Form C-141
Page 3

State of New Mexico
Oil Conservation Division

Incident ID	NAB1835134267
District RP	2RP-5111
Facility ID	30-015 45101
Application ID	pAB1835130278

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?	16.25 (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.

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Page 4

State of New Mexico
Oil Conservation Division

Incident ID	NAB1835134267
District RP	2RP-5111
Facility ID	30-015-45101
Application ID	pAB1835130278

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: Amy Barnhill Date: 1/3/2020

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

OCD Only

Received by: Cristina Eads Date: 02/24/2020

Form C-141
Page 5

State of New Mexico
Oil Conservation Division

Incident ID	NAB1835134267
District RP	2RP-5111
Facility ID	30-015-45101
Application ID	pAB1835130278

Remediation Plan

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

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

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

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

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

Printed Name: Amy Barnhill Title: Waste and Water Specialist

Signature: Amy Barnhill Date: 1/3/2020

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

OCD Only

Received by: Cristina Eads Date: 02/24/2020

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

Signature: Cristina Eads Date: 02/24/2020

2RP-5092 & 2RP-5111
Delineation Report and Remediation Plan
HH SO 17 20 Federal 001 Pad
Diesel Fuel and Oil Based Drilling Mud
Eddy County, New Mexico

Latitude: N 32.05114°
Longitude: W 104.21480°

LAI Project No. 19-0180-06

January 3, 2020

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

Prepared by:
Larson & Associates, Inc.
507 North Marienfeld Street, Suite 205
Midland, Texas 79701

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

Rachel E. Owen
Sr. Geoscientist

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Tables

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Appendices

1.0 INTRODUCTION

Larson & Associates, Inc. (LAI), has prepared this delineation report and remediation plan on behalf of Chevron USA Inc. (Chevron) for submittal to the New Mexico Oil Conservation Division (OCD) District 2 for a diesel fuel and oil based mud release at the Hayhurst SO 17 20 Federal 001 #002H (Site) located in Unit N (SE/4, SW/4), Section 8, Township 26 South, Range 27 East in Eddy County New Mexico. The geodetic position is North 32.05114° and West -104.21480°. Figure 1 presents a topographic map. Figure 2 presents an aerial map.

1.1 Background

The diesel fuel release was discovered on November 9, 2018. The spill occurred when the fuel valves to the cold start generator were left in the open position releasing approximately 6.86 barrels (bbls) of diesel fuel. No liquid was recovered. The initial C-141 was submitted to OCD District 2 on November 20, 2018 and assigned a remediation permit number 2RP-5092. The oil-based mud release occurred on December 7, 2018. The spill occurred when the dryer shaker tank overflowed to the secondary containment releasing approximately 48.83 bbls of fluid. Approximately 48.83 bbls were recovered by a vacuum truck from the secondary containment. Appendix A presents the Chevron spill calculation for 2RP-5111. Immediate notice was given by Josepha DeLeon to Maria Pruett via voicemail and followed up with an email notification to Maria Pruett and Mike Bratcher on December 10, 2018 at 10:33 AM. The initial C-141 was submitted on December 13, 2018 and assigned a remediation permit number of 2RP-5111. An extension for spill characterization was requested due to high activity on the pad through December 31, 2019. Victoria Venegas (OCD) approved the extension on April 22, 2019. Appendix B presents regulatory communications.

1.2 Physical Setting

The physical setting is as follows:

- The surface elevation is approximately 3,254 feet above mean sea level (msl);
- The surface topography decreases to the southeast;
- There are no surface water features within 1,000 feet of the Site;
- The soils are designated as “Reeves-Gypsum land complex, 0 to 3 percent slopes ”, consisting of 0 to 8 inches of loam, underlain by 8 to 32 inches of a clay loam, and 32 to 60 inches of gypsiferous material;
- The geology consists of the Salado Formation (Upper Permian)- containing evaporate sequences, dominantly halite;
- Groundwater was reported at approximately 16.25 feet below ground surface (bgs) from a well located approximately 0.58 miles northwest of the Site and measurement in 1992 (USGS);

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 100 mg/Kg

- Chloride 600 mg/Kg

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

2.0 DELINEATION

On November 15, 2019, LAI personnel used a stainless steel hand auger to collect surface samples of the soil from twelve (12) locations inside of the spill areas (S-1 through S-6, S-8 and S-9) and outside of the spill areas (SP-7, S-10 through S-12) to vertically and horizontally delineate the release. The samples were collected to from 0 to 0.5 foot below ground surface (bgs). The soil samples were delivered under chain of custody and preservation to Permian Basin Environmental Laboratory (PBEL) in Midland, Texas. The laboratory analyzed the samples for benzene, toluene, ethylbenzene and xylenes (BTEX) and total petroleum hydrocarbons (TPH), including gasoline range organics (C6-C12), diesel range organics (>C12-C28) and oil range organics (>C28-C35), and chloride by EPA SW-846 Methods 8021B and 8015M, and M300, respectively. Benzene and BTEX were reported below the remediation action levels of 10 milligrams per kilogram (mg/Kg) and 50 mg/Kg in all samples. TPH was reported above the remediation action levels of 100 mg/Kg in the following surface samples (0 to 0.5 feet bgs):

S-2 (5,840 mg/Kg)
S-3 (485 mg/Kg)
S-4 (1,160 mg/Kg)
S-5 (1,920 mg/Kg)
S-6 (1,040 mg/Kg)
S-8 (5,280 mg/Kg)
S-9 (5,610 mg/Kg
S-10 (3,420 mg/Kg)
S-11 (5,350 mg/Kg)
S-12 (148 mg/Kg).

Chloride was reported above the remediation action levels of 600 mg/Kg in the following surface samples:

S-1 (1,580 mg/Kg)
S-2 (2,320 mg/Kg)
S-3 (4,060 mg/Kg)
S-4 (1,720 mg/Kg)
S-5 (1,770 mg/Kg)
S-6 (1,920 mg/Kg)
S-8 (3,960 mg/Kg
S-9 (909 mg/Kg)
S-10 (3,260 mg/Kg)
S-12 (1,910 mg/Kg).

On December 19, LAI personnel used direct push technology (DPT) to complete vertical delineation of the release. During this sampling event, two additional sample locations (S-13 and S-14) were added to the north and west of the well pad to complete horizontal delineation. Soil samples were collected between three (3) and six (6) feet bgs depending on subsurface conditions. The samples were delivered under chain of custody and preservation to Xenco Laboratories in Midland, Texas and were analyzed for BTEX, 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. Benzene, BTEX, TPH, and Chloride were delineated below the remediation limits of 10 mg/Kg, 50 mg/Kg, 100 mg/Kg, and 600 mg/Kg in all samples. Table 1 presents the soil sample analytical data summary.

Figure 2 presents an aerial map showing the soil sample locations. Appendix B presents the laboratory reports.

3.0 Remediation Plan

BTEX, TPH and chloride were delineated vertically and horizontally to the OCD values in Table 1 (19.15.29 NMAC) therefore Chevron proposes the following remedial actions:

- Excavate soil from an area measuring approximately 45,937 square feet encompassing SP-1 through SP-6 and SP-8 through SP-12 to 1 foot bgs;
- Collect five (5) point composite bottom and sidewall confirmation soil samples every 200 square feet and analyze for BTEX, TPH and chloride;
- Excavate additional soil to achieve the remediation standards in Table 1 (19.15.29 NMAC), if necessary;
- Backfill excavations with clean caliche with demonstrated “clean” concentrations for BTEX,TPH and chloride by laboratory methods; and
- Prepare report with photographs for submittal to OCD District 2.

Figure 3 presents the proposed excavation areas.

Tables

Table 1
Delineation Soil Sample Analytical Data Summary
Chevron USA, HH SO 17 20 Fed 001
Eddy County, New Mexico
North 32.05114 West 104.21480

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**	**600**
S-1	0 - 0.5	11/15/2019	In-Situ	<0.00100	<0.00600	<27.2	48.2	<27.2	48.2	**1,580**
	5	12/19/2019	In-Situ	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	223
S-2	0 - 0.5	11/15/2019	In-Situ	<0.00100	<0.00600	195	5,580	59	**5,840**	**2,320**
	5	12/19/2019	In-Situ	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	273
S-3	0 - 0.5	11/15/2019	In-Situ	<0.00100	<0.00600	<26.3	422	62.5	**485**	**4,060**
	4	12/19/2019	In-Situ	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	223
S-4	0 - 0.5	11/15/2019	In-Situ	<0.00100	<0.00600	<30.9	1,050	111	**1,160**	**1,720**
	3	12/19/2019	In-Situ	<0.00198	<0.00198	<49.9	<49.9	<49.9	<49.9	262
S-5	0 - 0.5	11/15/2019	In-Situ	<0.00100	<0.00600	<26.9	1,740	181	**1,920**	**1,770**
	5	12/19/2019	In-Situ	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	121
S-6	0 - 0.5	11/15/2019	In-Situ	<0.00100	<0.00600	<27.8	910	132	**1,040**	**1,920**
	5	12/19/2019	In-Situ	<0.00202	<0.00202	<49.8	<49.8	<49.8	<49.8	126
S-7	0 - 0.5	11/15/2019	In-Situ	<0.00100	<0.00600	<27.8	<27.8	<27.8	<27.8	28.9
	0.5	12/19/2019	In-Situ	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	15.9
	1	12/19/2019	In-Situ	<0.00201	<0.00201	<49.9	<49.9	<49.9	<49.9	63.9
S-8	0 - 0.5	11/15/2019	In-Situ	<0.00100	<0.00600	<26.6	4,880	406	**5,280**	**3,960**
	5	12/19/2019	In-Situ	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	177
	6	12/19/2019	In-Situ	<0.00201	<0.00201	<49.9	<49.9	<49.9	<49.9	56.4

Table 1
Delineation Soil Sample Analytical Data Summary
Chevron USA, HH SO 17 20 Fed 001
Eddy County, New Mexico
North 32.05114 West 104.21480

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**	**600**
S-9	0 - 0.5	11/15/2019	In-Situ	<0.00100	<0.00600	<27.8	5,170	440	**5,610**	**909**
	5	12/19/2019	In-Situ	<0.00198	<0.00198	<49.9	<49.9	<49.9	<49.9	192
S-10	0 - 0.5	11/15/2019	In-Situ	<0.00100	<0.00600	<25.5	3,170	253	**3,420**	**3,260**
	5	12/19/2019	In-Situ	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	95.9
	6	12/19/2019	In-Situ	<0.00198	<0.00198	<49.9	<49.9	<49.9	<49.9	5.89
S-11	0 - 0.5	11/15/2019	In-Situ	<0.00100	<0.00600	40.4	5,180	125	**5,350**	247
	5	12/19/2019	In-Situ	<0.00202	<0.00202	<49.9	<49.9	<49.9	<49.9	46.4
S-12	0 - 0.5	11/15/2019	In-Situ	<0.00100	<0.00600	<26.0	148	<26.0	**148**	**1,910**
	5	12/19/2019	In-Situ	<0.00198	<0.00198	<49.8	<49.8	<49.8	<49.8	103
	6	12/19/2019	In-Situ	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	52.0
S-13	0.5	12/19/2019	In-Situ	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	<4.95
	1	12/19/2019	In-Situ	<0.00201	<0.00201	<49.9	<49.9	<49.9	<49.9	99.2
S-14	0.5	12/19/2019	In-Situ	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	38.0
	1	12/19/2019	In-Situ	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	32.2

Notes: Analysis performed by Permian Basin Environmental Laboratory and Xenco Laboratories by EPA SW-846 Methods 8021B (BTEX), 8015M (TPH), and M300 (chloride)
Depth in feet below ground surface (bgs)
mg/Kg: milligrams per kilogram equivalent to parts per million (ppm)
<: denotes concentration less than analytical method reporting limit
Bold and Highlighted exceeds OCD remediation levels

Figures

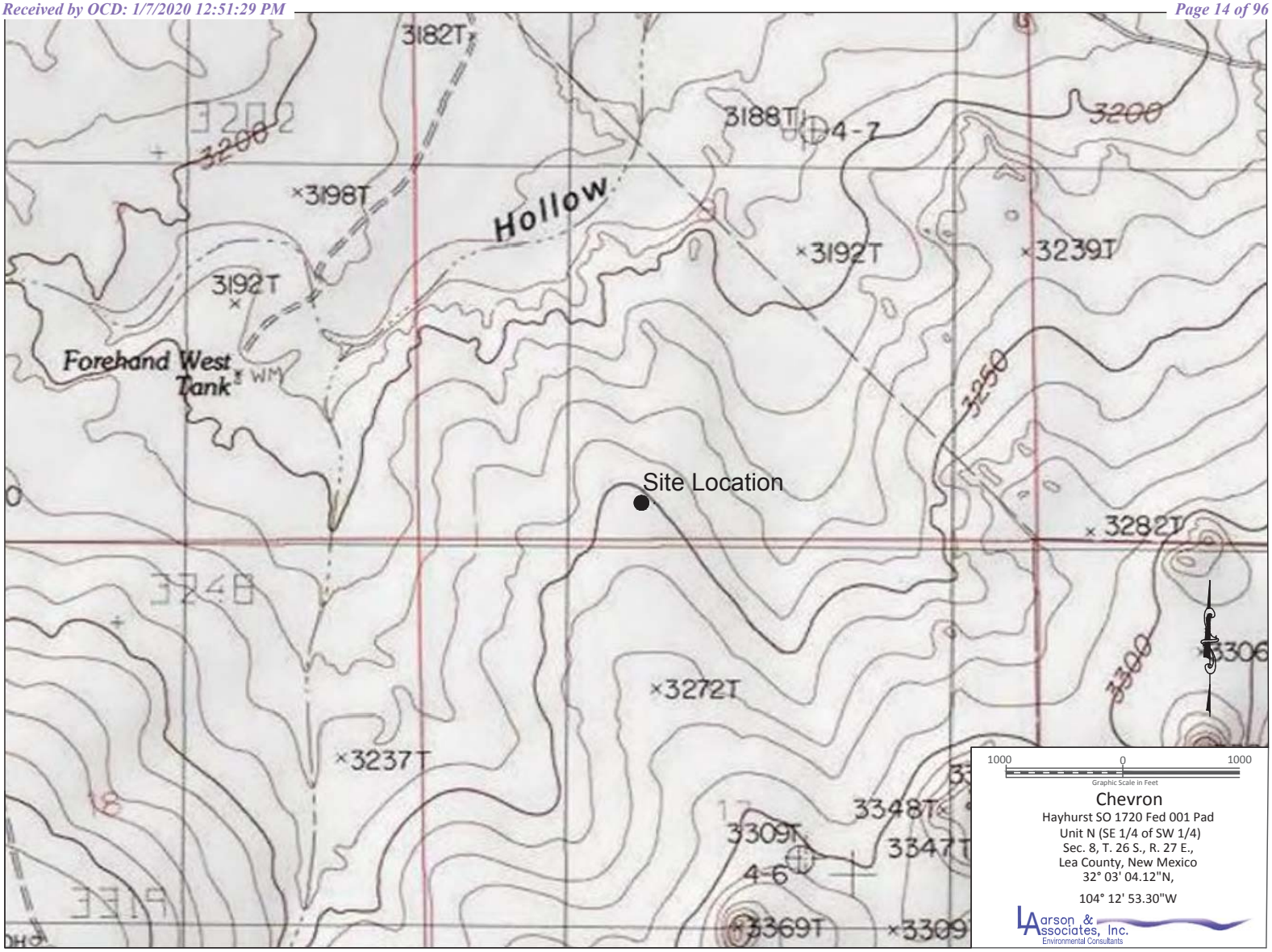


Figure 1 - Topographic Map

Figure 2 - Aerial Map

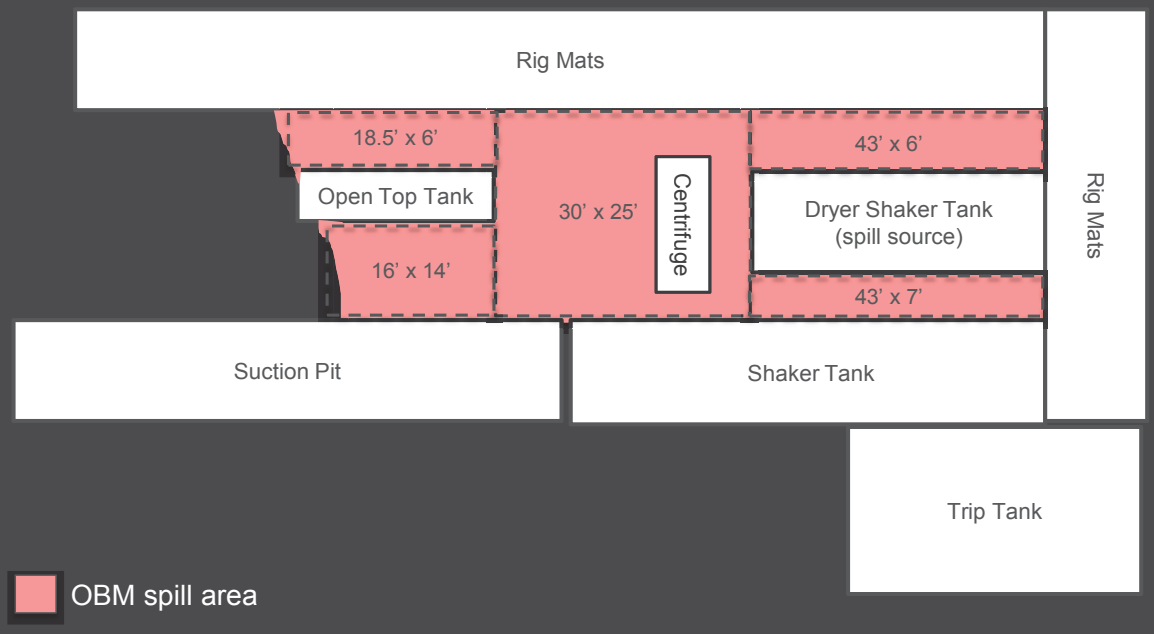
Figure 3 - Aerial Map Showing Proposed Excavation Location

Appendix A

Chevron Spill Calculation

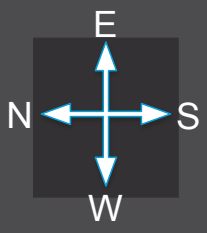
HH SO 17 20 FED 001 1H
OBM spill to secondary containment
Date: 12/07/2018

- Diagram not to scale
- Containment area in black extends beyond area depicted
- Spill area measurements taken by hand wheel



Spill Calculation:
18.5' x 6' x 2" = 3.3 bbls
16' x 14' x 2" = 6.65 bbls
43' x 6' x 2" = 7.66 bbls
43' x 7' x 2" = 8.94 bbls
30' x 25' x 2" = 22.27 bbls

Total bbls = 48.82



Appendix B

Regulatory Communications

Rachel Owen

From: Barnhill, Amy D. <ABarnhill@chevron.com>
Sent: Wednesday, May 1, 2019 11:31 AM
To: Weaver, Crystal
Cc: Jim Amos; Deborah McKinney; Barnhill, Amy D.
Subject: RE: [**EXTERNAL**] Re: [EXTERNAL] RE: 2RP-5092 and 2RP-5111
Attachments: C141 - Diesel Spill 11092018 - HH SO.pdf; C-141 HH SO 17 20 Fed 001-1H.pdf; Spill Diagram.pptx

Follow Up Flag: Follow up
Flag Status: Flagged

Crystal,
Please see the C-141s for the spills addressed in your e-mail below. Spill 11-9-18 is 1RP-5092 and spill 12-7-19 is 1RP-5111.

- 1RP-5092

Fuel valves to the cold start generator were left in open position causing a spill of diesel to land. Standing fluid was recovered via vac truck and affected loose soil was picked up with a shovel. Pictures are attached to the initial C-141. The diesel spilled was located on the East side of the attached diagram.

- 1RP-5111

The dryer shaker tank overflowed to secondary containment, no spill to land. Spill kits were used to contain release, rig vac and vac trucks were used to recover fluid. The attached spill diagram shows the area of release.

We are going to sample the area for due diligence in determining if there were impacts to the soil. This cannot be done until all drilling and completions activities are complete, hence the request for extension. Please let me know if you have questions or concerns.

Thank you,
Amy Barnhill
Waste and Water Specialist
MCBU
Office: 432-687-7108
Cell: 432-940-8524
E-Mail: ABarnhill@chevron.com
#OurEnvironmentMatters

From: Weaver, Crystal <caweaver@blm.gov>
Sent: Wednesday, April 24, 2019 3:41 PM
To: Venegas, Victoria, EMNRD <Victoria.Venegas@state.nm.us>

Cc: Barnhill, Amy D. <ABarnhill@chevron.com>; Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Jim Amos <jamos@blm.gov>; Deborah McKinney <dmckinne@blm.gov>
Subject: [**EXTERNAL**] Re: [EXTERNAL] RE: 2RP-5092 and 2RP-5111

Amy,

Again I have no record of the BLM receiving an initial C-141 for either of these spills. I looked back through all of the emails that Shelly Tucker forwarded me before she left the BLM to see if anything was in those. I have one record of conversation about HH SO 17 20 Federal 001-1H but no initial C-141 attached to that chain either. Can the BLM please get the initial C-141 documents for these spills and can you make sure that for these and any spills in the future that require BLM advisement, that Chevron makes sure to include Deborah McKinney on the initial submissions and especially the submissions with the initial reporting forms - dmckinne@blm.gov.

Also again as for advisement from the BLM, if Chevron is going to ask for an extension till December this year in order to perform remediation at this location, then the BLM would like to see statements in writing that all of the standing fluids were recovered and also see what the volumes were that were unrecoverable and where location wise were the impacts of the unrecoverable volumes (i.e. include a KMZ or some shape file indicating where contaminates hit surface). i.e. If you can respond to this email similar to how you responded to the last one I sent asking for this same stuff that would be appropriate.

Thank you,

Crystal Weaver
Environmental Protection Specialist
BLM - Carlsbad, NM
Desk: 575-234-5943
Cell: 575-200-0426
caweaver@blm.gov

BLM Carlsbad Field Office
620 E. Greene Street
Carlsbad NM 88220

"3 percent of the water on this planet is considered freshwater. Of that 3 percent only 1 percent is considered accessible, meaning the majority of the remaining 2 percent is trapped in glaciers or snowfields." - National Geographic

On Mon, Apr 22, 2019 at 12:31 PM Venegas, Victoria, EMNRD <Victoria.Venegas@state.nm.us> wrote:

2RP-5092 and 2RP-5111

Hello Ms. Barnhill,

OCD has received your extension request for 2RP-5092 and 2RP-5111, thank you. OCD understands the technical difficulties that a complete delineation/remediation activity presents at this time. The requested extension for the releases mentioned above is approved. However, be advised of the following:

- **NMOCD recommends a completed Site Assessment/Characterization Plan be reviewed and approve BEFORE any significant remediation works towards closure**.
- This is a Federal site. Operators must notify BLM Carlsbad Field Office regarding all spills that impact or involve federal lands. Federal sites require like approval from BLM.
- Please include our Environmental Specialist Robert.Hamlet@state.nm.us on all future correspondence.

Regards,

Victoria Venegas

EMNRD

OCD-District II

811 S First St. Artesia

NM 88210

Victoria.Venegas@state.nm.us

From: Barnhill, Amy D. <ABarnhill@chevron.com>
Sent: Monday, April 22, 2019 8:27 AM
To: Venegas, Victoria, EMNRD <Victoria.Venegas@state.nm.us>

Cc: Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>
Subject: [EXT] RE: 2RP-5092 and 2RP-5111

Victoria,

The two spills addressed above happened on the same pad. Although, I requested an extension on submitting a workplan until June 1, 2019, I am going to have to ask for a further extension. Unfortunately, I forgot to account for our completions crew getting on the site after drilling. The current projected date for drilling to move from this location is the end of April 2019. The completions crew will be rigging up in May and is projected to be on site through September due to the size of the pad, therefore, our third party contractor will not be able to access the location until after this date. If they try to get on site between drilling and completions, the bore sampling could compromise the compaction of the pad. We would like to ask for an extension until December 31, 2019. With the extended time, we will be able to access the location, collect samples and submit a work plan. We should also be able to have the site remediated by the end of the year, as well. Please let me know if this is acceptable. Thank you for your consideration.

Thank you,

Amy Barnhill

Waste and Water Specialist

MCBU

Office: 432-687-7108

Cell: 432-940-8524

E-Mail: ABarnhill@chevron.com

#OurEnvironmentMatters

From: Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>
Sent: Wednesday, February 27, 2019 9:03 AM
To: Barnhill, Amy D. <ABarnhill@chevron.com>

Cc: Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Venegas, Victoria, EMNRD <Victoria.Venegas@state.nm.us>
Subject: [**EXTERNAL**] RE: 2RP-5092 and 2RP-5111

RE: 2RP-5092 and 2RP-5111

Amy,

Your request for an extension to June 1st, 2019 is approved. Please expedite the sampling process and work plan submittal as soon as the rig is moved.

Thank you,

Robert J Hamlet

State of New Mexico

Energy, Minerals, and Natural Resources

Oil Conservation Division

811 S. First St., Artesia NM 88210

(575) 840-5963

Robert.Hamlet@state.nm.us

From: Barnhill, Amy D. <ABarnhill@chevron.com>
Sent: Monday, February 25, 2019 6:49 AM
To: Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>
Cc: Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Venegas, Victoria, EMNRD <Victoria.Venegas@state.nm.us>; Barnhill, Amy D. <ABarnhill@chevron.com>
Subject: [EXT] RE: 2RP-5092 and 2RP-5111

Mr. Hamlet,

As you know, the two spills addressed above happened on the same pad. Although, I requested an extension on submitting a workplan until March 7, 2019, I am going to have to ask for a further extension. The current projected date for drilling to move from this location is the end of April 2019. Therefore, our third party contractor will not be able to access the location until after this date. I would ask that we are granted an extension until June 1, 2019. With the extended time, we will be able to access the location, collect samples and submit a work plan. Please let me know if this is acceptable. Thank you for your consideration.

Thank you,

Amy Barnhill

Waste and Water Specialist

MCBU

Office: 432-687-7108

Cell: 432-940-8524

E-Mail: ABarnhill@chevron.com

#OurEnvironmentMatters

From: Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>
Sent: Friday, February 8, 2019 9:06 AM
To: Barnhill, Amy D. <ABarnhill@chevron.com>
Cc: Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Venegas, Victoria, EMNRD <Victoria.Venegas@state.nm.us>
Subject: [**EXTERNAL**] RE: 2RP-5092 and 2RP-5111

RE: 2RP-5092

Amy,

Your request for an extension to March 7th, 2019 is approved.

Thank you,

Robert J Hamlet

State of New Mexico

Energy, Minerals, and Natural Resources

Oil Conservation Division

811 S. First St., Artesia NM 88210

(575) 840-5963

Robert.Hamlet@state.nm.us

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to groundwater, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

From: Barnhill, Amy D. <ABarnhill@chevron.com>
Sent: Thursday, February 7, 2019 10:38 AM

To: Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>; Venegas, Victoria, EMNRD <Victoria.Venegas@state.nm.us>
Cc: Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>
Subject: [EXT] 2RP-5092 and 2RP-5111

Hello All,

We had two spills at the same location as specified below. We have already reached the 90th day for submittal of a workplan on the first spill. Due to the second spill not at its 90 day time frame, I am asking if we can submit a workplan to include both RP numbers within the next 30 days. Thank you for your consideration.

2RP-5092 HH SO 17 20 Federal 001-2H 11/9/18

2RP-5111 HH SO 17 20 Federal 001-1H 12/7/18

Thank you,

Amy Barnhill

Waste and Water Specialist

MCBU

Office: 432-687-7108

Cell: 432-940-8524

E-Mail: ABarnhill@chevron.com

#OurEnvironmentMatters

"The highest performance you can expect is the lowest standard you set"

Appendix C

Laboratory Reports

PERMIAN BASIN
ENVIRONMENTAL LAB, LP
1400 Rankin Hwy
Midland, TX 79701

PBELAB

Analytical Report

Prepared for:

Mark Larson
Larson & Associates, Inc.
P.O. Box 50685
Midland, TX 79710

Project: HH 50 17 20 FED 001 PAD
Project Number: 19-0180-06
Location: NM

Lab Order Number: 9K18006

NELAP/TCEQ # T104704516-17-8

Report Date: 12/04/19

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: HH 50 17 20 FED 001 PAD
Project Number: 19-0180-06
Project Manager: Mark Larson

Fax: (432) 687-0456

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S-1 @ (0-0.5')	9K18006-01	Soil	11/15/19 14:46	11-18-2019 09:14
S-2 @ (0-0.5')	9K18006-02	Soil	11/15/19 14:30	11-18-2019 09:14
S-3 @ (0-0.5')	9K18006-03	Soil	11/15/19 14:41	11-18-2019 09:14
S-4 @ (0-0.5')	9K18006-04	Soil	11/15/19 14:49	11-18-2019 09:14
S-5 @ (0-0.5')	9K18006-05	Soil	11/15/19 14:50	11-18-2019 09:14
S-6 @ (0-0.5')	9K18006-06	Soil	11/15/19 14:55	11-18-2019 09:14
S-7 @ (0-0.5')	9K18006-07	Soil	11/15/19 14:59	11-18-2019 09:14
S-8 @ (0-0.5')	9K18006-08	Soil	11/15/19 15:10	11-18-2019 09:14
S-9 @ (0-0.5')	9K18006-09	Soil	11/15/19 15:20	11-18-2019 09:14
S-10 @ (0-0.5')	9K18006-10	Soil	11/15/19 15:22	11-18-2019 09:14
S-11 @ (0-0.5')	9K18006-11	Soil	11/15/19 15:35	11-18-2019 09:14
S-12 @ (0-0.5')	9K18006-12	Soil	11/15/19 13:35	11-18-2019 09:14

Larson & Associates, Inc.	Project: HH 50 17 20 FED 001 PAD	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 19-0180-06	
Midland TX, 79710	Project Manager: Mark Larson	

S-1 @ (0-0.5')

9K18006-01 (Soil)

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Toluene	ND	0.00100	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Ethylbenzene	ND	0.00200	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Xylene (p/m)	ND	0.00100	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		*95.6 %*	*75-125*		*P9K2102*	*11/21/19*	*11/21/19*	*EPA 8021B*	
Surrogate: 1,4-Difluorobenzene		*86.8 %*	*75-125*		*P9K2102*	*11/21/19*	*11/21/19*	*EPA 8021B*	
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**1580**	10.9	mg/kg dry	10	P9K2613	11/26/19	11/29/19	EPA 300.0	
% Moisture	**8.0**	0.1	%	1	P9K1903	11/19/19	11/19/19	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	27.2	mg/kg dry	1	P9K2006	11/20/19	11/22/19	TPH 8015M	
>C12-C28	**48.2**	27.2	mg/kg dry	1	P9K2006	11/20/19	11/22/19	TPH 8015M	
>C28-C35	ND	27.2	mg/kg dry	1	P9K2006	11/20/19	11/22/19	TPH 8015M	
Surrogate: 1-Chlorooctane		*111 %*	*70-130*		*P9K2006*	*11/20/19*	*11/22/19*	*TPH 8015M*	
Surrogate: o-Terphenyl		*124 %*	*70-130*		*P9K2006*	*11/20/19*	*11/22/19*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	**48.2**	27.2	mg/kg dry	1	[CALC]	11/20/19	11/22/19	calc	

Larson & Associates, Inc.	Project: HH 50 17 20 FED 001 PAD	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 19-0180-06	
Midland TX, 79710	Project Manager: Mark Larson	

S-2 @ (0-0.5')

9K18006-02 (Soil)

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Toluene	ND	0.00100	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Ethylbenzene	ND	0.00200	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Xylene (p/m)	ND	0.00100	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		*97.4 %*	*75-125*		*P9K2102*	*11/21/19*	*11/21/19*	*EPA 8021B*	
Surrogate: 1,4-Difluorobenzene		*86.2 %*	*75-125*		*P9K2102*	*11/21/19*	*11/21/19*	*EPA 8021B*	
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**2320**	10.8	mg/kg dry	10	P9K2613	11/26/19	11/29/19	EPA 300.0	
% Moisture	**7.0**	0.1	%	1	P9K1903	11/19/19	11/19/19	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	**195**	26.9	mg/kg dry	1	P9K2006	11/20/19	11/22/19	TPH 8015M	
>C12-C28	**5580**	26.9	mg/kg dry	1	P9K2006	11/20/19	11/22/19	TPH 8015M	
>C28-C35	**59.4**	26.9	mg/kg dry	1	P9K2006	11/20/19	11/22/19	TPH 8015M	
Surrogate: 1-Chlorooctane		*119 %*	*70-130*		*P9K2006*	*11/20/19*	*11/22/19*	*TPH 8015M*	
Surrogate: o-Terphenyl		*124 %*	*70-130*		*P9K2006*	*11/20/19*	*11/22/19*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	**5840**	26.9	mg/kg dry	1	[CALC]	11/20/19	11/22/19	calc	

Larson & Associates, Inc.	Project: HH 50 17 20 FED 001 PAD	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 19-0180-06	
Midland TX, 79710	Project Manager: Mark Larson	

S-3 @ (0-0.5')

9K18006-03 (Soil)

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Toluene	ND	0.00100	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Ethylbenzene	ND	0.00200	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Xylene (p/m)	ND	0.00100	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		*96.0 %*	*75-125*		*P9K2102*	*11/21/19*	*11/21/19*	*EPA 8021B*	
Surrogate: 1,4-Difluorobenzene		*85.2 %*	*75-125*		*P9K2102*	*11/21/19*	*11/21/19*	*EPA 8021B*	
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**4060**	10.5	mg/kg dry	10	P9K2613	11/26/19	11/29/19	EPA 300.0	
% Moisture	**5.0**	0.1	%	1	P9K1903	11/19/19	11/19/19	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	26.3	mg/kg dry	1	P9K2006	11/20/19	11/22/19	TPH 8015M	
>C12-C28	**422**	26.3	mg/kg dry	1	P9K2006	11/20/19	11/22/19	TPH 8015M	
>C28-C35	**62.5**	26.3	mg/kg dry	1	P9K2006	11/20/19	11/22/19	TPH 8015M	
Surrogate: 1-Chlorooctane		*107 %*	*70-130*		*P9K2006*	*11/20/19*	*11/22/19*	*TPH 8015M*	
Surrogate: o-Terphenyl		*121 %*	*70-130*		*P9K2006*	*11/20/19*	*11/22/19*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	**485**	26.3	mg/kg dry	1	[CALC]	11/20/19	11/22/19	calc	

Larson & Associates, Inc.	Project: HH 50 17 20 FED 001 PAD	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 19-0180-06	
Midland TX, 79710	Project Manager: Mark Larson	

S-4 @ (0-0.5')

9K18006-04 (Soil)

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Toluene	ND	0.00100	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Ethylbenzene	ND	0.00200	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Xylene (p/m)	ND	0.00100	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		*99.1 %*	*75-125*		*P9K2102*	*11/21/19*	*11/21/19*	*EPA 8021B*	
Surrogate: 1,4-Difluorobenzene		*87.8 %*	*75-125*		*P9K2102*	*11/21/19*	*11/21/19*	*EPA 8021B*	
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**1720**	12.3	mg/kg dry	10	P9K2613	11/26/19	11/29/19	EPA 300.0	
% Moisture	**19.0**	0.1	%	1	P9K1903	11/19/19	11/19/19	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	30.9	mg/kg dry	1	P9K2006	11/20/19	11/22/19	TPH 8015M	
>C12-C28	**1050**	30.9	mg/kg dry	1	P9K2006	11/20/19	11/22/19	TPH 8015M	
>C28-C35	**111**	30.9	mg/kg dry	1	P9K2006	11/20/19	11/22/19	TPH 8015M	
Surrogate: 1-Chlorooctane		*109 %*	*70-130*		*P9K2006*	*11/20/19*	*11/22/19*	*TPH 8015M*	
Surrogate: o-Terphenyl		*127 %*	*70-130*		*P9K2006*	*11/20/19*	*11/22/19*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	**1160**	30.9	mg/kg dry	1	[CALC]	11/20/19	11/22/19	calc	

Larson & Associates, Inc.	Project: HH 50 17 20 FED 001 PAD	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 19-0180-06	
Midland TX, 79710	Project Manager: Mark Larson	

S-5 @ (0-0.5')

9K18006-05 (Soil)

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Toluene	ND	0.00100	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Ethylbenzene	ND	0.00200	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Xylene (p/m)	ND	0.00100	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		*104 %*	*75-125*		*P9K2102*	*11/21/19*	*11/21/19*	*EPA 8021B*	
Surrogate: 1,4-Difluorobenzene		*99.4 %*	*75-125*		*P9K2102*	*11/21/19*	*11/21/19*	*EPA 8021B*	
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**1770**	10.8	mg/kg dry	10	P9K2613	11/26/19	11/29/19	EPA 300.0	
% Moisture	**7.0**	0.1	%	1	P9K1903	11/19/19	11/19/19	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	26.9	mg/kg dry	1	P9K2006	11/20/19	11/22/19	TPH 8015M	
>C12-C28	**1740**	26.9	mg/kg dry	1	P9K2006	11/20/19	11/22/19	TPH 8015M	
>C28-C35	**181**	26.9	mg/kg dry	1	P9K2006	11/20/19	11/22/19	TPH 8015M	
Surrogate: 1-Chlorooctane		*110 %*	*70-130*		*P9K2006*	*11/20/19*	*11/22/19*	*TPH 8015M*	
Surrogate: o-Terphenyl		*125 %*	*70-130*		*P9K2006*	*11/20/19*	*11/22/19*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	**1920**	26.9	mg/kg dry	1	[CALC]	11/20/19	11/22/19	calc	

Larson & Associates, Inc.	Project: HH 50 17 20 FED 001 PAD	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 19-0180-06	
Midland TX, 79710	Project Manager: Mark Larson	

S-6 @ (0-0.5')

9K18006-06 (Soil)

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Toluene	ND	0.00100	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Ethylbenzene	ND	0.00200	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Xylene (p/m)	ND	0.00100	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		*97.9 %*	*75-125*		*P9K2102*	*11/21/19*	*11/21/19*	*EPA 8021B*	
Surrogate: 1,4-Difluorobenzene		*93.7 %*	*75-125*		*P9K2102*	*11/21/19*	*11/21/19*	*EPA 8021B*	
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**1920**	11.1	mg/kg dry	10	P9K2613	11/26/19	11/29/19	EPA 300.0	
% Moisture	**10.0**	0.1	%	1	P9K1903	11/19/19	11/19/19	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	27.8	mg/kg dry	1	P9K2006	11/20/19	11/22/19	TPH 8015M	
>C12-C28	**910**	27.8	mg/kg dry	1	P9K2006	11/20/19	11/22/19	TPH 8015M	
>C28-C35	**132**	27.8	mg/kg dry	1	P9K2006	11/20/19	11/22/19	TPH 8015M	
Surrogate: 1-Chlorooctane		*113 %*	*70-130*		*P9K2006*	*11/20/19*	*11/22/19*	*TPH 8015M*	
Surrogate: o-Terphenyl		*129 %*	*70-130*		*P9K2006*	*11/20/19*	*11/22/19*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	**1040**	27.8	mg/kg dry	1	[CALC]	11/20/19	11/22/19	calc	

Larson & Associates, Inc.	Project: HH 50 17 20 FED 001 PAD	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 19-0180-06	
Midland TX, 79710	Project Manager: Mark Larson	

S-7 @ (0-0.5')

9K18006-07 (Soil)

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Toluene	ND	0.00100	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Ethylbenzene	ND	0.00200	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Xylene (p/m)	ND	0.00100	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		*113 %*	*75-125*		*P9K2102*	*11/21/19*	*11/21/19*	*EPA 8021B*	
Surrogate: 1,4-Difluorobenzene		*103 %*	*75-125*		*P9K2102*	*11/21/19*	*11/21/19*	*EPA 8021B*	
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**28.9**	11.1	mg/kg dry	10	P9K2613	11/26/19	11/29/19	EPA 300.0	
% Moisture	**10.0**	0.1	%	1	P9K1903	11/19/19	11/19/19	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	27.8	mg/kg dry	1	P9K2006	11/20/19	11/22/19	TPH 8015M	
>C12-C28	ND	27.8	mg/kg dry	1	P9K2006	11/20/19	11/22/19	TPH 8015M	
>C28-C35	ND	27.8	mg/kg dry	1	P9K2006	11/20/19	11/22/19	TPH 8015M	
Surrogate: 1-Chlorooctane		*126 %*	*70-130*		*P9K2006*	*11/20/19*	*11/22/19*	*TPH 8015M*	
Surrogate: o-Terphenyl		*135 %*	*70-130*		*P9K2006*	*11/20/19*	*11/22/19*	*TPH 8015M*	*S-GC*
Total Petroleum Hydrocarbon C6-C35	ND	27.8	mg/kg dry	1	[CALC]	11/20/19	11/22/19	calc	

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Midland TX, 79710	Project Manager: Mark Larson	

S-8 @ (0-0.5')

9K18006-08 (Soil)

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Toluene	ND	0.00100	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Ethylbenzene	ND	0.00200	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Xylene (p/m)	ND	0.00100	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		*88.3 %*	*75-125*		*P9K2102*	*11/21/19*	*11/21/19*	*EPA 8021B*	
Surrogate: 1,4-Difluorobenzene		*96.4 %*	*75-125*		*P9K2102*	*11/21/19*	*11/21/19*	*EPA 8021B*	
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**3960**	10.6	mg/kg dry	10	P9K2613	11/26/19	11/29/19	EPA 300.0	
% Moisture	**6.0**	0.1	%	1	P9K1903	11/19/19	11/19/19	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	26.6	mg/kg dry	1	P9K2006	11/20/19	11/22/19	TPH 8015M	
>C12-C28	**4880**	26.6	mg/kg dry	1	P9K2006	11/20/19	11/22/19	TPH 8015M	
>C28-C35	**406**	26.6	mg/kg dry	1	P9K2006	11/20/19	11/22/19	TPH 8015M	
Surrogate: 1-Chlorooctane		*117 %*	*70-130*		*P9K2006*	*11/20/19*	*11/22/19*	*TPH 8015M*	
Surrogate: o-Terphenyl		*132 %*	*70-130*		*P9K2006*	*11/20/19*	*11/22/19*	*TPH 8015M*	*S-GC*
Total Petroleum Hydrocarbon C6-C35	**5280**	26.6	mg/kg dry	1	[CALC]	11/20/19	11/22/19	calc	

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Midland TX, 79710	Project Manager: Mark Larson	

S-9 @ (0-0.5')

9K18006-09 (Soil)

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Toluene	ND	0.00100	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Ethylbenzene	ND	0.00200	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Xylene (p/m)	ND	0.00100	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		*102 %*	*75-125*		*P9K2102*	*11/21/19*	*11/21/19*	*EPA 8021B*	
Surrogate: 1,4-Difluorobenzene		*102 %*	*75-125*		*P9K2102*	*11/21/19*	*11/21/19*	*EPA 8021B*	
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**909**	11.1	mg/kg dry	10	P9K2714	11/27/19	11/30/19	EPA 300.0	
% Moisture	**10.0**	0.1	%	1	P9K1903	11/19/19	11/19/19	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	27.8	mg/kg dry	1	P9K2006	11/20/19	11/22/19	TPH 8015M	
>C12-C28	**5170**	27.8	mg/kg dry	1	P9K2006	11/20/19	11/22/19	TPH 8015M	
>C28-C35	**440**	27.8	mg/kg dry	1	P9K2006	11/20/19	11/22/19	TPH 8015M	
Surrogate: 1-Chlorooctane		*112 %*	*70-130*		*P9K2006*	*11/20/19*	*11/22/19*	*TPH 8015M*	
Surrogate: o-Terphenyl		*128 %*	*70-130*		*P9K2006*	*11/20/19*	*11/22/19*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	**5610**	27.8	mg/kg dry	1	[CALC]	11/20/19	11/22/19	calc	

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S-10 @ (0-0.5')

9K18006-10 (Soil)

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Toluene	ND	0.00100	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Ethylbenzene	ND	0.00200	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Xylene (p/m)	ND	0.00100	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	P9K2102	11/21/19	11/21/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		*99.8 %*	*75-125*		*P9K2102*	*11/21/19*	*11/21/19*	*EPA 8021B*	
Surrogate: 1,4-Difluorobenzene		*100 %*	*75-125*		*P9K2102*	*11/21/19*	*11/21/19*	*EPA 8021B*	
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**3260**	10.2	mg/kg dry	10	P9K2714	11/27/19	11/30/19	EPA 300.0	
% Moisture	**2.0**	0.1	%	1	P9K1903	11/19/19	11/19/19	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	25.5	mg/kg dry	1	P9K2006	11/20/19	11/22/19	TPH 8015M	
>C12-C28	**3170**	25.5	mg/kg dry	1	P9K2006	11/20/19	11/22/19	TPH 8015M	
>C28-C35	**253**	25.5	mg/kg dry	1	P9K2006	11/20/19	11/22/19	TPH 8015M	
Surrogate: 1-Chlorooctane		*98.3 %*	*70-130*		*P9K2006*	*11/20/19*	*11/22/19*	*TPH 8015M*	
Surrogate: o-Terphenyl		*111 %*	*70-130*		*P9K2006*	*11/20/19*	*11/22/19*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	**3420**	25.5	mg/kg dry	1	[CALC]	11/20/19	11/22/19	calc	

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S-11 @ (0-0.5')

9K18006-11 (Soil)

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	P9K2103	11/21/19	11/22/19	EPA 8021B	
Toluene	ND	0.00100	mg/kg dry	1	P9K2103	11/21/19	11/22/19	EPA 8021B	
Ethylbenzene	ND	0.00200	mg/kg dry	1	P9K2103	11/21/19	11/22/19	EPA 8021B	
Xylene (p/m)	ND	0.00100	mg/kg dry	1	P9K2103	11/21/19	11/22/19	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	P9K2103	11/21/19	11/22/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		*107 %*	*75-125*		*P9K2103*	*11/21/19*	*11/22/19*	*EPA 8021B*	
Surrogate: 1,4-Difluorobenzene		*104 %*	*75-125*		*P9K2103*	*11/21/19*	*11/22/19*	*EPA 8021B*	
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**247**	5.10	mg/kg dry	5	P9K2714	11/27/19	11/30/19	EPA 300.0	
% Moisture	**2.0**	0.1	%	1	P9K1903	11/19/19	11/19/19	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	**40.4**	25.5	mg/kg dry	1	P9K2006	11/20/19	11/22/19	TPH 8015M	
>C12-C28	**5180**	25.5	mg/kg dry	1	P9K2006	11/20/19	11/22/19	TPH 8015M	
>C28-C35	**125**	25.5	mg/kg dry	1	P9K2006	11/20/19	11/22/19	TPH 8015M	
Surrogate: 1-Chlorooctane		*111 %*	*70-130*		*P9K2006*	*11/20/19*	*11/22/19*	*TPH 8015M*	
Surrogate: o-Terphenyl		*118 %*	*70-130*		*P9K2006*	*11/20/19*	*11/22/19*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	**5350**	25.5	mg/kg dry	1	[CALC]	11/20/19	11/22/19	calc	

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S-12 @ (0-0.5')

9K18006-12 (Soil)

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	P9K2103	11/21/19	11/22/19	EPA 8021B	
Toluene	ND	0.00100	mg/kg dry	1	P9K2103	11/21/19	11/22/19	EPA 8021B	
Ethylbenzene	ND	0.00200	mg/kg dry	1	P9K2103	11/21/19	11/22/19	EPA 8021B	
Xylene (p/m)	ND	0.00100	mg/kg dry	1	P9K2103	11/21/19	11/22/19	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	P9K2103	11/21/19	11/22/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		*105 %*	*75-125*		*P9K2103*	*11/21/19*	*11/22/19*	*EPA 8021B*	
Surrogate: 1,4-Difluorobenzene		*104 %*	*75-125*		*P9K2103*	*11/21/19*	*11/22/19*	*EPA 8021B*	
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**1910**	10.4	mg/kg dry	10	P9K2714	11/27/19	11/30/19	EPA 300.0	
% Moisture	**4.0**	0.1	%	1	P9K1903	11/19/19	11/19/19	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	26.0	mg/kg dry	1	P9K2006	11/20/19	11/22/19	TPH 8015M	
>C12-C28	**148**	26.0	mg/kg dry	1	P9K2006	11/20/19	11/22/19	TPH 8015M	
>C28-C35	ND	26.0	mg/kg dry	1	P9K2006	11/20/19	11/22/19	TPH 8015M	
Surrogate: 1-Chlorooctane		*101 %*	*70-130*		*P9K2006*	*11/20/19*	*11/22/19*	*TPH 8015M*	
Surrogate: o-Terphenyl		*108 %*	*70-130*		*P9K2006*	*11/20/19*	*11/22/19*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	**148**	26.0	mg/kg dry	1	[CALC]	11/20/19	11/22/19	calc	

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Midland TX, 79710

Project: HH 50 17 20 FED 001 PAD
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Organics by GC - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P9K2102 - General Preparation (GC)										
Blank (P9K2102-BLK1)				Prepared & Analyzed: 11/21/19						
Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00100	"							
Ethylbenzene	ND	0.00200	"							
Xylene (p/m)	ND	0.00100	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 4-Bromofluorobenzene	*0.138*		"	*0.120*		*115*	*75-125*			
Surrogate: 1,4-Difluorobenzene	*0.118*		"	*0.120*		*98.5*	*75-125*			
LCS (P9K2102-BS1)				Prepared & Analyzed: 11/21/19						
Benzene	0.0857	0.00100	mg/kg wet	0.100		85.7	80-120			
Toluene	0.0932	0.00100	"	0.100		93.2	80-120			
Ethylbenzene	0.113	0.00200	"	0.100		113	80-120			
Xylene (p/m)	0.183	0.00100	"	0.200		91.4	80-120			
Xylene (o)	0.0889	0.00100	"	0.100		88.9	80-120			
Surrogate: 4-Bromofluorobenzene	*0.114*		"	*0.120*		*94.8*	*75-125*			
Surrogate: 1,4-Difluorobenzene	*0.122*		"	*0.120*		*102*	*75-125*			
LCS Dup (P9K2102-BSD1)				Prepared & Analyzed: 11/21/19						
Benzene	0.0940	0.00100	mg/kg wet	0.100		94.0	80-120	9.15	20	
Toluene	0.0996	0.00100	"	0.100		99.6	80-120	6.65	20	
Ethylbenzene	0.108	0.00200	"	0.100		108	80-120	4.01	20	
Xylene (p/m)	0.199	0.00100	"	0.200		99.6	80-120	8.54	20	
Xylene (o)	0.105	0.00100	"	0.100		105	80-120	16.8	20	
Surrogate: 4-Bromofluorobenzene	*0.112*		"	*0.120*		*93.7*	*75-125*			
Surrogate: 1,4-Difluorobenzene	*0.127*		"	*0.120*		*106*	*75-125*			
Calibration Blank (P9K2102-CCB1)				Prepared & Analyzed: 11/21/19						
Benzene	0.00		mg/kg wet							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 4-Bromofluorobenzene	*0.140*		"	*0.120*		*117*	*75-125*			
Surrogate: 1,4-Difluorobenzene	*0.119*		"	*0.120*		*99.5*	*75-125*			

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Organics by GC - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P9K2102 - General Preparation (GC)										
Calibration Blank (P9K2102-CCB2)				Prepared & Analyzed: 11/21/19						
Benzene	0.00		mg/kg wet							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 4-Bromofluorobenzene	*0.125*		*"*	*0.120*		*104*	*75-125*			
Surrogate: 1,4-Difluorobenzene	*0.115*		*"*	*0.120*		*96.0*	*75-125*			
Calibration Blank (P9K2102-CCB3)				Prepared & Analyzed: 11/21/19						
Benzene	0.00		mg/kg wet							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 4-Bromofluorobenzene	*0.121*		*"*	*0.120*		*101*	*75-125*			
Surrogate: 1,4-Difluorobenzene	*0.120*		*"*	*0.120*		*100*	*75-125*			
Calibration Check (P9K2102-CCV1)				Prepared & Analyzed: 11/21/19						
Benzene	0.0845	0.00100	mg/kg wet	0.100		84.5	80-120			
Toluene	0.0888	0.00100	"	0.100		88.8	80-120			
Ethylbenzene	0.106	0.00200	"	0.100		106	80-120			
Xylene (p/m)	0.187	0.00100	"	0.200		93.5	80-120			
Xylene (o)	0.101	0.00100	"	0.100		101	80-120			
Surrogate: 4-Bromofluorobenzene	*0.101*		*"*	*0.120*		*83.8*	*75-125*			
Surrogate: 1,4-Difluorobenzene	*0.115*		*"*	*0.120*		*95.9*	*75-125*			
Calibration Check (P9K2102-CCV2)				Prepared & Analyzed: 11/21/19						
Benzene	0.0914	0.00100	mg/kg wet	0.100		91.4	80-120			
Toluene	0.0953	0.00100	"	0.100		95.3	80-120			
Ethylbenzene	0.107	0.00200	"	0.100		107	80-120			
Xylene (p/m)	0.190	0.00100	"	0.200		95.2	80-120			
Xylene (o)	0.106	0.00100	"	0.100		106	80-120			
Surrogate: 4-Bromofluorobenzene	*0.110*		*"*	*0.120*		*91.5*	*75-125*			
Surrogate: 1,4-Difluorobenzene	*0.128*		*"*	*0.120*		*107*	*75-125*			

Larson & Associates, Inc.
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Midland TX, 79710

Project: HH 50 17 20 FED 001 PAD
Project Number: 19-0180-06
Project Manager: Mark Larson

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Organics by GC - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P9K2102 - General Preparation (GC)										
Calibration Check (P9K2102-CCV3)				Prepared & Analyzed: 11/21/19						
Benzene	0.0890	0.00100	mg/kg wet	0.100		89.0	80-120			
Toluene	0.0891	0.00100	"	0.100		89.1	80-120			
Ethylbenzene	0.102	0.00200	"	0.100		102	80-120			
Xylene (p/m)	0.167	0.00100	"	0.200		83.3	80-120			
Xylene (o)	0.0932	0.00100	"	0.100		93.2	80-120			
Surrogate: 4-Bromofluorobenzene	*0.113*		*"*	*0.120*		*94.4*	*75-125*			
Surrogate: 1,4-Difluorobenzene	*0.125*		*"*	*0.120*		*104*	*75-125*			
Matrix Spike (P9K2102-MS1)		**Source: 9K18001-05**		Prepared & Analyzed: 11/21/19						
Benzene	0.0788	0.00100	mg/kg dry	0.111	0.199	NR	80-120			QM-07
Toluene	0.0757	0.00100	"	0.111	0.0469	25.9	80-120			QM-07
Ethylbenzene	0.112	0.00200	"	0.111	0.0583	47.9	80-120			QM-07
Xylene (p/m)	0.170	0.00100	"	0.222	0.210	NR	80-120			QM-07
Xylene (o)	0.115	0.00100	"	0.111	0.190	NR	80-120			QM-07
Surrogate: 4-Bromofluorobenzene	*0.137*		*"*	*0.133*		*103*	*75-125*			
Surrogate: 1,4-Difluorobenzene	*0.150*		*"*	*0.133*		*113*	*75-125*			
Matrix Spike Dup (P9K2102-MSD1)		**Source: 9K18001-05**		Prepared & Analyzed: 11/21/19						
Benzene	0.0679	0.00100	mg/kg dry	0.111	0.199	NR	80-120	NR	20	QM-07
Toluene	0.0598	0.00100	"	0.111	0.0469	11.6	80-120	76.4	20	QM-07, R
Ethylbenzene	0.109	0.00200	"	0.111	0.0583	45.8	80-120	4.44	20	QM-07
Xylene (p/m)	0.174	0.00100	"	0.222	0.210	NR	80-120	NR	20	QM-07
Xylene (o)	0.126	0.00100	"	0.111	0.190	NR	80-120	NR	20	QM-07
Surrogate: 4-Bromofluorobenzene	*0.126*		*"*	*0.133*		*94.8*	*75-125*			
Surrogate: 1,4-Difluorobenzene	*0.133*		*"*	*0.133*		*99.4*	*75-125*			
Batch P9K2103 - General Preparation (GC)										
Blank (P9K2103-BLK1)				Prepared & Analyzed: 11/21/19						
Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00100	"							
Ethylbenzene	ND	0.00200	"							
Xylene (p/m)	ND	0.00100	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 4-Bromofluorobenzene	*0.128*		*"*	*0.120*		*107*	*75-125*			
Surrogate: 1,4-Difluorobenzene	*0.126*		*"*	*0.120*		*105*	*75-125*			

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Midland TX, 79710

Project: HH 50 17 20 FED 001 PAD
Project Number: 19-0180-06
Project Manager: Mark Larson

Fax: (432) 687-0456

Organics by GC - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P9K2103 - General Preparation (GC)										
LCS (P9K2103-BS1)				Prepared & Analyzed: 11/21/19						
Benzene	0.0925	0.00100	mg/kg wet	0.100		92.5	80-120			
Toluene	0.0973	0.00100	"	0.100		97.3	80-120			
Ethylbenzene	0.110	0.00200	"	0.100		110	80-120			
Xylene (p/m)	0.178	0.00100	"	0.200		89.2	80-120			
Xylene (o)	0.0966	0.00100	"	0.100		96.6	80-120			
Surrogate: 4-Bromofluorobenzene	*0.115*		*"*	*0.120*		*96.1*	*75-125*			
Surrogate: 1,4-Difluorobenzene	*0.122*		*"*	*0.120*		*102*	*75-125*			
LCS Dup (P9K2103-BSD1)				Prepared & Analyzed: 11/21/19						
Benzene	0.0945	0.00100	mg/kg wet	0.100		94.5	80-120	2.17	20	
Toluene	0.0972	0.00100	"	0.100		97.2	80-120	0.113	20	
Ethylbenzene	0.107	0.00200	"	0.100		107	80-120	2.71	20	
Xylene (p/m)	0.181	0.00100	"	0.200		90.6	80-120	1.57	20	
Xylene (o)	0.0978	0.00100	"	0.100		97.8	80-120	1.34	20	
Surrogate: 4-Bromofluorobenzene	*0.122*		*"*	*0.120*		*102*	*75-125*			
Surrogate: 1,4-Difluorobenzene	*0.135*		*"*	*0.120*		*113*	*75-125*			
Calibration Blank (P9K2103-CCB1)				Prepared & Analyzed: 11/21/19						
Benzene	0.00		mg/kg wet							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 4-Bromofluorobenzene	*0.121*		*"*	*0.120*		*101*	*75-125*			
Surrogate: 1,4-Difluorobenzene	*0.120*		*"*	*0.120*		*100*	*75-125*			
Calibration Blank (P9K2103-CCB2)				Prepared: 11/21/19 Analyzed: 11/22/19						
Benzene	0.00		mg/kg wet							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 4-Bromofluorobenzene	*0.125*		*"*	*0.120*		*104*	*75-125*			
Surrogate: 1,4-Difluorobenzene	*0.108*		*"*	*0.120*		*89.9*	*75-125*			

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Organics by GC - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P9K2103 - General Preparation (GC)										
Calibration Check (P9K2103-CCV1)				Prepared & Analyzed: 11/21/19						
Benzene	0.0890	0.00100	mg/kg wet	0.100		89.0	80-120			
Toluene	0.0891	0.00100	"	0.100		89.1	80-120			
Ethylbenzene	0.102	0.00200	"	0.100		102	80-120			
Xylene (p/m)	0.167	0.00100	"	0.200		83.3	80-120			
Xylene (o)	0.0932	0.00100	"	0.100		93.2	80-120			
Surrogate: 4-Bromofluorobenzene	*0.113*		*"*	*0.120*		*94.4*	*75-125*			
Surrogate: 1,4-Difluorobenzene	*0.125*		*"*	*0.120*		*104*	*75-125*			
Calibration Check (P9K2103-CCV2)				Prepared: 11/21/19 Analyzed: 11/22/19						
Benzene	0.0852	0.00100	mg/kg wet	0.100		85.2	80-120			
Toluene	0.0856	0.00100	"	0.100		85.6	80-120			
Ethylbenzene	0.0921	0.00200	"	0.100		92.1	80-120			
Xylene (p/m)	0.164	0.00100	"	0.200		82.0	80-120			
Xylene (o)	0.0907	0.00100	"	0.100		90.7	80-120			
Surrogate: 4-Bromofluorobenzene	*0.105*		*"*	*0.120*		*87.8*	*75-125*			
Surrogate: 1,4-Difluorobenzene	*0.121*		*"*	*0.120*		*101*	*75-125*			
Calibration Check (P9K2103-CCV3)				Prepared: 11/21/19 Analyzed: 11/22/19						
Benzene	0.0890	0.00100	mg/kg wet	0.100		89.0	80-120			
Toluene	0.0935	0.00100	"	0.100		93.5	80-120			
Ethylbenzene	0.103	0.00200	"	0.100		103	80-120			
Xylene (p/m)	0.175	0.00100	"	0.200		87.5	80-120			
Xylene (o)	0.0955	0.00100	"	0.100		95.5	80-120			
Surrogate: 4-Bromofluorobenzene	*0.105*		*"*	*0.120*		*87.3*	*75-125*			
Surrogate: 1,4-Difluorobenzene	*0.128*		*"*	*0.120*		*106*	*75-125*			
Matrix Spike (P9K2103-MS1)		**Source: 9K18006-11**		Prepared: 11/21/19 Analyzed: 11/22/19						
Benzene	0.0650	0.00100	mg/kg dry	0.102	ND	63.7	80-120			QM-07
Toluene	0.0598	0.00100	"	0.102	ND	58.6	80-120			QM-07
Ethylbenzene	0.0734	0.00200	"	0.102	ND	71.9	80-120			QM-07
Xylene (p/m)	0.116	0.00100	"	0.204	ND	56.7	80-120			QM-07
Xylene (o)	0.0604	0.00100	"	0.102	ND	59.2	80-120			QM-07
Surrogate: 4-Bromofluorobenzene	*0.117*		*"*	*0.122*		*95.9*	*75-125*			
Surrogate: 1,4-Difluorobenzene	*0.135*		*"*	*0.122*		*110*	*75-125*			

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Midland TX, 79710	Project Manager: Mark Larson	

Organics by GC - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P9K2103 - General Preparation (GC)										
Matrix Spike Dup (P9K2103-MSD1)		**Source: 9K18006-11**		Prepared: 11/21/19 Analyzed: 11/22/19						
Benzene	0.0568	0.00100	mg/kg dry	0.102	ND	55.6	80-120	13.5	20	QM-07
Toluene	0.0496	0.00100	"	0.102	ND	48.6	80-120	18.6	20	QM-07
Ethylbenzene	0.0591	0.00200	"	0.102	ND	57.9	80-120	21.6	20	QM-07
Xylene (p/m)	0.0998	0.00100	"	0.204	ND	48.9	80-120	14.7	20	QM-07
Xylene (o)	0.0567	0.00100	"	0.102	ND	55.5	80-120	6.30	20	QM-07
Surrogate: 4-Bromofluorobenzene	*0.106*		*"*	*0.122*		*86.4*	*75-125*			
Surrogate: 1,4-Difluorobenzene	*0.120*		*"*	*0.122*		*97.8*	*75-125*			

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Project: HH 50 17 20 FED 001 PAD
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General Chemistry Parameters by EPA / Standard Methods - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P9K1903 - * DEFAULT PREP *** **										
Blank (P9K1903-BLK1)				Prepared & Analyzed: 11/19/19						
% Moisture	ND	0.1	%							
Duplicate (P9K1903-DUP1)		**Source: 9K18001-06**		Prepared & Analyzed: 11/19/19						
% Moisture	7.0	0.1	%		6.0			15.4	20	
Duplicate (P9K1903-DUP2)		**Source: 9K18004-02**		Prepared & Analyzed: 11/19/19						
% Moisture	13.0	0.1	%		13.0			0.00	20	
Duplicate (P9K1903-DUP3)		**Source: 9K18006-12**		Prepared & Analyzed: 11/19/19						
% Moisture	3.0	0.1	%		4.0			28.6	20	
Batch P9K2613 - * DEFAULT PREP *** **										
Blank (P9K2613-BLK1)				Prepared: 11/26/19 Analyzed: 11/27/19						
Chloride	ND	0.100	mg/kg wet							
LCS (P9K2613-BS1)				Prepared: 11/26/19 Analyzed: 11/27/19						
Chloride	443	1.00	mg/kg wet	400		111	80-120			
LCS Dup (P9K2613-BSD1)				Prepared: 11/26/19 Analyzed: 11/27/19						
Chloride	434	1.00	mg/kg wet	400		109	80-120	2.06	20	
Calibration Blank (P9K2613-CCB1)				Prepared: 11/26/19 Analyzed: 11/27/19						
Chloride	-0.0580		mg/kg wet							
Calibration Blank (P9K2613-CCB2)				Prepared: 11/26/19 Analyzed: 11/29/19						
Chloride	-0.0580		mg/kg wet							

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General Chemistry Parameters by EPA / Standard Methods - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P9K2613 - * DEFAULT PREP *** **										
Calibration Check (P9K2613-CCV1)				Prepared: 11/26/19 Analyzed: 11/27/19						
Chloride	21.2		mg/kg	20.0		106	0-200			
Calibration Check (P9K2613-CCV2)				Prepared: 11/26/19 Analyzed: 11/29/19						
Chloride	21.6		mg/kg	20.0		108	0-200			
Calibration Check (P9K2613-CCV3)				Prepared: 11/26/19 Analyzed: 11/29/19						
Chloride	23.0		mg/kg	20.0		115	0-200			
Matrix Spike (P9K2613-MS1)		**Source: 9K18004-08**		Prepared: 11/26/19 Analyzed: 11/27/19						
Chloride	8450	31.2	mg/kg dry	3120	5120	107	80-120			
Matrix Spike (P9K2613-MS2)		**Source: 9K18006-01**		Prepared: 11/26/19 Analyzed: 11/29/19						
Chloride	2710	10.9	mg/kg dry	1090	1580	104	80-120			
Matrix Spike Dup (P9K2613-MSD1)		**Source: 9K18004-08**		Prepared: 11/26/19 Analyzed: 11/27/19						
Chloride	8330	31.2	mg/kg dry	3120	5120	103	80-120	1.43	20	
Matrix Spike Dup (P9K2613-MSD2)		**Source: 9K18006-01**		Prepared: 11/26/19 Analyzed: 11/29/19						
Chloride	2790	10.9	mg/kg dry	1090	1580	112	80-120	2.78	20	
Batch P9K2714 - * DEFAULT PREP *** **										
Blank (P9K2714-BLK1)				Prepared: 11/27/19 Analyzed: 11/30/19						
Chloride	ND	0.100	mg/kg wet							
LCS (P9K2714-BS1)				Prepared: 11/27/19 Analyzed: 11/30/19						
Chloride	376	1.00	mg/kg wet	400		94.1	80-120			

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General Chemistry Parameters by EPA / Standard Methods - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P9K2714 - * DEFAULT PREP *** **										
LCS Dup (P9K2714-BSD1)				Prepared: 11/27/19 Analyzed: 11/30/19						
Chloride	399	1.00	mg/kg wet	400		99.8	80-120	5.92	20	
Calibration Blank (P9K2714-CCB1)				Prepared: 11/27/19 Analyzed: 11/30/19						
Chloride	0.00		mg/kg wet							
Calibration Blank (P9K2714-CCB2)				Prepared: 11/27/19 Analyzed: 11/30/19						
Chloride	-0.0580		mg/kg wet							
Calibration Check (P9K2714-CCV1)				Prepared: 11/27/19 Analyzed: 11/30/19						
Chloride	22.4		mg/kg	20.0		112	0-200			
Calibration Check (P9K2714-CCV2)				Prepared: 11/27/19 Analyzed: 11/30/19						
Chloride	22.4		mg/kg	20.0		112	0-200			
Calibration Check (P9K2714-CCV3)				Prepared: 11/27/19 Analyzed: 12/01/19						
Chloride	22.2		mg/kg	20.0		111	0-200			
Matrix Spike (P9K2714-MS1)		**Source: 9K26020-09**		Prepared: 11/27/19 Analyzed: 11/30/19						
Chloride	4010	11.2	mg/kg dry	1120	3000	90.0	80-120			
Matrix Spike (P9K2714-MS2)		**Source: 9K18006-11**		Prepared: 11/27/19 Analyzed: 11/30/19						
Chloride	815	5.10	mg/kg dry	510	247	111	80-120			
Matrix Spike Dup (P9K2714-MSD1)		**Source: 9K26020-09**		Prepared: 11/27/19 Analyzed: 11/30/19						
Chloride	4170	11.2	mg/kg dry	1120	3000	104	80-120	3.80	20	
Matrix Spike Dup (P9K2714-MSD2)		**Source: 9K18006-11**		Prepared: 11/27/19 Analyzed: 11/30/19						
Chloride	822	5.10	mg/kg dry	510	247	113	80-120	0.810	20	

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Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P9K2006 - TX 1005										
Blank (P9K2006-BLK1)				Prepared: 11/20/19 Analyzed: 11/22/19						
C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	*92.8*		*"*	*100*		*92.8*	*70-130*			
Surrogate: o-Terphenyl	*48.7*		*"*	*50.0*		*97.4*	*70-130*			
LCS (P9K2006-BS1)				Prepared: 11/20/19 Analyzed: 11/22/19						
C6-C12	890	25.0	mg/kg wet	1000		89.0	75-125			
>C12-C28	940	25.0	"	1000		94.0	75-125			
Surrogate: 1-Chlorooctane	*111*		*"*	*100*		*111*	*70-130*			
Surrogate: o-Terphenyl	*47.0*		*"*	*50.0*		*94.1*	*70-130*			
LCS Dup (P9K2006-BSD1)				Prepared: 11/20/19 Analyzed: 11/22/19						
C6-C12	806	25.0	mg/kg wet	1000		80.6	75-125	9.93	20	
>C12-C28	846	25.0	"	1000		84.6	75-125	10.6	20	
Surrogate: 1-Chlorooctane	*97.4*		*"*	*100*		*97.4*	*70-130*			
Surrogate: o-Terphenyl	*42.3*		*"*	*50.0*		*84.6*	*70-130*			
Calibration Check (P9K2006-CCV1)				Prepared: 11/20/19 Analyzed: 11/22/19						
C6-C12	474	25.0	mg/kg wet	500		94.9	85-115			
>C12-C28	511	25.0	"	500		102	85-115			
Surrogate: 1-Chlorooctane	*112*		*"*	*100*		*112*	*70-130*			
Surrogate: o-Terphenyl	*48.6*		*"*	*50.0*		*97.1*	*70-130*			
Calibration Check (P9K2006-CCV2)				Prepared: 11/20/19 Analyzed: 11/22/19						
C6-C12	461	25.0	mg/kg wet	500		92.2	85-115			
>C12-C28	501	25.0	"	500		100	85-115			
Surrogate: 1-Chlorooctane	*110*		*"*	*100*		*110*	*70-130*			
Surrogate: o-Terphenyl	*47.7*		*"*	*50.0*		*95.5*	*70-130*			

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Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P9K2006 - TX 1005										
Calibration Check (P9K2006-CCV3)				Prepared: 11/20/19 Analyzed: 11/22/19						
C6-C12	492	25.0	mg/kg wet	500		98.4	85-115			
>C12-C28	504	25.0	"	500		101	85-115			
Surrogate: 1-Chlorooctane	*114*		*"*	*100*		*114*	*70-130*			
Surrogate: o-Terphenyl	*48.7*		*"*	*50.0*		*97.4*	*70-130*			
Matrix Spike (P9K2006-MS1)		**Source: 9K19001-01**		Prepared: 11/20/19 Analyzed: 11/22/19						
C6-C12	931	26.6	mg/kg dry	1060	11.8	86.4	75-125			
>C12-C28	1010	26.6	"	1060	12.2	94.0	75-125			
Surrogate: 1-Chlorooctane	*125*		*"*	*106*		*118*	*70-130*			
Surrogate: o-Terphenyl	*51.6*		*"*	*53.2*		*97.0*	*70-130*			
Matrix Spike Dup (P9K2006-MSD1)		**Source: 9K19001-01**		Prepared: 11/20/19 Analyzed: 11/22/19						
C6-C12	958	26.6	mg/kg dry	1060	11.8	89.0	75-125	2.92	20	
>C12-C28	1050	26.6	"	1060	12.2	97.4	75-125	3.65	20	
Surrogate: 1-Chlorooctane	*128*		*"*	*106*		*120*	*70-130*			
Surrogate: o-Terphenyl	*50.5*		*"*	*53.2*		*95.0*	*70-130*			

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Notes and Definitions

S-GC	Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.
ROI	Received on Ice
R	The RPD exceeded the method control limit. The individual analyte QA/QC recoveries, however, were within acceptance limits.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
BULK	Samples received in Bulk soil containers
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
LCS	Laboratory Control Spike
MS	Matrix Spike
Dup	Duplicate

Report Approved By: Brent Barron Date: 12/4/2019

Brent Barron, Laboratory Director/Technical Director

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Nº 0830

CHAIN-OF-CUSTOD

Larson & Associates, Inc.
Environmental Consultants

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

Data Reported to:

DATE: 11/18/2019 PAGE 1 OF 1

PO#:

LAB WORK ORDER#: 9K18006

PROJECT LOCATION OR NAME: HH SD 17 20 Fed Com 001 pad

LAI PROJECT #: 19-01800106 COLLECTOR: RD

TRRP report? ☐ Yes ☒ No

TIME ZONE: Time zone/State: MST

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

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

ANALYSES: BTEX ☒ MTBE ☐ | TRPH 418.1 ☐ | TPH 1005 ☐ TPH 1006 ☐ | GASOLINE MOD 8015 ☒ | DIESEL - MOD 8015 ☒ | OIL - MOD 8015 ☒ | VOC 8260 ☐ | SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐ | 8081 PESTICIDES ☐ | 8151 HERBICIDES ☐ | 8082 PCBS ☐ | TBLP - METALS (RCRA) ☐ TCLP VOC ☐ | TCLP - PEST ☐ HERB ☐ Semi-VOC ☐ | TOTAL METALS (RCRA) ☐ D.W. 200.8 ☐ OTHER LIST ☐ | LEAD - TOTAL ☐ TOX ☐ FLASHPOINT ☐ TCLP ☐ | RCI ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐ | TDS ☐ pH ☐ HEXAVALENT CHROMIUM ☐ | EXPLOSIVES ☐ PECHLORATE ☐ | CHLORIDES ☒ ANIONS ☐ ALKALINITY ☐ | M300

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESSERVED	FIELD NOTES
S-1 (0-0.5')	1	11/15/19	14:46	S	1				X		
S-2 (0-0.5')	2		14:30								
S-3 (0-0.5')	3		14:41								
S-4 (0-0.5')	4		14:49								
S-5 (0-0.5')	5		14:50								
S-6 (0-0.5')	6		14:55								
S-7 (0-0.5')	7		14:59								
S-8 (0-0.5')	8		15:10								
S-9 (0-0.5')	9		15:20								
S-10 (0-0.5')	10		15:22								
S-11 (0-0.5')	11		15:35								
S-12 (0-0.5')	12		13:35								
TOTAL	12										

RELINQUISHED BY:(Signature)	DATE/TIME	RECEIVED BY: (Signature)
	11/18/19 9:14	
RELINQUISHED BY:(Signature)	DATE/TIME	RECEIVED BY: (Signature)
RELINQUISHED BY:(Signature)	DATE/TIME	RECEIVED BY: (Signature)

LABORATORY: PBEL

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

LABORATORY USE ONLY:
RECEIVING TEMP: -5.5-4.5 CF+1 THERM#: 12
CUSTODY SEALS - ☐ BRDKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL #
☐ HAND DELIVERED

Certificate of Analysis Summary 647299

Larson and Associates, Inc., Midland, TX

Project Name: Hayhurst SO 1720 FED PAD 1

Project Id: 19-0180-06
Contact: Mark Larson
Project Location: NM

Date Received in Lab: Fri Dec-20-19 04:25 pm
Report Date: 27-DEC-19
Project Manager: Holly Taylor

Analysis Requested	*Lab Id:*	647299-001		647299-002		647299-003		647299-004		647299-005		647299-006	
	Field Id:	S-1		S-2		S-3		S-4		S-5		S-6	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Dec-19-19 13:20		Dec-19-19 12:30		Dec-19-19 13:15		Dec-19-19 13:50		Dec-19-19 14:40		Dec-19-19 14:20	
BTEX by EPA 8021B	*Extracted:*	Dec-24-19 14:45		Dec-24-19 14:45		Dec-24-19 14:45		Dec-24-19 14:45		Dec-24-19 14:45		Dec-24-19 14:45	
	Analyzed:	Dec-25-19 07:19		Dec-25-19 07:40		Dec-25-19 08:00		Dec-25-19 08:20		Dec-25-19 08:41		Dec-25-19 09:01	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199	<0.00198	0.00198	<0.00201	0.00201	<0.00202	0.00202
Toluene		<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199	<0.00198	0.00198	<0.00201	0.00201	<0.00202	0.00202
Ethylbenzene		<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199	<0.00198	0.00198	<0.00201	0.00201	<0.00202	0.00202
m,p-Xylenes		<0.00401	0.00401	<0.00399	0.00399	<0.00398	0.00398	<0.00397	0.00397	<0.00402	0.00402	<0.00403	0.00403
o-Xylene		<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199	<0.00198	0.00198	<0.00201	0.00201	<0.00202	0.00202
Total Xylenes		<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199	<0.00198	0.00198	<0.00201	0.00201	<0.00202	0.00202
Total BTEX		<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199	<0.00198	0.00198	<0.00201	0.00201	<0.00202	0.00202
Chloride by EPA 300	*Extracted:*	Dec-20-19 19:00		Dec-20-19 19:00		Dec-20-19 19:00		Dec-20-19 19:00		Dec-20-19 19:00		Dec-20-19 19:00	
	Analyzed:	Dec-21-19 23:23		Dec-21-19 23:45		Dec-21-19 23:50		Dec-22-19 00:06		Dec-22-19 00:11		Dec-22-19 00:16	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		223	50.4	273	49.9	223	50.0	262	49.9	121	50.0	126	50.0
TPH By SW8015 Mod	*Extracted:*	Dec-21-19 11:00		Dec-21-19 11:00		Dec-21-19 11:00		Dec-21-19 11:00		Dec-21-19 11:00		Dec-21-19 11:00	
	Analyzed:	Dec-21-19 13:23		Dec-21-19 14:27		Dec-21-19 14:48		Dec-21-19 15:09		Dec-21-19 15:30		Dec-21-19 15:51	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<49.9	49.9	<49.9	49.9	<50.0	50.0	<49.9	49.9	<50.0	50.0	<49.8	49.8
Diesel Range Organics (DRO)		<49.9	49.9	<49.9	49.9	<50.0	50.0	<49.9	49.9	<50.0	50.0	<49.8	49.8
Motor Oil Range Hydrocarbons (MRO)		<49.9	49.9	<49.9	49.9	<50.0	50.0	<49.9	49.9	<50.0	50.0	<49.8	49.8

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

Holly Taylor
Project Manager

Certificate of Analysis Summary 647299

Larson and Associates, Inc., Midland, TX

Project Name: Hayhurst SO 1720 FED PAD 1

Project Id: 19-0180-06
Contact: Mark Larson
Project Location: NM

Date Received in Lab: Fri Dec-20-19 04:25 pm
Report Date: 27-DEC-19
Project Manager: Holly Taylor

Analysis Requested													
	Lab Id:	647299-007		647299-008		647299-009		647299-010		647299-011		647299-012	
	Field Id:	S-7		S-7		S-8		S-8		S-9		S-10	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Dec-19-19 12:50		Dec-19-19 12:50		Dec-19-19 11:22		Dec-19-19 11:30		Dec-19-19 11:05		Dec-19-19 11:40	
BTEX by EPA 8021B	***Extracted:***	Dec-24-19 14:45		Dec-24-19 14:45		Dec-24-19 14:45		Dec-24-19 14:45		Dec-24-19 14:45		Dec-24-19 14:45	
	Analyzed:	Dec-25-19 09:22		Dec-25-19 09:42		Dec-25-19 10:03		Dec-25-19 10:23		Dec-25-19 12:02		Dec-25-19 12:23	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00201	0.00201	<0.00201	0.00201	<0.00201	0.00201	<0.00201	0.00201	<0.00198	0.00198	<0.00199	0.00199
Toluene		<0.00201	0.00201	<0.00201	0.00201	<0.00201	0.00201	<0.00201	0.00201	<0.00198	0.00198	<0.00199	0.00199
Ethylbenzene		<0.00201	0.00201	<0.00201	0.00201	<0.00201	0.00201	<0.00201	0.00201	<0.00198	0.00198	<0.00199	0.00199
m,p-Xylenes		<0.00402	0.00402	<0.00402	0.00402	<0.00402	0.00402	<0.00402	0.00402	<0.00397	0.00397	<0.00398	0.00398
o-Xylene		<0.00201	0.00201	<0.00201	0.00201	<0.00201	0.00201	<0.00201	0.00201	<0.00198	0.00198	<0.00199	0.00199
Total Xylenes		<0.00201	0.00201	<0.00201	0.00201	<0.00201	0.00201	<0.00201	0.00201	<0.00198	0.00198	<0.00199	0.00199
Total BTEX		<0.00201	0.00201	<0.00201	0.00201	<0.00201	0.00201	<0.00201	0.00201	<0.00198	0.00198	<0.00199	0.00199
Chloride by EPA 300	***Extracted:***	Dec-20-19 19:00		Dec-20-19 19:00		Dec-20-19 19:00		Dec-20-19 19:00		Dec-22-19 19:00		Dec-22-19 19:00	
	Analyzed:	Dec-22-19 12:30		Dec-22-19 12:35		Dec-22-19 00:32		Dec-22-19 00:38		Dec-22-19 20:08		Dec-22-19 20:15	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		15.9	5.03	63.9	5.05	177	50.0	56.4	50.3	192	49.8	95.9	50.0
TPH By SW8015 Mod	***Extracted:***	Dec-21-19 11:00		Dec-21-19 11:00		Dec-21-19 11:00		Dec-21-19 11:00		Dec-21-19 11:00		Dec-21-19 11:00	
	Analyzed:	Dec-21-19 16:12		Dec-21-19 16:33		Dec-21-19 16:54		Dec-21-19 17:15		Dec-21-19 17:57		Dec-21-19 18:18	
	Units/RL:	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	<49.9	49.9	<49.9	49.9	<50.0	50.0
Diesel Range Organics (DRO)		<50.0	50.0	<49.9	49.9	<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	<50.0	50.0	<49.9	49.9	<49.9	49.9	<50.0	50.0

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

Holly Taylor
Project Manager

Certificate of Analysis Summary 647299

Larson and Associates, Inc., Midland, TX

Project Name: Hayhurst SO 1720 FED PAD 1

Project Id: 19-0180-06
Contact: Mark Larson
Project Location: NM

Date Received in Lab: Fri Dec-20-19 04:25 pm
Report Date: 27-DEC-19
Project Manager: Holly Taylor

Analysis Requested													
	Lab Id:	647299-013		647299-014		647299-015		647299-016		647299-017		647299-018	
	Field Id:	S-10		S-11		S-12		S-12		S-13		S-13	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Dec-19-19 11:50		Dec-19-19 11:59		Dec-19-19 10:43		Dec-19-19 10:47		Dec-19-19 15:30		Dec-19-19 15:30	
BTEX by EPA 8021B	***Extracted:***	Dec-24-19 14:45		Dec-24-19 14:45		Dec-24-19 14:45		Dec-24-19 14:45		Dec-24-19 14:45		Dec-24-19 14:45	
	Analyzed:	Dec-25-19 12:43		Dec-25-19 13:04		Dec-25-19 13:24		Dec-25-19 13:44		Dec-25-19 14:05		Dec-25-19 14:25	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00198	0.00198	<0.00202	0.00202	<0.00198	0.00198	<0.00200	0.00200	<0.00199	0.00199	<0.00201	0.00201
Toluene		<0.00198	0.00198	<0.00202	0.00202	<0.00198	0.00198	<0.00200	0.00200	<0.00199	0.00199	<0.00201	0.00201
Ethylbenzene		<0.00198	0.00198	<0.00202	0.00202	<0.00198	0.00198	<0.00200	0.00200	<0.00199	0.00199	<0.00201	0.00201
m,p-Xylenes		<0.00397	0.00397	<0.00403	0.00403	<0.00396	0.00396	<0.00401	0.00401	<0.00398	0.00398	<0.00402	0.00402
o-Xylene		<0.00198	0.00198	<0.00202	0.00202	<0.00198	0.00198	<0.00200	0.00200	<0.00199	0.00199	<0.00201	0.00201
Total Xylenes		<0.00198	0.00198	<0.00202	0.00202	<0.00198	0.00198	<0.00200	0.00200	<0.00199	0.00199	<0.00201	0.00201
Total BTEX		<0.00198	0.00198	<0.00202	0.00202	<0.00198	0.00198	<0.00200	0.00200	<0.00199	0.00199	<0.00201	0.00201
Chloride by EPA 300	***Extracted:***	Dec-22-19 19:00		Dec-22-19 19:00		Dec-22-19 19:00		Dec-22-19 19:00		Dec-22-19 19:00		Dec-22-19 19:00	
	Analyzed:	Dec-23-19 08:04		Dec-23-19 08:11		Dec-22-19 20:48		Dec-22-19 20:54		Dec-23-19 08:18		Dec-22-19 21:07	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		5.89	5.03	46.4	4.97	103	49.5	52.0	49.5	<4.95	4.95	99.2	50.3
TPH By SW8015 Mod	***Extracted:***	Dec-21-19 11:00		Dec-21-19 11:00		Dec-21-19 11:00		Dec-21-19 11:00		Dec-21-19 11:00		Dec-21-19 11:00	
	Analyzed:	Dec-21-19 18:39		Dec-21-19 19:00		Dec-21-19 19:20		Dec-21-19 19:42		Dec-21-19 20:03		Dec-21-19 20:24	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<49.9	49.9	<49.9	49.9	<49.8	49.8	<50.0	50.0	<49.9	49.9	<49.9	49.9
Diesel Range Organics (DRO)		<49.9	49.9	<49.9	49.9	<49.8	49.8	<50.0	50.0	<49.9	49.9	<49.9	49.9
Motor Oil Range Hydrocarbons (MRO)		<49.9	49.9	<49.9	49.9	<49.8	49.8	<50.0	50.0	<49.9	49.9	<49.9	49.9

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

Holly Taylor
Project Manager

Certificate of Analysis Summary 647299

Larson and Associates, Inc., Midland, TX

Project Name: Hayhurst SO 1720 FED PAD 1

Project Id: 19-0180-06
Contact: Mark Larson
Project Location: NM

Date Received in Lab: Fri Dec-20-19 04:25 pm
Report Date: 27-DEC-19
Project Manager: Holly Taylor

Analysis Requested									
	Lab Id:	647299-019		647299-020					
	Field Id:	S-14		S-14					
	Depth:								
	Matrix:	SOIL		SOIL					
	Sampled:	Dec-19-19 15:40		Dec-19-19 15:40					
BTEX by EPA 8021B	***Extracted:***	Dec-24-19 14:45		Dec-24-19 14:45					
	Analyzed:	Dec-25-19 14:46		Dec-25-19 15:06					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Benzene		<0.00200	0.00200	<0.00199	0.00199				
Toluene		<0.00200	0.00200	<0.00199	0.00199				
Ethylbenzene		<0.00200	0.00200	<0.00199	0.00199				
m,p-Xylenes		<0.00400	0.00400	<0.00398	0.00398				
o-Xylene		<0.00200	0.00200	<0.00199	0.00199				
Total Xylenes		<0.00200	0.00200	<0.00199	0.00199				
Total BTEX		<0.00200	0.00200	<0.00199	0.00199				
Chloride by EPA 300	***Extracted:***	Dec-22-19 19:00		Dec-22-19 19:00					
	Analyzed:	Dec-23-19 08:24		Dec-23-19 08:31					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Chloride		38.0	5.05	32.2	5.02				
TPH By SW8015 Mod	***Extracted:***	Dec-21-19 11:00		Dec-21-19 11:00					
	Analyzed:	Dec-21-19 20:46		Dec-21-19 21:07					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<50.0	50.0	<49.9	49.9				
Diesel Range Organics (DRO)		<50.0	50.0	<49.9	49.9				
Motor Oil Range Hydrocarbons (MRO)		<50.0	50.0	<49.9	49.9				

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

Holly Taylor
Project Manager

Analytical Report 647299

for

Larson and Associates, Inc.

Project Manager: Mark Larson

Hayhurst SO 1720 FED PAD 1

19-0180-06

27-DEC-19

Collected By: Client

1211 W. Florida Ave
Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)

27-DEC-19

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

Reference: XENCO Report No(s): **647299**
Hayhurst SO 1720 FED PAD 1
Project Address: NM

Mark Larson :

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 647299. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 647299 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Holly Taylor

Holly Taylor
Project Manager

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

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

Sample Cross Reference 647299

Larson and Associates, Inc., Midland, TX

Hayhurst SO 1720 FED PAD 1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
S-1	S	12-19-19 13:20		647299-001
S-2	S	12-19-19 12:30		647299-002
S-3	S	12-19-19 13:15		647299-003
S-4	S	12-19-19 13:50		647299-004
S-5	S	12-19-19 14:40		647299-005
S-6	S	12-19-19 14:20		647299-006
S-7	S	12-19-19 12:50		647299-007
S-7	S	12-19-19 12:50		647299-008
S-8	S	12-19-19 11:22		647299-009
S-8	S	12-19-19 11:30		647299-010
S-9	S	12-19-19 11:05		647299-011
S-10	S	12-19-19 11:40		647299-012
S-10	S	12-19-19 11:50		647299-013
S-11	S	12-19-19 11:59		647299-014
S-12	S	12-19-19 10:43		647299-015
S-12	S	12-19-19 10:47		647299-016
S-13	S	12-19-19 15:30		647299-017
S-13	S	12-19-19 15:30		647299-018
S-14	S	12-19-19 15:40		647299-019
S-14	S	12-19-19 15:40		647299-020

CASE NARRATIVE

Client Name: Larson and Associates, Inc.
Project Name: Hayhurst SO 1720 FED PAD 1

Project ID: *19-0180-06*
Work Order Number(s): *647299*

Report Date: *27-DEC-19*
Date Received: *12/20/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3111420 TPH By SW8015 Mod
Outlier/s are due to possible matrix interference.

Lab Sample ID 647299-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Diesel Range Organics (DRO), Gasoline Range Hydrocarbons (GRO) Relative Percent Difference (RPD) between matrix spike and duplicate were above quality control limits.
Samples in the analytical batch are: 647299-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016, -017, -018, -019, -020
Laboratory Spike recoveries and RPDs within quality control limits; therefore the data was accepted.

Batch: LBA-3111717 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analytical Results 647299

Larson and Associates, Inc., Midland, TX

Hayhurst SO 1720 FED PAD 1

Sample Id: **S-1** Matrix: Soil Date Received:12.20.19 16.25
Lab Sample Id: 647299-001 Date Collected: 12.19.19 13.20

Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: SPC % Moisture:
Analyst: SPC Date Prep: 12.20.19 19.00 Basis: Wet Weight
Seq Number: 3111383

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**223**	50.4	mg/kg	12.21.19 23.23		10

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P
Tech: DVM % Moisture:
Analyst: ARM Date Prep: 12.21.19 11.00 Basis: Wet Weight
Seq Number: 3111420

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.21.19 13.23	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	12.21.19 13.23	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.21.19 13.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	12.21.19 13.23	
o-Terphenyl	84-15-1	89	%	70-135	12.21.19 13.23	

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: KTL % Moisture:
Analyst: KTL Date Prep: 12.24.19 14.45 Basis: Wet Weight
Seq Number: 3111717

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.25.19 07.19	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.25.19 07.19	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.25.19 07.19	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	12.25.19 07.19	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.25.19 07.19	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.25.19 07.19	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.25.19 07.19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	90	%	70-130	12.25.19 07.19	
1,4-Difluorobenzene	540-36-3	110	%	70-130	12.25.19 07.19	

Certificate of Analytical Results 647299

Larson and Associates, Inc., Midland, TX

Hayhurst SO 1720 FED PAD 1

Sample Id: **S-2** Matrix: Soil Date Received:12.20.19 16.25
Lab Sample Id: 647299-002 Date Collected: 12.19.19 12.30

Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: SPC % Moisture:
Analyst: SPC Date Prep: 12.20.19 19.00 Basis: Wet Weight
Seq Number: 3111383

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**273**	49.9	mg/kg	12.21.19 23.45		10

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P
Tech: DVM % Moisture:
Analyst: ARM Date Prep: 12.21.19 11.00 Basis: Wet Weight
Seq Number: 3111420

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.21.19 14.27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	12.21.19 14.27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.21.19 14.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	12.21.19 14.27	
o-Terphenyl	84-15-1	88	%	70-135	12.21.19 14.27	

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: KTL % Moisture:
Analyst: KTL Date Prep: 12.24.19 14.45 Basis: Wet Weight
Seq Number: 3111717

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.25.19 07.40	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.25.19 07.40	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.25.19 07.40	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	12.25.19 07.40	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.25.19 07.40	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.25.19 07.40	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.25.19 07.40	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	112	%	70-130	12.25.19 07.40	
4-Bromofluorobenzene	460-00-4	101	%	70-130	12.25.19 07.40	

Certificate of Analytical Results 647299

Larson and Associates, Inc., Midland, TX

Hayhurst SO 1720 FED PAD 1

Sample Id: **S-3** Matrix: Soil Date Received:12.20.19 16.25
Lab Sample Id: 647299-003 Date Collected: 12.19.19 13.15

Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: SPC % Moisture:
Analyst: SPC Date Prep: 12.20.19 19.00 Basis: Wet Weight
Seq Number: 3111383

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**223**	50.0	mg/kg	12.21.19 23.50		10

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P
Tech: DVM % Moisture:
Analyst: ARM Date Prep: 12.21.19 11.00 Basis: Wet Weight
Seq Number: 3111420

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.21.19 14.48	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.21.19 14.48	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.21.19 14.48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	12.21.19 14.48	
o-Terphenyl	84-15-1	86	%	70-135	12.21.19 14.48	

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: KTL % Moisture:
Analyst: KTL Date Prep: 12.24.19 14.45 Basis: Wet Weight
Seq Number: 3111717

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	12.25.19 08.00	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	12.25.19 08.00	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	12.25.19 08.00	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	12.25.19 08.00	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	12.25.19 08.00	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	12.25.19 08.00	U	1
Total BTEX		<0.00199	0.00199	mg/kg	12.25.19 08.00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	111	%	70-130	12.25.19 08.00	
4-Bromofluorobenzene	460-00-4	100	%	70-130	12.25.19 08.00	

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Larson and Associates, Inc., Midland, TX

Hayhurst SO 1720 FED PAD 1

Sample Id: **S-4** Matrix: Soil Date Received:12.20.19 16.25
Lab Sample Id: 647299-004 Date Collected: 12.19.19 13.50

Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: SPC % Moisture:
Analyst: SPC Date Prep: 12.20.19 19.00 Basis: Wet Weight
Seq Number: 3111383

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**262**	49.9	mg/kg	12.22.19 00.06		10

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P
Tech: DVM % Moisture:
Analyst: ARM Date Prep: 12.21.19 11.00 Basis: Wet Weight
Seq Number: 3111420

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.21.19 15.09	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	12.21.19 15.09	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.21.19 15.09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	12.21.19 15.09	
o-Terphenyl	84-15-1	86	%	70-135	12.21.19 15.09	

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: KTL % Moisture:
Analyst: KTL Date Prep: 12.24.19 14.45 Basis: Wet Weight
Seq Number: 3111717

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	12.25.19 08.20	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	12.25.19 08.20	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	12.25.19 08.20	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	12.25.19 08.20	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	12.25.19 08.20	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	12.25.19 08.20	U	1
Total BTEX		<0.00198	0.00198	mg/kg	12.25.19 08.20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	98	%	70-130	12.25.19 08.20	
1,4-Difluorobenzene	540-36-3	110	%	70-130	12.25.19 08.20	

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Larson and Associates, Inc., Midland, TX

Hayhurst SO 1720 FED PAD 1

Sample Id: **S-5** Matrix: Soil Date Received:12.20.19 16.25
Lab Sample Id: 647299-005 Date Collected: 12.19.19 14.40

Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: SPC % Moisture:
Analyst: SPC Date Prep: 12.20.19 19.00 Basis: Wet Weight
Seq Number: 3111383

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**121**	50.0	mg/kg	12.22.19 00.11		10

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P
Tech: DVM % Moisture:
Analyst: ARM Date Prep: 12.21.19 11.00 Basis: Wet Weight
Seq Number: 3111420

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.21.19 15.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.21.19 15.30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.21.19 15.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	76	%	70-135	12.21.19 15.30	
o-Terphenyl	84-15-1	75	%	70-135	12.21.19 15.30	

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: KTL % Moisture:
Analyst: KTL Date Prep: 12.24.19 14.45 Basis: Wet Weight
Seq Number: 3111717

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	12.25.19 08.41	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	12.25.19 08.41	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	12.25.19 08.41	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	12.25.19 08.41	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	12.25.19 08.41	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	12.25.19 08.41	U	1
Total BTEX		<0.00201	0.00201	mg/kg	12.25.19 08.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	99	%	70-130	12.25.19 08.41	
1,4-Difluorobenzene	540-36-3	110	%	70-130	12.25.19 08.41	

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Larson and Associates, Inc., Midland, TX

Hayhurst SO 1720 FED PAD 1

Sample Id: **S-6** Matrix: Soil Date Received:12.20.19 16.25
Lab Sample Id: 647299-006 Date Collected: 12.19.19 14.20

Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: SPC % Moisture:
Analyst: SPC Date Prep: 12.20.19 19.00 Basis: Wet Weight
Seq Number: 3111383

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**126**	50.0	mg/kg	12.22.19 00.16		10

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P
Tech: DVM % Moisture:
Analyst: ARM Date Prep: 12.21.19 11.00 Basis: Wet Weight
Seq Number: 3111420

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	12.21.19 15.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	12.21.19 15.51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	12.21.19 15.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	84	%	70-135	12.21.19 15.51	
o-Terphenyl	84-15-1	85	%	70-135	12.21.19 15.51	

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: KTL % Moisture:
Analyst: KTL Date Prep: 12.24.19 14.45 Basis: Wet Weight
Seq Number: 3111717

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	12.25.19 09.01	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	12.25.19 09.01	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	12.25.19 09.01	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	12.25.19 09.01	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	12.25.19 09.01	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	12.25.19 09.01	U	1
Total BTEX		<0.00202	0.00202	mg/kg	12.25.19 09.01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	105	%	70-130	12.25.19 09.01	
1,4-Difluorobenzene	540-36-3	114	%	70-130	12.25.19 09.01	

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Larson and Associates, Inc., Midland, TX

Hayhurst SO 1720 FED PAD 1

Sample Id: **S-7** Matrix: Soil Date Received:12.20.19 16.25
Lab Sample Id: 647299-007 Date Collected: 12.19.19 12.50

Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: SPC % Moisture:
Analyst: SPC Date Prep: 12.20.19 19.00 Basis: Wet Weight
Seq Number: 3111383

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**15.9**	5.03	mg/kg	12.22.19 12.30		1

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P
Tech: DVM % Moisture:
Analyst: ARM Date Prep: 12.21.19 11.00 Basis: Wet Weight
Seq Number: 3111420

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.21.19 16.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.21.19 16.12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.21.19 16.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	85	%	70-135	12.21.19 16.12	
o-Terphenyl	84-15-1	82	%	70-135	12.21.19 16.12	

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: KTL % Moisture:
Analyst: KTL Date Prep: 12.24.19 14.45 Basis: Wet Weight
Seq Number: 3111717

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	12.25.19 09.22	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	12.25.19 09.22	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	12.25.19 09.22	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	12.25.19 09.22	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	12.25.19 09.22	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	12.25.19 09.22	U	1
Total BTEX		<0.00201	0.00201	mg/kg	12.25.19 09.22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	101	%	70-130	12.25.19 09.22	
1,4-Difluorobenzene	540-36-3	111	%	70-130	12.25.19 09.22	

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Larson and Associates, Inc., Midland, TX

Hayhurst SO 1720 FED PAD 1

Sample Id: **S-7** Matrix: Soil Date Received:12.20.19 16.25
Lab Sample Id: 647299-008 Date Collected: 12.19.19 12.50

Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: SPC % Moisture:
Analyst: SPC Date Prep: 12.20.19 19.00 Basis: Wet Weight
Seq Number: 3111383

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**63.9**	5.05	mg/kg	12.22.19 12.35		1

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P
Tech: DVM % Moisture:
Analyst: ARM Date Prep: 12.21.19 11.00 Basis: Wet Weight
Seq Number: 3111420

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.21.19 16.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	12.21.19 16.33	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.21.19 16.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	85	%	70-135	12.21.19 16.33	
o-Terphenyl	84-15-1	81	%	70-135	12.21.19 16.33	

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: KTL % Moisture:
Analyst: KTL Date Prep: 12.24.19 14.45 Basis: Wet Weight
Seq Number: 3111717

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	12.25.19 09.42	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	12.25.19 09.42	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	12.25.19 09.42	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	12.25.19 09.42	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	12.25.19 09.42	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	12.25.19 09.42	U	1
Total BTEX		<0.00201	0.00201	mg/kg	12.25.19 09.42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	113	%	70-130	12.25.19 09.42	
4-Bromofluorobenzene	460-00-4	102	%	70-130	12.25.19 09.42	

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Larson and Associates, Inc., Midland, TX

Hayhurst SO 1720 FED PAD 1

Sample Id: **S-8** Matrix: Soil Date Received:12.20.19 16.25
Lab Sample Id: 647299-009 Date Collected: 12.19.19 11.22

Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: SPC % Moisture:
Analyst: SPC Date Prep: 12.20.19 19.00 Basis: Wet Weight
Seq Number: 3111383

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**177**	50.0	mg/kg	12.22.19 00.32		10

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P
Tech: DVM % Moisture:
Analyst: ARM Date Prep: 12.21.19 11.00 Basis: Wet Weight
Seq Number: 3111420

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.21.19 16.54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.21.19 16.54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.21.19 16.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	85	%	70-135	12.21.19 16.54	
o-Terphenyl	84-15-1	82	%	70-135	12.21.19 16.54	

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: KTL % Moisture:
Analyst: KTL Date Prep: 12.24.19 14.45 Basis: Wet Weight
Seq Number: 3111717

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	12.25.19 10.03	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	12.25.19 10.03	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	12.25.19 10.03	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	12.25.19 10.03	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	12.25.19 10.03	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	12.25.19 10.03	U	1
Total BTEX		<0.00201	0.00201	mg/kg	12.25.19 10.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	111	%	70-130	12.25.19 10.03	
4-Bromofluorobenzene	460-00-4	98	%	70-130	12.25.19 10.03	

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Larson and Associates, Inc., Midland, TX

Hayhurst SO 1720 FED PAD 1

Sample Id: **S-8** Matrix: Soil Date Received:12.20.19 16.25
Lab Sample Id: 647299-010 Date Collected: 12.19.19 11.30

Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: SPC % Moisture:
Analyst: SPC Date Prep: 12.20.19 19.00 Basis: Wet Weight
Seq Number: 3111383

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**56.4**	50.3	mg/kg	12.22.19 00.38		10

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P
Tech: DVM % Moisture:
Analyst: ARM Date Prep: 12.21.19 11.00 Basis: Wet Weight
Seq Number: 3111420

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.21.19 17.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	12.21.19 17.15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.21.19 17.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	84	%	70-135	12.21.19 17.15	
o-Terphenyl	84-15-1	81	%	70-135	12.21.19 17.15	

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: KTL % Moisture:
Analyst: KTL Date Prep: 12.24.19 14.45 Basis: Wet Weight
Seq Number: 3111717

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	12.25.19 10.23	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	12.25.19 10.23	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	12.25.19 10.23	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	12.25.19 10.23	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	12.25.19 10.23	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	12.25.19 10.23	U	1
Total BTEX		<0.00201	0.00201	mg/kg	12.25.19 10.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	105	%	70-130	12.25.19 10.23	
1,4-Difluorobenzene	540-36-3	112	%	70-130	12.25.19 10.23	

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Larson and Associates, Inc., Midland, TX

Hayhurst SO 1720 FED PAD 1

Sample Id: **S-9** Matrix: Soil Date Received:12.20.19 16.25
Lab Sample Id: 647299-011 Date Collected: 12.19.19 11.05

Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: CHE Date Prep: 12.22.19 19.00 Basis: Wet Weight
Seq Number: 3111388

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**192**	49.8	mg/kg	12.22.19 20.08		10

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P
Tech: DVM % Moisture:
Analyst: ARM Date Prep: 12.21.19 11.00 Basis: Wet Weight
Seq Number: 3111420

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.21.19 17.57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	12.21.19 17.57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.21.19 17.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	83	%	70-135	12.21.19 17.57	
o-Terphenyl	84-15-1	80	%	70-135	12.21.19 17.57	

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: KTL % Moisture:
Analyst: KTL Date Prep: 12.24.19 14.45 Basis: Wet Weight
Seq Number: 3111717

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	12.25.19 12.02	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	12.25.19 12.02	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	12.25.19 12.02	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	12.25.19 12.02	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	12.25.19 12.02	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	12.25.19 12.02	U	1
Total BTEX		<0.00198	0.00198	mg/kg	12.25.19 12.02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	111	%	70-130	12.25.19 12.02	
4-Bromofluorobenzene	460-00-4	95	%	70-130	12.25.19 12.02	

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Larson and Associates, Inc., Midland, TX

Hayhurst SO 1720 FED PAD 1

Sample Id: **S-10** Matrix: Soil Date Received:12.20.19 16.25

Lab Sample Id: 647299-012 Date Collected: 12.19.19 11.40

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 12.22.19 19.00 Basis: Wet Weight

Seq Number: 3111388

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**95.9**	50.0	mg/kg	12.22.19 20.15		10

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P

Tech: DVM % Moisture:

Analyst: ARM Date Prep: 12.21.19 11.00 Basis: Wet Weight

Seq Number: 3111420

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.21.19 18.18	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.21.19 18.18	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.21.19 18.18	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	84	%	70-135	12.21.19 18.18	
o-Terphenyl	84-15-1	82	%	70-135	12.21.19 18.18	

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B

Tech: KTL % Moisture:

Analyst: KTL Date Prep: 12.24.19 14.45 Basis: Wet Weight

Seq Number: 3111717

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	12.25.19 12.23	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	12.25.19 12.23	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	12.25.19 12.23	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	12.25.19 12.23	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	12.25.19 12.23	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	12.25.19 12.23	U	1
Total BTEX		<0.00199	0.00199	mg/kg	12.25.19 12.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	100	%	70-130	12.25.19 12.23	
1,4-Difluorobenzene	540-36-3	110	%	70-130	12.25.19 12.23	

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Larson and Associates, Inc., Midland, TX

Hayhurst SO 1720 FED PAD 1

Sample Id: **S-10** Matrix: Soil Date Received:12.20.19 16.25
Lab Sample Id: 647299-013 Date Collected: 12.19.19 11.50

Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: CHE Date Prep: 12.22.19 19.00 Basis: Wet Weight
Seq Number: 3111388

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**5.89**	5.03	mg/kg	12.23.19 08.04		1

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P
Tech: DVM % Moisture:
Analyst: ARM Date Prep: 12.21.19 11.00 Basis: Wet Weight
Seq Number: 3111420

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.21.19 18.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	12.21.19 18.39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.21.19 18.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	84	%	70-135	12.21.19 18.39	
o-Terphenyl	84-15-1	80	%	70-135	12.21.19 18.39	

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: KTL % Moisture:
Analyst: KTL Date Prep: 12.24.19 14.45 Basis: Wet Weight
Seq Number: 3111717

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	12.25.19 12.43	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	12.25.19 12.43	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	12.25.19 12.43	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	12.25.19 12.43	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	12.25.19 12.43	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	12.25.19 12.43	U	1
Total BTEX		<0.00198	0.00198	mg/kg	12.25.19 12.43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	112	%	70-130	12.25.19 12.43	
4-Bromofluorobenzene	460-00-4	100	%	70-130	12.25.19 12.43	

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Larson and Associates, Inc., Midland, TX

Hayhurst SO 1720 FED PAD 1

Sample Id: **S-11** Matrix: Soil Date Received:12.20.19 16.25
Lab Sample Id: 647299-014 Date Collected: 12.19.19 11.59

Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: CHE Date Prep: 12.22.19 19.00 Basis: Wet Weight
Seq Number: 3111388

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**46.4**	4.97	mg/kg	12.23.19 08.11		1

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P
Tech: DVM % Moisture:
Analyst: ARM Date Prep: 12.21.19 11.00 Basis: Wet Weight
Seq Number: 3111420

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.21.19 19.00	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	12.21.19 19.00	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.21.19 19.00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	84	%	70-135	12.21.19 19.00	
o-Terphenyl	84-15-1	79	%	70-135	12.21.19 19.00	

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: KTL % Moisture:
Analyst: KTL Date Prep: 12.24.19 14.45 Basis: Wet Weight
Seq Number: 3111717

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	12.25.19 13.04	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	12.25.19 13.04	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	12.25.19 13.04	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	12.25.19 13.04	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	12.25.19 13.04	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	12.25.19 13.04	U	1
Total BTEX		<0.00202	0.00202	mg/kg	12.25.19 13.04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	105	%	70-130	12.25.19 13.04	
1,4-Difluorobenzene	540-36-3	106	%	70-130	12.25.19 13.04	

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Larson and Associates, Inc., Midland, TX

Hayhurst SO 1720 FED PAD 1

Sample Id:	**S-12**	Matrix:	Soil	Date Received:	12.20.19 16.25
Lab Sample Id:	647299-015	Date Collected:	12.19.19 10.43		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	12.22.19 19.00	Basis:	Wet Weight
Seq Number:	3111388				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**103**	49.5	mg/kg	12.22.19 20.48		10

Analytical Method:	TPH By SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	12.21.19 11.00	Basis:	Wet Weight
Seq Number:	3111420				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	12.21.19 19.20	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	12.21.19 19.20	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	12.21.19 19.20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	83	%	70-135	12.21.19 19.20	
o-Terphenyl	84-15-1	81	%	70-135	12.21.19 19.20	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	12.24.19 14.45	Basis:	Wet Weight
Seq Number:	3111717				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	12.25.19 13.24	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	12.25.19 13.24	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	12.25.19 13.24	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	12.25.19 13.24	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	12.25.19 13.24	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	12.25.19 13.24	U	1
Total BTEX		<0.00198	0.00198	mg/kg	12.25.19 13.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	110	%	70-130	12.25.19 13.24	
4-Bromofluorobenzene	460-00-4	100	%	70-130	12.25.19 13.24	

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Larson and Associates, Inc., Midland, TX

Hayhurst SO 1720 FED PAD 1

Sample Id:	**S-12**	Matrix:	Soil	Date Received:	12.20.19 16.25
Lab Sample Id:	647299-016	Date Collected:	12.19.19 10.47		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	12.22.19 19.00	Basis:	Wet Weight
Seq Number:	3111388				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**52.0**	49.5	mg/kg	12.22.19 20.54		10

Analytical Method:	TPH By SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	12.21.19 11.00	Basis:	Wet Weight
Seq Number:	3111420				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.21.19 19.42	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.21.19 19.42	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.21.19 19.42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	12.21.19 19.42	
o-Terphenyl	84-15-1	94	%	70-135	12.21.19 19.42	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	12.24.19 14.45	Basis:	Wet Weight
Seq Number:	3111717				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.25.19 13.44	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.25.19 13.44	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.25.19 13.44	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	12.25.19 13.44	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.25.19 13.44	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.25.19 13.44	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.25.19 13.44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	113	%	70-130	12.25.19 13.44	
4-Bromofluorobenzene	460-00-4	100	%	70-130	12.25.19 13.44	

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Larson and Associates, Inc., Midland, TX

Hayhurst SO 1720 FED PAD 1

Sample Id: **S-13** Matrix: Soil Date Received:12.20.19 16.25
Lab Sample Id: 647299-017 Date Collected: 12.19.19 15.30

Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: CHE Date Prep: 12.22.19 19.00 Basis: Wet Weight
Seq Number: 3111388

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.95	4.95	mg/kg	12.23.19 08.18	U	1

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P
Tech: DVM % Moisture:
Analyst: ARM Date Prep: 12.21.19 11.00 Basis: Wet Weight
Seq Number: 3111420

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.21.19 20.03	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	12.21.19 20.03	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.21.19 20.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	12.21.19 20.03	
o-Terphenyl	84-15-1	86	%	70-135	12.21.19 20.03	

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: KTL % Moisture:
Analyst: KTL Date Prep: 12.24.19 14.45 Basis: Wet Weight
Seq Number: 3111717

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	12.25.19 14.05	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	12.25.19 14.05	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	12.25.19 14.05	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	12.25.19 14.05	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	12.25.19 14.05	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	12.25.19 14.05	U	1
Total BTEX		<0.00199	0.00199	mg/kg	12.25.19 14.05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	111	%	70-130	12.25.19 14.05	
4-Bromofluorobenzene	460-00-4	103	%	70-130	12.25.19 14.05	

Certificate of Analytical Results 647299

Larson and Associates, Inc., Midland, TX

Hayhurst SO 1720 FED PAD 1

Sample Id: **S-13** Matrix: Soil Date Received:12.20.19 16.25
Lab Sample Id: 647299-018 Date Collected: 12.19.19 15.30

Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: CHE Date Prep: 12.22.19 19.00 Basis: Wet Weight
Seq Number: 3111388

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**99.2**	50.3	mg/kg	12.22.19 21.07		10

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P
Tech: DVM % Moisture:
Analyst: ARM Date Prep: 12.21.19 11.00 Basis: Wet Weight
Seq Number: 3111420

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.21.19 20.24	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	12.21.19 20.24	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.21.19 20.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	83	%	70-135	12.21.19 20.24	
o-Terphenyl	84-15-1	81	%	70-135	12.21.19 20.24	

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: KTL % Moisture:
Analyst: KTL Date Prep: 12.24.19 14.45 Basis: Wet Weight
Seq Number: 3111717

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	12.25.19 14.25	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	12.25.19 14.25	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	12.25.19 14.25	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	12.25.19 14.25	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	12.25.19 14.25	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	12.25.19 14.25	U	1
Total BTEX		<0.00201	0.00201	mg/kg	12.25.19 14.25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	97	%	70-130	12.25.19 14.25	
1,4-Difluorobenzene	540-36-3	109	%	70-130	12.25.19 14.25	

Certificate of Analytical Results 647299

Larson and Associates, Inc., Midland, TX

Hayhurst SO 1720 FED PAD 1

Sample Id:	**S-14**	Matrix:	Soil	Date Received:	12.20.19 16.25
Lab Sample Id:	647299-019	Date Collected:	12.19.19 15.40		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	12.22.19 19.00	Basis:	Wet Weight
Seq Number:	3111388				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**38.0**	5.05	mg/kg	12.23.19 08.24		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	12.21.19 11.00	Basis:	Wet Weight
Seq Number:	3111420				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.21.19 20.46	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.21.19 20.46	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.21.19 20.46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	83	%	70-135	12.21.19 20.46	
o-Terphenyl	84-15-1	81	%	70-135	12.21.19 20.46	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	12.24.19 14.45	Basis:	Wet Weight
Seq Number:	3111717				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.25.19 14.46	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.25.19 14.46	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.25.19 14.46	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	12.25.19 14.46	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.25.19 14.46	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.25.19 14.46	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.25.19 14.46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	107	%	70-130	12.25.19 14.46	
4-Bromofluorobenzene	460-00-4	95	%	70-130	12.25.19 14.46	

Certificate of Analytical Results 647299

Larson and Associates, Inc., Midland, TX

Hayhurst SO 1720 FED PAD 1

Sample Id: **S-14** Matrix: Soil Date Received:12.20.19 16.25
Lab Sample Id: 647299-020 Date Collected: 12.19.19 15.40

Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: CHE Date Prep: 12.22.19 19.00 Basis: Wet Weight
Seq Number: 3111388

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**32.2**	5.02	mg/kg	12.23.19 08.31		1

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P
Tech: DVM % Moisture:
Analyst: ARM Date Prep: 12.21.19 11.00 Basis: Wet Weight
Seq Number: 3111420

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.21.19 21.07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	12.21.19 21.07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.21.19 21.07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	85	%	70-135	12.21.19 21.07	
o-Terphenyl	84-15-1	83	%	70-135	12.21.19 21.07	

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: KTL % Moisture:
Analyst: KTL Date Prep: 12.24.19 14.45 Basis: Wet Weight
Seq Number: 3111717

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	12.25.19 15.06	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	12.25.19 15.06	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	12.25.19 15.06	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	12.25.19 15.06	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	12.25.19 15.06	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	12.25.19 15.06	U	1
Total BTEX		<0.00199	0.00199	mg/kg	12.25.19 15.06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	111	%	70-130	12.25.19 15.06	
4-Bromofluorobenzene	460-00-4	105	%	70-130	12.25.19 15.06	

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

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

QC Summary 647299

Larson and Associates, Inc.

Hayhurst SO 1720 FED PAD 1

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3111383 — Matrix: Solid — Date Prep: 12.20.19
MB Sample Id: 7693026-1-BLK — LCS Sample Id: 7693026-1-BKS — LCSD Sample Id: 7693026-1-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	274	110	90-110	1	20	mg/kg	12.21.19 22:04	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3111388 — Matrix: Solid — Date Prep: 12.22.19
MB Sample Id: 7693046-1-BLK — LCS Sample Id: 7693046-1-BKS — LCSD Sample Id: 7693046-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	261	104	262	105	90-110	0	20	mg/kg	12.22.19 19:36	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3111383 — Matrix: Soil — Date Prep: 12.20.19
Parent Sample Id: 647264-023 — MS Sample Id: 647264-023 S — MSD Sample Id: 647264-023 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	7.08	249	292	114	294	115	90-110	1	20	mg/kg	12.21.19 22:20	X

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3111383 — Matrix: Soil — Date Prep: 12.20.19
Parent Sample Id: 647264-032 — MS Sample Id: 647264-032 S — MSD Sample Id: 647264-032 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	15.0	252	293	110	293	110	90-110	0	20	mg/kg	12.21.19 23:34	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3111388 — Matrix: Soil — Date Prep: 12.22.19
Parent Sample Id: 647206-029 — MS Sample Id: 647206-029 S — MSD Sample Id: 647206-029 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	321	248	589	108	579	104	90-110	2	20	mg/kg	12.22.19 19:55	

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

QC Summary 647299

Larson and Associates, Inc.

Hayhurst SO 1720 FED PAD 1

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3111388 Matrix: Soil Date Prep: 12.22.19
Parent Sample Id: 647206-032 MS Sample Id: 647206-032 S MSD Sample Id: 647206-032 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	34.9	249	316	113	309	110	90-110	2	20	mg/kg	12.22.19 21:27	X

Analytical Method: **TPH By SW8015 Mod** Prep Method: SW8015P
Seq Number: 3111420 Matrix: Solid Date Prep: 12.21.19
MB Sample Id: 7693061-1-BLK LCS Sample Id: 7693061-1-BKS LCSD Sample Id: 7693061-1-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)	<15.0	1000	886	89	954	95	70-135	7	20	mg/kg	12.21.19 12:42	
Diesel Range Organics (DRO)	<15.0	1000	860	86	933	93	70-135	8	20	mg/kg	12.21.19 12:42	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	88		106		105		70-135	%	12.21.19 12:42
o-Terphenyl	90		118		102		70-135	%	12.21.19 12:42

Analytical Method: **TPH By SW8015 Mod** Prep Method: SW8015P
Seq Number: 3111420 Matrix: Solid Date Prep: 12.21.19
MB Sample Id: 7693061-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	12.21.19 12:21	

Analytical Method: **TPH By SW8015 Mod** Prep Method: SW8015P
Seq Number: 3111420 Matrix: Soil Date Prep: 12.21.19
Parent Sample Id: 647299-001 MS Sample Id: 647299-001 S MSD Sample Id: 647299-001 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)	<15.0	999	860	86	1620	81	70-135	61	20	mg/kg	12.21.19 13:45	F
Diesel Range Organics (DRO)	<15.0	999	830	83	1610	81	70-135	64	20	mg/kg	12.21.19 13:45	F

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	93		101		70-135	%	12.21.19 13:45
o-Terphenyl	87		92		70-135	%	12.21.19 13:45

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

QC Summary 647299

Larson and Associates, Inc.

Hayhurst SO 1720 FED PAD 1

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3111717 — Matrix: Solid — Date Prep: 12.24.19
MB Sample Id: 7693249-1-BLK — LCS Sample Id: 7693249-1-BKS — LCSD Sample Id: 7693249-1-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	0.119	119	0.108	108	70-130	10	35	mg/kg	12.25.19 04:49	
Toluene	<0.00200	0.100	0.108	108	0.0987	99	70-130	9	35	mg/kg	12.25.19 04:49	
Ethylbenzene	<0.00200	0.100	0.107	107	0.0981	98	70-130	9	35	mg/kg	12.25.19 04:49	
m,p-Xylenes	<0.00400	0.200	0.215	108	0.200	100	70-130	7	35	mg/kg	12.25.19 04:49	
o-Xylene	<0.00200	0.100	0.109	109	0.102	102	70-130	7	35	mg/kg	12.25.19 04:49	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	111		112		113		70-130	%	12.25.19 04:49
4-Bromofluorobenzene	92		98		105		70-130	%	12.25.19 04:49

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3111717 — Matrix: Soil — Date Prep: 12.24.19
Parent Sample Id: 647299-001 — MS Sample Id: 647299-001 S — MSD Sample Id: 647299-001 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	0.0908	91	0.0910	91	70-130	0	35	mg/kg	12.25.19 05:30	
Toluene	<0.00200	0.100	0.0826	83	0.0840	84	70-130	2	35	mg/kg	12.25.19 05:30	
Ethylbenzene	<0.00200	0.100	0.0817	82	0.0837	84	70-130	2	35	mg/kg	12.25.19 05:30	
m,p-Xylenes	<0.00401	0.200	0.164	82	0.170	85	70-130	4	35	mg/kg	12.25.19 05:30	
o-Xylene	<0.00200	0.100	0.0833	83	0.0859	86	70-130	3	35	mg/kg	12.25.19 05:30	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	115		115		70-130	%	12.25.19 05:30
4-Bromofluorobenzene	105		111		70-130	%	12.25.19 05:30

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

Nº 0895

647299

CHAIN-OF-CUSTODY

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

Data Reported to:

DATE: 12/20/2019 PAGE 1 OF 2

PO#: _____ LAB WORK ORDER#: _____

PROJECT LOCATION OR NAME: Haybhurst 30 1720 FED PAD 1

LAI PROJECT #: 19.0180.06 COLLECTOR: DS/EC

TRRP report? ☐ Yes ☒ No

TIME ZONE: Time zone/State:

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

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESSERVED	ANALYSES: BTEX ☒ MTBE ☐	TRPH 418.1 ☐	TPH 1005 ☐	TPH 1006 ☐	GASOLINE MOD 8015 ☒	DIESEL - MOD 8015 ☒	OIL - MOD 8015 ☒	VOC 8260 ☐	SVOC 8270 ☐	PAH 8270 ☐	HOLDPAH ☐	8081 PESTICIDES ☐	8151 HERBICIDES ☐	8082 PCBS ☐	TCLP VOC ☐	TBLP - METALS (RCRA) ☐	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 ☐	CYANIDE ☐	CHLORIDE ☒	PECHLORATE ☐	ANIONS ☐	ALKALINITY ☐	M300	FIELD NOTES
S-1		12.19.19	1320	S	1				X		X			X	X	X	X																													
S-2			1230																																											
S-3			1315																																											
S-4			1350																																											
S-5			1440																																											
S-6			1420																																											
S-7			1250																																											
S-7			1250																																											
S-8			1122																																											
S-8			1130																																											
S-9			1105																																											
S-10			1140																																											
S-10			1150																																											
S-11			1159																																											
S-12			1043																																											
TOTAL	15																																												

RELINQUISHED BY:(Signature) DATE/TIME 12/20/19 1625 RECEIVED BY: (Signature)

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

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

LABORATORY: XENCO

TURN AROUND TIME

NORMAL ☐
1 DAY ☐
2 DAY ☐
OTHER ☒ 4 day

LABORATORY USE ONLY:

RECEIVING TEMP: 4.2 THERM#: R8

CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED

☐ CARRIER BILL # _____

☐ HAND DELIVERED

Nº 0896

647299

CHAIN-OF-CUSTODY

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

Data Reported to:

DATE: 12/20/2019 PAGE 2 OF 2

PO#: LAB WORK ORDER#:

PROJECT LOCATION OR NAME: Haynest SD 1720 FED PAD 1

LAI PROJECT #: 19.0180.06 COLLECTOR: DS/EC

TRRP report? ☐ Yes ☒ No

TIME ZONE: Time zone/State:

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

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESSERVED	ANALYSES: BTEX ☐ MTBE ☐	TRPH 418.1 ☐	TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☒	DIESEL - MOD 8015 ☒	OIL - MOD 8015 ☒	VOC 8260 ☐	SVOC 8270 ☐	PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐	8082 PCBS ☐	8151 HERBICIDES ☐	TBLP - METALS (RCRA) ☐	TCLP - PEST ☐	TCLP VOC ☐	TCLP - HERB ☐	TOTAL METALS (RCRA) ☐	Semi-VOC ☐	LEAD - TOTAL ☐	D.W. 200.8 ☐	OTHER LIST ☐	RCI ☐	TOX ☐	TCLP ☐	TDS ☐	TSS ☐	FLASHPOINT ☐	pH ☐	% MOISTURE ☐	HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐	CYANIDE ☐	CHLORIDE ☒	PECHLORATE ☐	ANIONS ☐	ALKALINITY ☐	M 300	FIELD NOTES
S-12		12.19.19	1047	S	1				X		X			X	X	X																							X					
S-13			1530																																								
S-13			1530																																								
S-14			1540																																								
S-14			1540																																								
TOTAL					5																																						

RELINQUISHED BY:(Signature) DATE/TIME 12/20/19 1625 RECEIVED BY: (Signature)

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

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

LABORATORY: XENCO

TURN AROUND TIME

NORMAL ☐
1 DAY ☐
2 DAY ☐
OTHER ☒
4 DAY

LABORATORY USE ONLY:

RECEIVING TEMP: 4.2 THERM#: R8

CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED

☐ CARRIER BILL #

☐ HAND DELIVERED

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Larson and Associates, Inc.

Date/ Time Received: 12/20/2019 04:25:00 PM

Work Order #: 647299

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

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	4.2
#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?	**Yes**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**No**
#18 Water VOC samples have zero headspace?	**N/A**

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

Analyst: PH Device/Lot#:

Checklist completed by: Connie Hernandez Date: 12/20/2019

Checklist reviewed by: Holly Taylor Date: 12/27/2019

Appendix D

Photographs

2RP-5092 & 2RP-5111
Chevron USA, Inc., Hayhurst SO 17 20 Federal 001 Pad
January 3, 2020

Chevron HH SO 17 20 Federal 001, November 15, 2019

Diesel Spill Area Viewing East, November 15, 2019

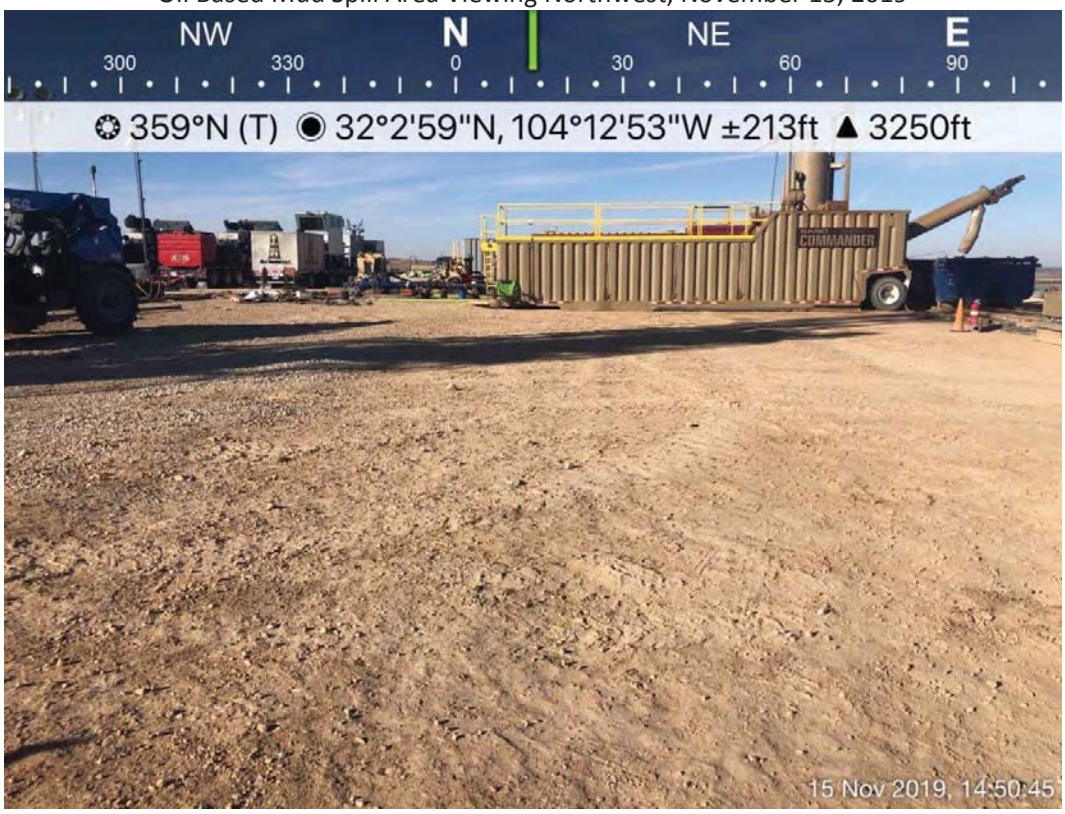
2RP-5092 & 2RP-5111
Chevron USA, Inc., Hayhurst SO 17 20 Federal 001 Pad
January 3, 2020

Diesel Spill Area Viewing South, November 15, 2019

Oil Based Mud Spill Area Viewing Southwest, November 15, 2019

2RP-5092 & 2RP-5111
Chevron USA, Inc., Hayhurst SO 17 20 Federal 001 Pad
January 3, 2020

Oil Based Mud Spill Area Viewing Northwest, November 15, 2019



Oil Based Mud Spill Area Viewing Northeast, November 15, 2019