12.03.2020 11:32		679810-032
SP-8 20'	S	12.03.2020 11:33		679810-033
SP-8 25'	S	12.03.2020 11:53		679810-034
SP-7 5'	S	12.03.2020 12:12		679810-035
SP-7 10'	S	12.03.2020 12:14		679810-036
SP-7 15'	S	12.03.2020 12:17		679810-037
SP-7 20'	S	12.03.2020 12:18		679810-038
SP-6 5'	S	12.03.2020 12:38		679810-039
SP-6 10'	S	12.03.2020 12:40		679810-040
SP-6 15'	S	12.03.2020 12:43		679810-041
SP-6 20'	S	12.03.2020 12:45		679810-042
SP-6 25'	S	12.03.2020 13:13		679810-043

**CASE NARRATIVE****Client Name: Larson and Associates, Inc.****Project Name: Central Vacuum Unit 139**Project ID: 20-0107-17
Work Order Number(s): 679810Report Date: 12.08.2020
Date Received: 12.04.2020**Sample receipt non conformances and comments:****Sample receipt non conformances and comments per sample:**

None

Analytical non conformances and comments:

Batch: LBA-3144041 Chloride by EPA 300

Lab Sample ID 679810-023 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 679810-013, -014, -015, -016, -017, -018, -019, -020, -021, -022, -023, -024, -025, -026, -027, -028, -029, -030, -031, -032.

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

Batch: LBA-3144043 Chloride by EPA 300

Lab Sample ID 679810-043 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 679810-033, -034, -035, -036, -037, -038, -039, -040, -041, -042, -043.

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

Batch: LBA-3144079 TPH by SW8015 Mod

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

Samples affected are: 679810-017.



Certificate of Analytical Results 679810

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit 139

Sample Id: **SP-4 5'**
Lab Sample Id: 679810-001

Matrix: Soil
Date Collected: 12.02.2020 12:31

Date Received: 12.04.2020 10:05

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.04.2020 16:05

% Moisture:
Basis: Wet Weight

Seq Number: 3144040

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	47.9	4.95	mg/kg	12.04.2020 20:45		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 12.06.2020 10:00

% Moisture:
Basis: Wet Weight

Seq Number: 3144079

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.06.2020 23:13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.06.2020 23:13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.06.2020 23:13	U	1
Total TPH	PHC635	<50.00	50.00	mg/kg	12.06.2020 23:13	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	108	%	70-130	12.06.2020 23:13		
o-Terphenyl	84-15-1	115	%	70-130	12.06.2020 23:13		



Certificate of Analytical Results 679810

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit 139

Sample Id: **SP-4 5'**
Lab Sample Id: 679810-001

Matrix: Soil
Date Collected: 12.02.2020 12:31

Date Received: 12.04.2020 10:05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 12.04.2020 16:00

% Moisture:
Basis: Wet Weight

Seq Number: 3144018

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	12.05.2020 06:20	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	12.05.2020 06:20	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	12.05.2020 06:20	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	12.05.2020 06:20	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	12.05.2020 06:20	U	1
Total Xylenes	1330-20-7	<0.001990	0.001990	mg/kg	12.05.2020 06:20	U	1
Total BTEX		<0.001990	0.001990	mg/kg	12.05.2020 06:20	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	100	%	70-130	12.05.2020 06:20		
1,4-Difluorobenzene	540-36-3	88	%	70-130	12.05.2020 06:20		



Certificate of Analytical Results 679810

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit 139

Sample Id: **SP-4 10'**
Lab Sample Id: 679810-002

Matrix: Soil
Date Collected: 12.02.2020 12:35

Date Received: 12.04.2020 10:05

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.04.2020 16:05

% Moisture:
Basis: Wet Weight

Seq Number: 3144040

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10.8	5.05	mg/kg	12.04.2020 20:50		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 12.06.2020 10:00

% Moisture:
Basis: Wet Weight

Seq Number: 3144079

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.06.2020 15:42	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.06.2020 15:42	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.06.2020 15:42	U	1
Total TPH	PHC635	<50.00	50.00	mg/kg	12.06.2020 15:42	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	107	%	70-130	12.06.2020 15:42		
o-Terphenyl	84-15-1	112	%	70-130	12.06.2020 15:42		



Certificate of Analytical Results 679810

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit 139

Sample Id: **SP-4 10'**
Lab Sample Id: 679810-002

Matrix: Soil
Date Collected: 12.02.2020 12:35

Date Received: 12.04.2020 10:05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 12.04.2020 16:00

% Moisture:
Basis: Wet Weight

Seq Number: 3144018

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.05.2020 06:41	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.05.2020 06:41	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.05.2020 06:41	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	12.05.2020 06:41	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.05.2020 06:41	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/kg	12.05.2020 06:41	U	1
Total BTEX		<0.002000	0.002000	mg/kg	12.05.2020 06:41	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	89	%	70-130	12.05.2020 06:41		
4-Bromofluorobenzene	460-00-4	96	%	70-130	12.05.2020 06:41		

**Certificate of Analytical Results 679810****Larson and Associates, Inc., Midland, TX**

Central Vacuum Unit 139

Sample Id: **SP-4 15'**
Lab Sample Id: 679810-003

Matrix: Soil
Date Collected: 12.02.2020 12:37

Date Received: 12.04.2020 10:05

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.04.2020 16:05

% Moisture:
Basis: Wet Weight

Seq Number: 3144040

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	11.1	5.00	mg/kg	12.04.2020 20:55		1

**Certificate of Analytical Results 679810****Larson and Associates, Inc., Midland, TX**

Central Vacuum Unit 139

Sample Id: **SP-4 20'**
Lab Sample Id: 679810-004

Matrix: Soil
Date Collected: 12.02.2020 12:40

Date Received: 12.04.2020 10:05

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.04.2020 16:05

% Moisture:
Basis: Wet Weight

Seq Number: 3144040

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12.5	5.04	mg/kg	12.04.2020 21:11		1



Certificate of Analytical Results 679810

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit 139

Sample Id: **SP-10 5'**
Lab Sample Id: 679810-005

Matrix: Soil
Date Collected: 12.02.2020 13:13

Date Received: 12.04.2020 10:05

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.04.2020 16:05

% Moisture:
Basis: Wet Weight

Seq Number: 3144040

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2150	24.9	mg/kg	12.04.2020 21:17		5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 12.06.2020 10:00

% Moisture:
Basis: Wet Weight

Seq Number: 3144079

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.06.2020 16:04	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	12.06.2020 16:04	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.06.2020 16:04	U	1
Total TPH	PHC635	<49.90	49.90	mg/kg	12.06.2020 16:04	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	107	%	70-130	12.06.2020 16:04		
o-Terphenyl	84-15-1	113	%	70-130	12.06.2020 16:04		



Certificate of Analytical Results 679810

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit 139

Sample Id: **SP-10 5'**
Lab Sample Id: 679810-005

Matrix: Soil
Date Collected: 12.02.2020 13:13

Date Received: 12.04.2020 10:05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 12.04.2020 16:00

% Moisture:
Basis: Wet Weight

Seq Number: 3144018

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.05.2020 07:02	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.05.2020 07:02	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.05.2020 07:02	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	12.05.2020 07:02	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.05.2020 07:02	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/kg	12.05.2020 07:02	U	1
Total BTEX		<0.002000	0.002000	mg/kg	12.05.2020 07:02	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	89	%	70-130	12.05.2020 07:02		
4-Bromofluorobenzene	460-00-4	95	%	70-130	12.05.2020 07:02		



Certificate of Analytical Results 679810

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit 139

Sample Id: **SP-10 10'**

Matrix: Soil

Date Received: 12.04.2020 10:05

Lab Sample Id: 679810-006

Date Collected: 12.02.2020 13:16

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.04.2020 16:05

% Moisture:

Seq Number: 3144040

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1530	25.0	mg/kg	12.04.2020 21:32		5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 12.06.2020 10:00

% Moisture:

Seq Number: 3144079

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	12.06.2020 16:26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	12.06.2020 16:26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	12.06.2020 16:26	U	1
Total TPH	PHC635	<49.80	49.80	mg/kg	12.06.2020 16:26	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	106	%	70-130	12.06.2020 16:26		
o-Terphenyl	84-15-1	112	%	70-130	12.06.2020 16:26		



Certificate of Analytical Results 679810

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit 139

Sample Id: **SP-10 10'**
Lab Sample Id: 679810-006

Matrix: Soil
Date Collected: 12.02.2020 13:16

Date Received: 12.04.2020 10:05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 12.04.2020 16:00

% Moisture:
Basis: Wet Weight

Seq Number: 3144018

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	12.05.2020 07:22	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	12.05.2020 07:22	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	12.05.2020 07:22	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	12.05.2020 07:22	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	12.05.2020 07:22	U	1
Total Xylenes	1330-20-7	<0.001990	0.001990	mg/kg	12.05.2020 07:22	U	1
Total BTEX		<0.001990	0.001990	mg/kg	12.05.2020 07:22	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	98	%	70-130	12.05.2020 07:22		
1,4-Difluorobenzene	540-36-3	91	%	70-130	12.05.2020 07:22		

**Certificate of Analytical Results 679810****Larson and Associates, Inc., Midland, TX**

Central Vacuum Unit 139

Sample Id: **SP-10 15'**
Lab Sample Id: 679810-007

Matrix: Soil
Date Collected: 12.02.2020 13:18

Date Received: 12.04.2020 10:05

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.04.2020 16:05

% Moisture:
Basis: Wet Weight

Seq Number: 3144040

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1980	24.8	mg/kg	12.04.2020 21:38		5

**Certificate of Analytical Results 679810****Larson and Associates, Inc., Midland, TX**

Central Vacuum Unit 139

Sample Id: **SP-10 20'**

Matrix: Soil

Date Received: 12.04.2020 10:05

Lab Sample Id: 679810-008

Date Collected: 12.02.2020 13:20

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.04.2020 16:05

% Moisture:

Seq Number: 3144040

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1950	24.8	mg/kg	12.04.2020 21:43		5

**Certificate of Analytical Results 679810****Larson and Associates, Inc., Midland, TX**

Central Vacuum Unit 139

Sample Id: **SP-10 25'**

Matrix: Soil

Date Received: 12.04.2020 10:05

Lab Sample Id: 679810-009

Date Collected: 12.02.2020 14:00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.04.2020 16:05

% Moisture:

Seq Number: 3144040

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1290	4.95	mg/kg	12.04.2020 21:48		1

**Certificate of Analytical Results 679810****Larson and Associates, Inc., Midland, TX**

Central Vacuum Unit 139

Sample Id: **SP-10 30'**

Matrix: Soil

Date Received: 12.04.2020 10:05

Lab Sample Id: 679810-010

Date Collected: 12.02.2020 14:05

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.04.2020 16:05

% Moisture:

Seq Number: 3144040

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1140	4.95	mg/kg	12.04.2020 21:53		1

**Certificate of Analytical Results 679810****Larson and Associates, Inc., Midland, TX**

Central Vacuum Unit 139

Sample Id: **SP-10 35'**
Lab Sample Id: 679810-011

Matrix: Soil
Date Collected: 12.02.2020 14:30

Date Received: 12.04.2020 10:05

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.04.2020 16:05

% Moisture:
Basis: Wet Weight

Seq Number: 3144040

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	380	5.04	mg/kg	12.04.2020 21:59		1

**Certificate of Analytical Results 679810****Larson and Associates, Inc., Midland, TX**

Central Vacuum Unit 139

Sample Id: **SP-10 40'**
Lab Sample Id: 679810-012

Matrix: Soil
Date Collected: 12.02.2020 14:38

Date Received: 12.04.2020 10:05

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.04.2020 16:05

% Moisture:
Basis: Wet Weight

Seq Number: 3144040

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	281	5.01	mg/kg	12.04.2020 22:04		1



Certificate of Analytical Results 679810

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit 139

Sample Id: **SP-2 5'**
Lab Sample Id: 679810-013

Matrix: Soil
Date Collected: 12.03.2020 08:37

Date Received: 12.04.2020 10:05

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.04.2020 16:23

% Moisture:
Basis: Wet Weight

Seq Number: 3144041

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	697	5.05	mg/kg	12.04.2020 22:36	X	1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 12.06.2020 10:00

% Moisture:
Basis: Wet Weight

Seq Number: 3144079

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.06.2020 16:49	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.06.2020 16:49	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.06.2020 16:49	U	1
Total TPH	PHC635	<50.00	50.00	mg/kg	12.06.2020 16:49	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	108	%	70-130	12.06.2020 16:49		
o-Terphenyl	84-15-1	113	%	70-130	12.06.2020 16:49		



Certificate of Analytical Results 679810

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit 139

Sample Id: **SP-2 5'**
Lab Sample Id: 679810-013

Matrix: Soil
Date Collected: 12.03.2020 08:37

Date Received: 12.04.2020 10:05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 12.04.2020 16:00

% Moisture:
Basis: Wet Weight

Seq Number: 3144018

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	12.05.2020 07:43	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	12.05.2020 07:43	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	12.05.2020 07:43	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	12.05.2020 07:43	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	12.05.2020 07:43	U	1
Total Xylenes	1330-20-7	<0.002010	0.002010	mg/kg	12.05.2020 07:43	U	1
Total BTEX		<0.002010	0.002010	mg/kg	12.05.2020 07:43	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	90	%	70-130	12.05.2020 07:43		
4-Bromofluorobenzene	460-00-4	94	%	70-130	12.05.2020 07:43		



Certificate of Analytical Results 679810

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit 139

Sample Id: **SP-2 10'**
Lab Sample Id: 679810-014

Matrix: Soil
Date Collected: 12.03.2020 08:41

Date Received: 12.04.2020 10:05

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.04.2020 16:23

% Moisture:
Basis: Wet Weight

Seq Number: 3144041

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	77.1	4.96	mg/kg	12.04.2020 22:51		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 12.06.2020 10:00

% Moisture:
Basis: Wet Weight

Seq Number: 3144079

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.06.2020 17:11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	12.06.2020 17:11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.06.2020 17:11	U	1
Total TPH	PHC635	<49.90	49.90	mg/kg	12.06.2020 17:11	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	110	%	70-130	12.06.2020 17:11		
o-Terphenyl	84-15-1	117	%	70-130	12.06.2020 17:11		



Certificate of Analytical Results 679810

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit 139

Sample Id: **SP-2 10'**
Lab Sample Id: 679810-014

Matrix: Soil
Date Collected: 12.03.2020 08:41

Date Received: 12.04.2020 10:05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 12.04.2020 16:00

% Moisture:
Basis: Wet Weight

Seq Number: 3144018

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	12.05.2020 08:04	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	12.05.2020 08:04	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	12.05.2020 08:04	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	12.05.2020 08:04	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	12.05.2020 08:04	U	1
Total Xylenes	1330-20-7	<0.002010	0.002010	mg/kg	12.05.2020 08:04	U	1
Total BTEX		<0.002010	0.002010	mg/kg	12.05.2020 08:04	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	95	%	70-130	12.05.2020 08:04		
1,4-Difluorobenzene	540-36-3	89	%	70-130	12.05.2020 08:04		



Certificate of Analytical Results 679810

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit 139

Sample Id: **SP-2 15'**
Lab Sample Id: 679810-015

Matrix: Soil
Date Collected: 12.03.2020 08:43

Date Received: 12.04.2020 10:05

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.04.2020 16:23

% Moisture:
Basis: Wet Weight

Seq Number: 3144041

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	226	5.00	mg/kg	12.04.2020 22:57		1

**Certificate of Analytical Results 679810****Larson and Associates, Inc., Midland, TX**

Central Vacuum Unit 139

Sample Id: **SP-2 20'**
Lab Sample Id: 679810-016

Matrix: Soil
Date Collected: 12.03.2020 08:46

Date Received: 12.04.2020 10:05

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.04.2020 16:23

% Moisture:
Basis: Wet Weight

Seq Number: 3144041

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	40.2	5.04	mg/kg	12.04.2020 23:02		1



Certificate of Analytical Results 679810

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit 139

Sample Id: **SP-3 5'**
Lab Sample Id: 679810-017

Matrix: Soil
Date Collected: 12.03.2020 09:13

Date Received: 12.04.2020 10:05

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.04.2020 16:23

% Moisture:
Basis: Wet Weight

Seq Number: 3144041

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1160	4.98	mg/kg	12.04.2020 23:07		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 12.06.2020 10:00

% Moisture:
Basis: Wet Weight

Seq Number: 3144079

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.06.2020 17:33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	12.06.2020 17:33	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.06.2020 17:33	U	1
Total TPH	PHC635	<49.90	49.90	mg/kg	12.06.2020 17:33	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	129	%	70-130	12.06.2020 17:33		
o-Terphenyl	84-15-1	139	%	70-130	12.06.2020 17:33	**	



Certificate of Analytical Results 679810

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit 139

Sample Id: **SP-3 5'**
Lab Sample Id: 679810-017

Matrix: Soil
Date Collected: 12.03.2020 09:13

Date Received: 12.04.2020 10:05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 12.04.2020 16:00

% Moisture:
Basis: Wet Weight

Seq Number: 3144018

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	12.05.2020 08:24	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	12.05.2020 08:24	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	12.05.2020 08:24	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	12.05.2020 08:24	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	12.05.2020 08:24	U	1
Total Xylenes	1330-20-7	<0.002020	0.002020	mg/kg	12.05.2020 08:24	U	1
Total BTEX		<0.002020	0.002020	mg/kg	12.05.2020 08:24	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	89	%	70-130	12.05.2020 08:24		
4-Bromofluorobenzene	460-00-4	99	%	70-130	12.05.2020 08:24		



Certificate of Analytical Results 679810

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit 139

Sample Id: **SP-3 10'**
Lab Sample Id: 679810-018

Matrix: Soil
Date Collected: 12.03.2020 09:16

Date Received: 12.04.2020 10:05

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.04.2020 16:23

% Moisture:
Basis: Wet Weight

Seq Number: 3144041

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	813	4.99	mg/kg	12.04.2020 23:23		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 12.06.2020 10:00

% Moisture:
Basis: Wet Weight

Seq Number: 3144079

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.06.2020 17:55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.06.2020 17:55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.06.2020 17:55	U	1
Total TPH	PHC635	<50.00	50.00	mg/kg	12.06.2020 17:55	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	113	%	70-130	12.06.2020 17:55		
o-Terphenyl	84-15-1	118	%	70-130	12.06.2020 17:55		



Certificate of Analytical Results 679810

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit 139

Sample Id: **SP-3 10'**
Lab Sample Id: 679810-018

Matrix: Soil
Date Collected: 12.03.2020 09:16

Date Received: 12.04.2020 10:05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 12.04.2020 16:00

% Moisture:
Basis: Wet Weight

Seq Number: 3144018

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.05.2020 08:45	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.05.2020 08:45	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.05.2020 08:45	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	12.05.2020 08:45	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.05.2020 08:45	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/kg	12.05.2020 08:45	U	1
Total BTEX		<0.002000	0.002000	mg/kg	12.05.2020 08:45	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	100	%	70-130	12.05.2020 08:45		
1,4-Difluorobenzene	540-36-3	89	%	70-130	12.05.2020 08:45		

**Certificate of Analytical Results 679810****Larson and Associates, Inc., Midland, TX**

Central Vacuum Unit 139

Sample Id: **SP-3 15'**
Lab Sample Id: 679810-019

Matrix: Soil
Date Collected: 12.03.2020 09:17

Date Received: 12.04.2020 10:05

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.04.2020 16:23

% Moisture:
Basis: Wet Weight

Seq Number: 3144041

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	556	5.03	mg/kg	12.04.2020 23:28		1

**Certificate of Analytical Results 679810****Larson and Associates, Inc., Midland, TX**

Central Vacuum Unit 139

Sample Id: **SP-3 20'**
Lab Sample Id: 679810-020

Matrix: Soil
Date Collected: 12.03.2020 09:19

Date Received: 12.04.2020 10:05

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.04.2020 16:23

% Moisture:
Basis: Wet Weight

Seq Number: 3144041

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	139	4.95	mg/kg	12.04.2020 23:34		1



Certificate of Analytical Results 679810

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit 139

Sample Id: **SP-5 5'**
Lab Sample Id: 679810-021

Matrix: Soil
Date Collected: 12.03.2020 09:56

Date Received: 12.04.2020 10:05

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.04.2020 16:23

% Moisture:
Basis: Wet Weight

Seq Number: 3144041

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1940	25.2	mg/kg	12.04.2020 23:39		5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 12.06.2020 10:00

% Moisture:
Basis: Wet Weight

Seq Number: 3144079

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.06.2020 18:18	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	12.06.2020 18:18	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.06.2020 18:18	U	1
Total TPH	PHC635	<49.90	49.90	mg/kg	12.06.2020 18:18	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	104	%	70-130	12.06.2020 18:18		
o-Terphenyl	84-15-1	107	%	70-130	12.06.2020 18:18		



Certificate of Analytical Results 679810

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit 139

Sample Id: **SP-5 5'**
Lab Sample Id: 679810-021

Matrix: Soil
Date Collected: 12.03.2020 09:56

Date Received: 12.04.2020 10:05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 12.04.2020 16:00

% Moisture:
Basis: Wet Weight

Seq Number: 3144018

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.05.2020 09:05	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.05.2020 09:05	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.05.2020 09:05	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	12.05.2020 09:05	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.05.2020 09:05	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/kg	12.05.2020 09:05	U	1
Total BTEX		<0.002000	0.002000	mg/kg	12.05.2020 09:05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	88	%	70-130	12.05.2020 09:05	
4-Bromofluorobenzene	460-00-4	94	%	70-130	12.05.2020 09:05	



Certificate of Analytical Results 679810

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit 139

Sample Id: **SP-5 10'**
Lab Sample Id: 679810-022

Matrix: Soil
Date Collected: 12.03.2020 10:00

Date Received: 12.04.2020 10:05

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.04.2020 16:23

% Moisture:
Basis: Wet Weight

Seq Number: 3144041

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3730	24.9	mg/kg	12.04.2020 23:44		5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 12.06.2020 10:00

% Moisture:
Basis: Wet Weight

Seq Number: 3144079

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	12.06.2020 18:40	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	12.06.2020 18:40	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	12.06.2020 18:40	U	1
Total TPH	PHC635	<49.80	49.80	mg/kg	12.06.2020 18:40	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-130	12.06.2020 18:40	
o-Terphenyl	84-15-1	112	%	70-130	12.06.2020 18:40	



Certificate of Analytical Results 679810

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit 139

Sample Id: **SP-5 10'**
Lab Sample Id: 679810-022

Matrix: Soil
Date Collected: 12.03.2020 10:00

Date Received: 12.04.2020 10:05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 12.04.2020 16:00

% Moisture:
Basis: Wet Weight

Seq Number: 3144018

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	12.05.2020 10:29	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	12.05.2020 10:29	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	12.05.2020 10:29	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	12.05.2020 10:29	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	12.05.2020 10:29	U	1
Total Xylenes	1330-20-7	<0.002010	0.002010	mg/kg	12.05.2020 10:29	U	1
Total BTEX		<0.002010	0.002010	mg/kg	12.05.2020 10:29	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	85	%	70-130	12.05.2020 10:29		
1,4-Difluorobenzene	540-36-3	90	%	70-130	12.05.2020 10:29		

**Certificate of Analytical Results 679810****Larson and Associates, Inc., Midland, TX**

Central Vacuum Unit 139

Sample Id: **SP-5 15'**
Lab Sample Id: 679810-023

Matrix: Soil
Date Collected: 12.03.2020 10:01

Date Received: 12.04.2020 10:05

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.04.2020 16:23

% Moisture:
Basis: Wet Weight

Seq Number: 3144041

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2810	25.3	mg/kg	12.04.2020 23:49		5

**Certificate of Analytical Results 679810****Larson and Associates, Inc., Midland, TX**

Central Vacuum Unit 139

Sample Id: **SP-5 20'**
Lab Sample Id: 679810-024

Matrix: Soil
Date Collected: 12.03.2020 10:04

Date Received: 12.04.2020 10:05

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.04.2020 16:23

% Moisture:
Basis: Wet Weight

Seq Number: 3144041

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1410	24.8	mg/kg	12.05.2020 00:05		5

**Certificate of Analytical Results 679810****Larson and Associates, Inc., Midland, TX**

Central Vacuum Unit 139

Sample Id: **SP-5 25'**
Lab Sample Id: 679810-025

Matrix: Soil
Date Collected: 12.03.2020 10:28

Date Received: 12.04.2020 10:05

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.04.2020 16:23

% Moisture:
Basis: Wet Weight

Seq Number: 3144041

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	54.9	5.03	mg/kg	12.05.2020 00:10		1



Certificate of Analytical Results 679810

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit 139

Sample Id: **SP-9 5'**
Lab Sample Id: 679810-026

Matrix: Soil
Date Collected: 12.03.2020 10:54

Date Received: 12.04.2020 10:05

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.04.2020 16:23

% Moisture:
Basis: Wet Weight

Seq Number: 3144041

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	962	4.98	mg/kg	12.05.2020 00:26		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 12.06.2020 10:00

% Moisture:
Basis: Wet Weight

Seq Number: 3144079

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.06.2020 19:25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.06.2020 19:25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.06.2020 19:25	U	1
Total TPH	PHC635	<50.00	50.00	mg/kg	12.06.2020 19:25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-130	12.06.2020 19:25	
o-Terphenyl	84-15-1	121	%	70-130	12.06.2020 19:25	



Certificate of Analytical Results 679810

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit 139

Sample Id: **SP-9 5'**
Lab Sample Id: 679810-026

Matrix: Soil
Date Collected: 12.03.2020 10:54

Date Received: 12.04.2020 10:05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 12.04.2020 16:00

% Moisture:
Basis: Wet Weight

Seq Number: 3144018

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	12.05.2020 10:49	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	12.05.2020 10:49	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	12.05.2020 10:49	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	12.05.2020 10:49	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	12.05.2020 10:49	U	1
Total Xylenes	1330-20-7	<0.001990	0.001990	mg/kg	12.05.2020 10:49	U	1
Total BTEX		<0.001990	0.001990	mg/kg	12.05.2020 10:49	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	91	%	70-130	12.05.2020 10:49		
4-Bromofluorobenzene	460-00-4	92	%	70-130	12.05.2020 10:49		



Certificate of Analytical Results 679810

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit 139

Sample Id: **SP-9 10'**
Lab Sample Id: 679810-027

Matrix: Soil
Date Collected: 12.03.2020 11:00

Date Received: 12.04.2020 10:05

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.04.2020 16:23

% Moisture:
Basis: Wet Weight

Seq Number: 3144041

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	183	4.96	mg/kg	12.05.2020 00:32		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 12.06.2020 10:00

% Moisture:
Basis: Wet Weight

Seq Number: 3144079

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.06.2020 19:47	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.06.2020 19:47	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.06.2020 19:47	U	1
Total TPH	PHC635	<50.00	50.00	mg/kg	12.06.2020 19:47	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	116	%	70-130	12.06.2020 19:47		
o-Terphenyl	84-15-1	123	%	70-130	12.06.2020 19:47		



Certificate of Analytical Results 679810

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit 139

Sample Id: **SP-9 10'**
Lab Sample Id: 679810-027

Matrix: Soil
Date Collected: 12.03.2020 11:00

Date Received: 12.04.2020 10:05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 12.04.2020 16:00

% Moisture:
Basis: Wet Weight

Seq Number: 3144018

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	12.05.2020 11:10	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	12.05.2020 11:10	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	12.05.2020 11:10	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	12.05.2020 11:10	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	12.05.2020 11:10	U	1
Total Xylenes	1330-20-7	<0.001980	0.001980	mg/kg	12.05.2020 11:10	U	1
Total BTEX		<0.001980	0.001980	mg/kg	12.05.2020 11:10	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	90	%	70-130	12.05.2020 11:10		
4-Bromofluorobenzene	460-00-4	98	%	70-130	12.05.2020 11:10		

**Certificate of Analytical Results 679810****Larson and Associates, Inc., Midland, TX**

Central Vacuum Unit 139

Sample Id: **SP-9 15'**
Lab Sample Id: 679810-028

Matrix: Soil
Date Collected: 12.03.2020 11:01

Date Received: 12.04.2020 10:05

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.04.2020 16:23

% Moisture:
Basis: Wet Weight

Seq Number: 3144041

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	236	5.00	mg/kg	12.05.2020 00:37		1

**Certificate of Analytical Results 679810****Larson and Associates, Inc., Midland, TX**

Central Vacuum Unit 139

Sample Id: **SP-9 20'**
Lab Sample Id: 679810-029

Matrix: Soil
Date Collected: 12.03.2020 11:02

Date Received: 12.04.2020 10:05

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.04.2020 16:23

% Moisture:
Basis: Wet Weight

Seq Number: 3144041

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	132	5.00	mg/kg	12.05.2020 00:42		1



Certificate of Analytical Results 679810

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit 139

Sample Id: **SP-8 5'**
Lab Sample Id: 679810-030

Matrix: Soil
Date Collected: 12.03.2020 11:27

Date Received: 12.04.2020 10:05

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.04.2020 16:23

% Moisture:
Basis: Wet Weight

Seq Number: 3144041

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	501	5.00	mg/kg	12.05.2020 00:47		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 12.06.2020 10:00

% Moisture:
Basis: Wet Weight

Seq Number: 3144079

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.06.2020 20:10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	12.06.2020 20:10	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.06.2020 20:10	U	1
Total TPH	PHC635	<49.90	49.90	mg/kg	12.06.2020 20:10	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	111	%	70-130	12.06.2020 20:10		
o-Terphenyl	84-15-1	119	%	70-130	12.06.2020 20:10		



Certificate of Analytical Results 679810

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit 139

Sample Id: **SP-8 5'**
Lab Sample Id: 679810-030

Matrix: Soil
Date Collected: 12.03.2020 11:27

Date Received: 12.04.2020 10:05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 12.04.2020 16:00

% Moisture:
Basis: Wet Weight

Seq Number: 3144018

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	12.05.2020 11:30	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	12.05.2020 11:30	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	12.05.2020 11:30	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	12.05.2020 11:30	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	12.05.2020 11:30	U	1
Total Xylenes	1330-20-7	<0.001980	0.001980	mg/kg	12.05.2020 11:30	U	1
Total BTEX		<0.001980	0.001980	mg/kg	12.05.2020 11:30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	95	%	70-130	12.05.2020 11:30	
1,4-Difluorobenzene	540-36-3	93	%	70-130	12.05.2020 11:30	



Certificate of Analytical Results 679810

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit 139

Sample Id: **SP-8 10'**
Lab Sample Id: 679810-031

Matrix: Soil
Date Collected: 12.03.2020 11:29

Date Received: 12.04.2020 10:05

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.04.2020 16:23

% Moisture:
Basis: Wet Weight

Seq Number: 3144041

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	558	5.00	mg/kg	12.05.2020 00:53		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 12.06.2020 10:00

% Moisture:
Basis: Wet Weight

Seq Number: 3144079

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.06.2020 20:32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.06.2020 20:32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.06.2020 20:32	U	1
Total TPH	PHC635	<50.00	50.00	mg/kg	12.06.2020 20:32	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	122	%	70-130	12.06.2020 20:32		
o-Terphenyl	84-15-1	129	%	70-130	12.06.2020 20:32		



Certificate of Analytical Results 679810

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit 139

Sample Id: **SP-8 10'**
Lab Sample Id: 679810-031

Matrix: Soil
Date Collected: 12.03.2020 11:29

Date Received: 12.04.2020 10:05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 12.04.2020 16:00

% Moisture:
Basis: Wet Weight

Seq Number: 3144018

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	12.05.2020 11:51	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	12.05.2020 11:51	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	12.05.2020 11:51	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	12.05.2020 11:51	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	12.05.2020 11:51	U	1
Total Xylenes	1330-20-7	<0.001980	0.001980	mg/kg	12.05.2020 11:51	U	1
Total BTEX		<0.001980	0.001980	mg/kg	12.05.2020 11:51	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	92	%	70-130	12.05.2020 11:51		
1,4-Difluorobenzene	540-36-3	89	%	70-130	12.05.2020 11:51		

**Certificate of Analytical Results 679810****Larson and Associates, Inc., Midland, TX**

Central Vacuum Unit 139

Sample Id: **SP-8 15'**
Lab Sample Id: 679810-032

Matrix: Soil
Date Collected: 12.03.2020 11:32

Date Received: 12.04.2020 10:05

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.04.2020 16:23

% Moisture:
Basis: Wet Weight

Seq Number: 3144041

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	970	5.05	mg/kg	12.05.2020 00:58		1

**Certificate of Analytical Results 679810****Larson and Associates, Inc., Midland, TX**

Central Vacuum Unit 139

Sample Id: **SP-8 20'**
Lab Sample Id: 679810-033

Matrix: Soil
Date Collected: 12.03.2020 11:33

Date Received: 12.04.2020 10:05

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.04.2020 16:35

% Moisture:
Basis: Wet Weight

Seq Number: 3144043

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	707	5.04	mg/kg	12.04.2020 17:09		1

**Certificate of Analytical Results 679810****Larson and Associates, Inc., Midland, TX**

Central Vacuum Unit 139

Sample Id: **SP-8 25'**
Lab Sample Id: 679810-034

Matrix: Soil
Date Collected: 12.03.2020 11:53

Date Received: 12.04.2020 10:05

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.04.2020 16:35

% Moisture:
Basis: Wet Weight

Seq Number: 3144043

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	183	4.96	mg/kg	12.04.2020 17:31		1



Certificate of Analytical Results 679810

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit 139

Sample Id: **SP-7 5'**
Lab Sample Id: 679810-035

Matrix: Soil
Date Collected: 12.03.2020 12:12

Date Received: 12.04.2020 10:05

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.04.2020 16:35

% Moisture:
Basis: Wet Weight

Seq Number: 3144043

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1040	4.99	mg/kg	12.04.2020 17:39		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 12.06.2020 10:00

% Moisture:
Basis: Wet Weight

Seq Number: 3144079

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.06.2020 21:22	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	12.06.2020 21:22	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.06.2020 21:22	U	1
Total TPH	PHC635	<49.90	49.90	mg/kg	12.06.2020 21:22	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	97	%	70-130	12.06.2020 21:22		
o-Terphenyl	84-15-1	103	%	70-130	12.06.2020 21:22		



Certificate of Analytical Results 679810

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit 139

Sample Id: **SP-7 5'**
Lab Sample Id: 679810-035

Matrix: Soil
Date Collected: 12.03.2020 12:12

Date Received: 12.04.2020 10:05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 12.04.2020 16:00

% Moisture:
Basis: Wet Weight

Seq Number: 3144018

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.05.2020 12:12	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.05.2020 12:12	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.05.2020 12:12	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	12.05.2020 12:12	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.05.2020 12:12	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/kg	12.05.2020 12:12	U	1
Total BTEX		<0.002000	0.002000	mg/kg	12.05.2020 12:12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	89	%	70-130	12.05.2020 12:12	
4-Bromofluorobenzene	460-00-4	92	%	70-130	12.05.2020 12:12	



Certificate of Analytical Results 679810

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit 139

Sample Id: **SP-7 10'**
Lab Sample Id: 679810-036

Matrix: Soil
Date Collected: 12.03.2020 12:14

Date Received: 12.04.2020 10:05

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.04.2020 16:35

% Moisture:
Basis: Wet Weight

Seq Number: 3144043

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	221	5.05	mg/kg	12.04.2020 17:46		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 12.06.2020 10:00

% Moisture:
Basis: Wet Weight

Seq Number: 3144079

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	12.06.2020 21:44	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	12.06.2020 21:44	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	12.06.2020 21:44	U	1
Total TPH	PHC635	<49.80	49.80	mg/kg	12.06.2020 21:44	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	102	%	70-130	12.06.2020 21:44		
o-Terphenyl	84-15-1	106	%	70-130	12.06.2020 21:44		



Certificate of Analytical Results 679810

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit 139

Sample Id: **SP-7 10'**
Lab Sample Id: 679810-036

Matrix: Soil
Date Collected: 12.03.2020 12:14

Date Received: 12.04.2020 10:05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 12.04.2020 16:00

% Moisture:
Basis: Wet Weight

Seq Number: 3144018

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	12.05.2020 12:32	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	12.05.2020 12:32	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	12.05.2020 12:32	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	12.05.2020 12:32	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	12.05.2020 12:32	U	1
Total Xylenes	1330-20-7	<0.002010	0.002010	mg/kg	12.05.2020 12:32	U	1
Total BTEX		<0.002010	0.002010	mg/kg	12.05.2020 12:32	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	87	%	70-130	12.05.2020 12:32		
4-Bromofluorobenzene	460-00-4	92	%	70-130	12.05.2020 12:32		

**Certificate of Analytical Results 679810****Larson and Associates, Inc., Midland, TX**

Central Vacuum Unit 139

Sample Id: **SP-7 15'**
Lab Sample Id: 679810-037

Matrix: Soil
Date Collected: 12.03.2020 12:17

Date Received: 12.04.2020 10:05

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.04.2020 16:35

% Moisture:
Basis: Wet Weight

Seq Number: 3144043

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	127	4.96	mg/kg	12.04.2020 17:53		1

**Certificate of Analytical Results 679810****Larson and Associates, Inc., Midland, TX**

Central Vacuum Unit 139

Sample Id: **SP-7 20'**
Lab Sample Id: 679810-038

Matrix: Soil
Date Collected: 12.03.2020 12:18

Date Received: 12.04.2020 10:05

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.04.2020 16:35

% Moisture:
Basis: Wet Weight

Seq Number: 3144043

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	79.6	4.99	mg/kg	12.04.2020 18:15		1



Certificate of Analytical Results 679810

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit 139

Sample Id: **SP-6 5'**
Lab Sample Id: 679810-039

Matrix: Soil
Date Collected: 12.03.2020 12:38

Date Received: 12.04.2020 10:05

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.04.2020 16:35

% Moisture:
Basis: Wet Weight

Seq Number: 3144043

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	549	5.00	mg/kg	12.04.2020 18:23		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 12.06.2020 10:00

% Moisture:
Basis: Wet Weight

Seq Number: 3144079

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.06.2020 22:07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.06.2020 22:07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.06.2020 22:07	U	1
Total TPH	PHC635	<50.00	50.00	mg/kg	12.06.2020 22:07	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	95	%	70-130	12.06.2020 22:07		
o-Terphenyl	84-15-1	100	%	70-130	12.06.2020 22:07		



Certificate of Analytical Results 679810

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit 139

Sample Id: **SP-6 5'**
Lab Sample Id: 679810-039

Matrix: Soil
Date Collected: 12.03.2020 12:38

Date Received: 12.04.2020 10:05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 12.04.2020 16:00

% Moisture:
Basis: Wet Weight

Seq Number: 3144018

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	12.05.2020 12:53	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	12.05.2020 12:53	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	12.05.2020 12:53	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	12.05.2020 12:53	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	12.05.2020 12:53	U	1
Total Xylenes	1330-20-7	<0.002020	0.002020	mg/kg	12.05.2020 12:53	U	1
Total BTEX		<0.002020	0.002020	mg/kg	12.05.2020 12:53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	90	%	70-130	12.05.2020 12:53	
4-Bromofluorobenzene	460-00-4	94	%	70-130	12.05.2020 12:53	



Certificate of Analytical Results 679810

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit 139

Sample Id: **SP-6 10'**
Lab Sample Id: 679810-040

Matrix: Soil
Date Collected: 12.03.2020 12:40

Date Received: 12.04.2020 10:05

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.04.2020 16:35

% Moisture:
Basis: Wet Weight

Seq Number: 3144043

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	231	5.03	mg/kg	12.04.2020 18:30		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 12.06.2020 10:00

% Moisture:
Basis: Wet Weight

Seq Number: 3144079

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.06.2020 22:30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.06.2020 22:30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.06.2020 22:30	U	1
Total TPH	PHC635	<50.00	50.00	mg/kg	12.06.2020 22:30	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	99	%	70-130	12.06.2020 22:30		
o-Terphenyl	84-15-1	103	%	70-130	12.06.2020 22:30		



Certificate of Analytical Results 679810

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit 139

Sample Id: **SP-6 10'**
Lab Sample Id: 679810-040

Matrix: Soil
Date Collected: 12.03.2020 12:40

Date Received: 12.04.2020 10:05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 12.04.2020 16:00

% Moisture:
Basis: Wet Weight

Seq Number: 3144018

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	12.05.2020 13:14	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	12.05.2020 13:14	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	12.05.2020 13:14	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	12.05.2020 13:14	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	12.05.2020 13:14	U	1
Total Xylenes	1330-20-7	<0.001980	0.001980	mg/kg	12.05.2020 13:14	U	1
Total BTEX		<0.001980	0.001980	mg/kg	12.05.2020 13:14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	94	%	70-130	12.05.2020 13:14	
1,4-Difluorobenzene	540-36-3	89	%	70-130	12.05.2020 13:14	

**Certificate of Analytical Results 679810****Larson and Associates, Inc., Midland, TX**

Central Vacuum Unit 139

Sample Id: **SP-6 15'**
Lab Sample Id: 679810-041

Matrix: Soil
Date Collected: 12.03.2020 12:43

Date Received: 12.04.2020 10:05

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.04.2020 16:35

% Moisture:
Basis: Wet Weight

Seq Number: 3144043

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	245	5.00	mg/kg	12.04.2020 18:37		1



Certificate of Analytical Results 679810

Larson and Associates, Inc., Midland, TX

Central Vacuum Unit 139

Sample Id: **SP-6 20'**
Lab Sample Id: 679810-042

Matrix: Soil
Date Collected: 12.03.2020 12:45

Date Received: 12.04.2020 10:05

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.04.2020 16:35

% Moisture:
Basis: Wet Weight

Seq Number: 3144043

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	316	5.02	mg/kg	12.04.2020 18:45		1

**Certificate of Analytical Results 679810****Larson and Associates, Inc., Midland, TX**

Central Vacuum Unit 139

Sample Id: **SP-6 25'**
Lab Sample Id: 679810-043

Matrix: Soil
Date Collected: 12.03.2020 13:13

Date Received: 12.04.2020 10:05

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.04.2020 16:35

% Moisture:
Basis: Wet Weight

Seq Number: 3144043

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	14.4	4.95	mg/kg	12.04.2020 18:52	X	1

Flagging Criteria

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

** Surrogate recovered outside laboratory control limit.

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

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



Larson and Associates, Inc.
Central Vacuum Unit 139

Analytical Method: Chloride by EPA 300

Seq Number: 3144040

MB Sample Id: 7716446-1-BLK

Matrix: Solid

LCS Sample Id: 7716446-1-BKS

Prep Method: E300P

Date Prep: 12.04.2020

LCSD Sample Id: 7716446-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	255	102	253	101	90-110	1	20	mg/kg	12.04.2020 19:31	

Analytical Method: Chloride by EPA 300

Seq Number: 3144041

MB Sample Id: 7716448-1-BLK

Matrix: Solid

LCS Sample Id: 7716448-1-BKS

Prep Method: E300P

Date Prep: 12.04.2020

LCSD Sample Id: 7716448-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	255	102	256	102	90-110	0	20	mg/kg	12.04.2020 22:25	

Analytical Method: Chloride by EPA 300

Seq Number: 3144043

MB Sample Id: 7716452-1-BLK

Matrix: Solid

LCS Sample Id: 7716452-1-BKS

Prep Method: E300P

Date Prep: 12.04.2020

LCSD Sample Id: 7716452-1-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	259	104	259	104	90-110	0	20	mg/kg	12.04.2020 16:55	

Analytical Method: Chloride by EPA 300

Seq Number: 3144040

Parent Sample Id: 679799-023

Matrix: Soil

MS Sample Id: 679799-023 S

Prep Method: E300P

Date Prep: 12.04.2020

MSD Sample Id: 679799-023 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	16.0	250	272	102	272	102	90-110	0	20	mg/kg	12.04.2020 19:47	

Analytical Method: Chloride by EPA 300

Seq Number: 3144040

Parent Sample Id: 679810-003

Matrix: Soil

MS Sample Id: 679810-003 S

Prep Method: E300P

Date Prep: 12.04.2020

MSD Sample Id: 679810-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	11.1	250	273	105	273	105	90-110	0	20	mg/kg	12.04.2020 21:01	

Analytical Method: Chloride by EPA 300

Seq Number: 3144041

Parent Sample Id: 679810-013

Matrix: Soil

MS Sample Id: 679810-013 S

Prep Method: E300P

Date Prep: 12.04.2020

MSD Sample Id: 679810-013 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	697	253	915	86	914	86	90-110	0	20	mg/kg	12.04.2020 22:41	X

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

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

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

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



Larson and Associates, Inc.
Central Vacuum Unit 139

Analytical Method: Chloride by EPA 300

Seq Number: 3144041

Parent Sample Id: 679810-023

Matrix: Soil

MS Sample Id: 679810-023 S

Prep Method: E300P

Date Prep: 12.04.2020

MSD Sample Id: 679810-023 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2810	1260	4110	103	4110	103	90-110	0	20	mg/kg	12.04.2020 23:55	

Analytical Method: Chloride by EPA 300

Seq Number: 3144043

Parent Sample Id: 679810-033

Matrix: Soil

MS Sample Id: 679810-033 S

Prep Method: E300P

Date Prep: 12.04.2020

MSD Sample Id: 679810-033 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	707	252	963	102	954	98	90-110	1	20	mg/kg	12.04.2020 17:17	

Analytical Method: Chloride by EPA 300

Seq Number: 3144043

Parent Sample Id: 679810-043

Matrix: Soil

MS Sample Id: 679810-043 S

Prep Method: E300P

Date Prep: 12.04.2020

MSD Sample Id: 679810-043 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	14.4	248	299	115	288	110	90-110	4	20	mg/kg	12.04.2020 18:59	X

Analytical Method: TPH by SW8015 Mod

Seq Number: 3144079

MB Sample Id: 7716513-1-BLK

Matrix: Solid

LCS Sample Id: 7716513-1-BKS

Prep Method: SW8015P

Date Prep: 12.06.2020

LCSD Sample Id: 7716513-1-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	1170	117	1050	105	70-130	11	20	mg/kg	12.06.2020 13:44	
Diesel Range Organics (DRO)	<50.0	1000	1130	113	1140	114	70-130	1	20	mg/kg	12.06.2020 13:44	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	100		106		107		70-130	%	12.06.2020 13:44
o-Terphenyl	115		125		128		70-130	%	12.06.2020 13:44

Analytical Method: TPH by SW8015 Mod

Seq Number: 3144079

Matrix: Solid

MB Sample Id: 7716513-1-BLK

Prep Method: SW8015P

Date Prep: 12.06.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	12.06.2020 22:51	

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

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

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

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

Larson and Associates, Inc.
Central Vacuum Unit 139
Analytical Method: TPH by SW8015 Mod

Seq Number: 3144079

Parent Sample Id: 679810-001

Matrix: Soil

MS Sample Id: 679810-001 S

Prep Method: SW8015P

Date Prep: 12.06.2020

MSD Sample Id: 679810-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<49.9	997	1070	107	972	98	70-130	10	20	mg/kg	12.06.2020 14:58	
Diesel Range Organics (DRO)	<49.9	997	1170	117	1100	110	70-130	6	20	mg/kg	12.06.2020 14:58	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	108		108		70-130	%	12.06.2020 14:58
o-Terphenyl	108		107		70-130	%	12.06.2020 14:58

Analytical Method: BTEX by EPA 8021B

Seq Number: 3144018

MB Sample Id: 7716473-1-BLK

Matrix: Solid

LCS Sample Id: 7716473-1-BKS

Prep Method: SW5035A

Date Prep: 12.04.2020

LCSD Sample Id: 7716473-1-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	0.105	105	0.107	107	70-130	2	35	mg/kg	12.05.2020 03:37	
Toluene	<0.00200	0.100	0.100	100	0.101	101	70-130	1	35	mg/kg	12.05.2020 03:37	
Ethylbenzene	<0.00200	0.100	0.0982	98	0.0990	99	70-130	1	35	mg/kg	12.05.2020 03:37	
m,p-Xylenes	<0.00400	0.200	0.183	92	0.182	91	70-130	1	35	mg/kg	12.05.2020 03:37	
o-Xylene	<0.00200	0.100	0.0918	92	0.0924	92	70-130	1	35	mg/kg	12.05.2020 03:37	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	81		93		93		70-130	%	12.05.2020 03:37
4-Bromofluorobenzene	92		90		89		70-130	%	12.05.2020 03:37

Analytical Method: BTEX by EPA 8021B

Seq Number: 3144018

Parent Sample Id: 679799-030

Matrix: Soil

MS Sample Id: 679799-030 S

Prep Method: SW5035A

Date Prep: 12.04.2020

MSD Sample Id: 679799-030 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0777	77	0.0691	69	70-130	12	35	mg/kg	12.05.2020 04:18	X
Toluene	<0.00202	0.101	0.0734	73	0.0618	62	70-130	17	35	mg/kg	12.05.2020 04:18	X
Ethylbenzene	<0.00202	0.101	0.0755	75	0.0638	64	70-130	17	35	mg/kg	12.05.2020 04:18	X
m,p-Xylenes	<0.00403	0.202	0.138	68	0.118	59	70-130	16	35	mg/kg	12.05.2020 04:18	X
o-Xylene	<0.00202	0.101	0.0736	73	0.0600	60	70-130	20	35	mg/kg	12.05.2020 04:18	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	94		86		70-130	%	12.05.2020 04:18
4-Bromofluorobenzene	95		86		70-130	%	12.05.2020 04:18

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

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

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

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

DATE: 12/11/2020 PAGE 2 OF 3
PO#: _____ LAB WORK ORDER#: _____
PROJECT LOCATION OR NAME: Central Vacuum Unit 139
LAI PROJECT #: 20-0107-17 COLLECTOR: D59

PRESERVATION			
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HCl
HNO ₃
H ₂ SO ₄ ☐ NaOH ☐
ICE
UNPRESSERVED

ANALYSES	
BTEX/MTBE	☐
TPH 418.1	☐ TPH 1005 ☐ TPH 1006 ☐
GASOLINE MOD 8015	☒
DIESEL - MOD 8015	☒
OIL - MOD 8015	☒
VOC 8280	☒
SVOC 8270	☐
8081 PESTICIDES	☐ PAH 8270 ☐ HOLDPAH ☐
8082 PCBs	☐ 8151 HERBICIDES ☐
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 ☐
pH	☐ HEXAVALENT CHROMIUM ☐
EXPLOSIVES	☐ PETCHLORATE ☐
CHLORIDE	☒ ANIONS ☐ ALKALINITY ☐
FIELD NOTES	

Released to Imaging: 3/18/2021 11:42:44 AM

1457
10
N

Released to Imaging: 3/18/2021 11:42:44 AM

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: Larson and Associates, Inc.**Date/ Time Received:** 12.04.2020 10.05.00 AM**Work Order #:** 679810**Acceptable Temperature Range:** 0 - 6 degC**Air and Metal samples Acceptable Range:** Ambient**Temperature Measuring device used :** IR8

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:



Brianna Teel

Date: 12.04.2020

Checklist reviewed by:



Holly Taylor

Date: 12.08.2020

Appendix D
Photographic Documentation

nRM2020936197
Delineation Report and Remediation Plan
Chevron USA, Inc., Central Vacuum #139
Produced Water Release
December 17, 2020



Impacted area viewing southwest, August 12, 2020



Impacted area viewing southeast, August 12, 2020

nRM2020936197
Delineation Report and Remediation Plan
Chevron USA, Inc., Central Vacuum #139
Produced Water Release
December 17, 2020



Impacted area viewing North/Northeast, August 12, 2020



Impacted area viewing northwest, August 12, 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 14271

CONDITIONS OF APPROVAL

Operator:	CHEVRON U S A INC	6301 Deauville Blvd	Midland, TX79706	OGRID:	4323	Action Number:	14271	Action Type:	C-141
OCD Reviewer	Condition								
ceads	None								