

Incident ID	nAPP2109651124
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	<u>>101.5</u> (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas not on an exploration, development, production, or storage site?	☐ Yes ☒ No

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

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

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

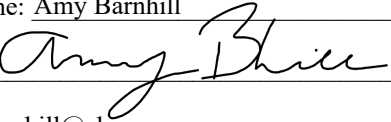
If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods,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

State of New Mexico
Oil Conservation Division

Page 4

Incident ID	nAPP2109651124
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I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Amy Barnhill Title: Waste and Water Specialist
Signature:  Date: 6-7-22
email: ABarnhill@chevron.com Telephone: 432-687-7108

OCD Only

Received by: _____ Date: _____

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Remediation Plan

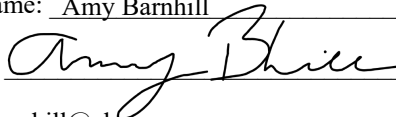
Remediation Plan Checklist: *Each of the following items must be included in the plan.*

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

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

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

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

Printed Name: Amy Barnhill Title: Waste and Water Specialist
Signature:  Date: 6-7-22
email: ABarnhill@chevron.com Telephone: 432-687-7108

OCD Only

Received by: _____ Date: _____

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

Signature:  Date: 06/07/2022

Tracking Number: nAPP2109651124
Delineation Report and Remediation Plan
Salado Draw 13 SWD
Produced Water Release
Lea County, New Mexico

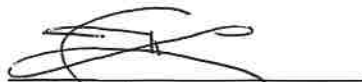
Latitude: N 32.035564°
Longitude: W -103.637997°

LAI Project No. 21-0100-20

June 6, 2022

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

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



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



Robert Nelson
Sr. Geoscientist

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Table of Contents

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

Tables

Table 1	Delineation Soil Sample Analytical Data Summary
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Figures

Figure 1	Topographic Map
Figure 2	Aerial Map Showing Sample Locations
Figure 3	Aerial Map Showing Boring Hole Location
Figure 4	Aerial Map Showing Proposed Excavation Area

Appendices

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

Tracking Number: nAPP2109651124
Delineation Report and Remediation Plan
Salado Draw 13 SWD, Chevron USA, Inc.
Produced Water Release
June 6, 2022

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 (NMOCD) District I for a produced water release at the Salado Draw 13 SWD (Site) located in Unit P (SE/4, SE/4), Section 14, Township 26 South, Range 32 East in Lea County, New Mexico. The geodetic position is North 32.035564° and West -103.637997°. Figure 1 presents a topographic map. Figure 2 presents an aerial map.

1.1 Background

The release was discovered on March 25, 2021, due to a pinhole leak in a ball valve. Chevron reported that 6.44 barrels (bbls) of produced water was released, with 5.5 barrels recovered. The affected area measures approximately 2,597 square feet. The initial C-141 was submitted to OCD District I on April 6, 2021. The release was assigned incident number nAPP2109651124. Appendix A presents the Chevron spill calculation and spill map.

1.2 Physical Setting

The physical setting is as follows:

- The surface elevation is approximately 3,170 feet above mean sea level (msl).
- The surface elevation gradually decreases to the southwest.
- There are no surface water features within 1,000 feet of the Site.
- Karst data provided by the USGS describes the Site as "Medium Risk" potential.
- The soils are designated as Pyote and Maljamar fine sands, consisting of 0 to 30 inches fine sand, underlain by 30 to 60 inches of fine sandy loam.
- Surface geology is Quaternary age (Holocene) sand and silt, which locally includes cover sand (USGS).
- Groundwater occurs at a depth greater than 101.5 feet below ground surface (bgs) based on depth to groundwater measurements 72 hours after drilling a soil bore (BH-1).

Figure 3 presents an aerial map showing the boring location. Appendix B presents USGS data depicting karst risk potential. Appendix C presents the boring log (BH-1).

1.3 Remediation Standards

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

- Benzene 10 mg/Kg
- BTEX 50 mg/Kg
- TPH 2,500 mg/Kg
- Chloride 20,000 mg/Kg

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

Tracking Number: nAPP2109651124
Delineation Report and Remediation Plan
Salado Draw 13 SWD, Chevron USA, Inc.
Produced Water Release
June 6, 2022

2.0 DELINEATION

On May 20, 2021, LAI personnel use a stainless-steel hand auger to collect delineation soil samples from eight (8) locations (S-1 through S-8) within the spill area and four (4) locations (S-9 through S-12) outside the spill area. Soil samples were collected at depths of approximately 0.5 and 1-foot bgs depending on subsurface conditions. The soil samples were delivered under chain of custody and preservation to Eurofins-Xenco Laboratories (Xenco) in Midland, Texas, which analyzed the samples for benzene, toluene, ethylbenzene, and xylenes (BTEX), total petroleum hydrocarbons (TPH), including gasoline range organics (C6-C12), diesel range organics (>C12-C28) and oil range organics (>C28-C35), and chloride by EPA SW-846 Methods 8021B and 8015M, and M300, respectively.

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

Sample ID	Depth (Feet)	Chloride (mg/Kg)
S-1	1	11,300
S-2	1	1,330
S-3	1	1,040
S-4	1	3,220
S-5	1	855
S-6	1	5,460
S-7	0.5	7,060
S-8	1	1,650
S-10	1	2,630

On November 11 and 12, 2021, LAI personnel utilized the Geoprobe 7822DT direct push rig to further delineate sample locations S-1 through S-8 and S-10. Soil samples were collected at one (1), three (3), five (5), and ten (10) feet bgs. An additional horizontal delineation soil sample (S-13) was collected inside the battery containment at a depth of approximately 1-foot bgs. The laboratory analysis confirmed that chloride decreased below 600 mg/Kg between approximately 1 and 5 feet bgs except at S-3 where the chloride concentration decreased below 600 mg/Kg below approximately ten (10) feet bgs.

On May 10, 2022, Scarborough Drilling, Inc. (SDI) under supervision from LAI personnel further delineated S-3 using an air rotary rig to a depth of approximately twenty (20) feet bgs. The laboratory results demonstrate the release was delineated according to the NMOCD requirements Table 1 of 19.15.29.12 NMAC. Figure 2 presents an aerial map showing the delineation soil sample locations. Appendix D presents the laboratory reports. Appendix E presents the photographic documentation.

3.0 REMEDIATION PLAN

Chevron proposes the following remedial actions:

Tracking Number: nAPP2109651124
Delineation Report and Remediation Plan
Salado Draw 13 SWD, Chevron USA, Inc.
Produced Water Release
June 6, 2022

- Excavate soil from an area measuring approximately 2,144 square feet encompassing S-2, S-5, S-8, S-6, S-7, and S-10 to a depth of 2 feet bgs.
- Excavate soil from an area measuring approximately 1,194 square feet encompassing S-1, S-3, and S-4 to a depth of 4.1 feet bgs.
- Collect five (5) point composite bottom and sidewall confirmation soil samples every 200 square feet and analyze for BTEX, TPH and chloride.
- Backfill excavation with clean caliche assuming achievement of OCD remediation levels.
- Prepare report with photographs for submittal to OCD District I.

Figure 4 presents an aerial map showing the proposed excavation area.

Tables

Table 1
Soil Sample Analytical Data Summary
SD 13 SWD
Lea County, New Mexico
32° 02' 10.85" North, 103° 38' 16.73" West

Page 1 of 4

Sample	Depth (Feet)	Collection Date	Status	Benzene (mg/Kg)	BTEX (mg/Kg)	C6 - C10 (mg/Kg)	C10 - C28 (mg/Kg)	C28 - C36 (mg/Kg)	TPH (mg/Kg)	Chloride (mg/Kg)
Remediation Level:				10	50	100/2,500				600/20,000
S-1	0.5	5/20/2021	In-Situ	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	3,750
	1	5/20/2021	In-Situ	0.00252	<0.00401	<49.8	<49.8	<49.8	<49.8	11,300
	1	11/11/2021	In-Situ	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	2,680
	3	11/11/2021	In-Situ	<0.00198	<0.00396	<49.9	<49.9	<49.9	<49.9	1,370
	5	11/11/2021	In-Situ	<0.00198	<0.00396	<49.8	<49.8	<49.8	<49.8	1,190
	10	11/11/2021	In-Situ	<0.00200	<0.00400	<50.0	<50.0	<50.0	<50.0	449
S-2	0.5	5/20/2021	In-Situ	<0.00199	<0.00398	<49.8	<49.8	<49.8	<49.8	3,830
	1	5/20/2021	In-Situ	<0.00200	<0.00400	<49.9	<49.9	<49.9	<49.9	1,330
	1	11/11/2021	In-Situ	<0.00200	<0.00400	<49.8	<49.8	<49.8	<49.8	949
	3	11/11/2021	In-Situ	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	37.3
	5	11/11/2021	In-Situ	<0.00200	<0.00401	<50.0	<50.0	<50.0	<50.0	12.7
	10	11/11/2021	In-Situ	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	114
S-3	0.5	5/20/2021	In-Situ	<0.00200	<0.00400	<49.9	72.7	<49.9	72.7	4,540
	1	5/20/2021	In-Situ	<0.00198	<0.00397	<49.9	<49.9	<49.9	<49.9	1,030
	1	11/11/2021	In-Situ	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	1,040
	3	11/11/2021	In-Situ	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	1,240
	5	11/11/2021	In-Situ	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	752
	10	11/11/2021	In-Situ	<0.00199	<0.00398	<49.8	<49.8	<49.8	<49.8	612
	15	5/10/2022	In-Situ	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	90.2
	20	5/10/2022	In-Situ	<0.00200	<0.00401	<49.9	<49.9	<49.9	<49.9	74.2
S-4	0.5	5/20/2021	In-Situ	<0.00199	<0.00398	<50.0	59.6	<50.0	59.6	2,110
	1	5/20/2021	In-Situ	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	3,220

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Page 2 of 4

Sample	Depth (Feet)	Collection Date	Status	Benzene (mg/Kg)	BTEX (mg/Kg)	C6 - C10 (mg/Kg)	C10 - C28 (mg/Kg)	C28 - C36 (mg/Kg)	TPH (mg/Kg)	Chloride (mg/Kg)
Remediation Level:				10	50	100/2,500				600/20,000
	1	11/11/2021	In-Situ	<0.00200	<0.00401	<49.9	<49.9	<49.9	<49.9	785
	3	11/11/2021	In-Situ	<0.00200	<0.00400	<49.9	<49.9	<49.9	<49.9	633
	5	11/11/2021	In-Situ	<0.00198	<0.00396	<49.9	<49.9	<49.9	<49.9	784
	10	11/11/2021	In-Situ	<0.00198	<0.00397	<49.8	<49.8	<49.8	<49.8	53.0
S-5	0.5	5/20/2021	In-Situ	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	8,660
	1	11/11/2021	In-Situ	<0.00200	<0.00400	<49.7	<49.7	<49.7	<49.7	855
	3	11/11/2021	In-Situ	<0.00198	<0.00397	<49.8	<49.8	<49.8	<49.8	213
	5	11/11/2021	In-Situ	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	588
	10	11/11/2021	In-Situ	<0.00200	<0.00399	<49.8	<49.8	<49.8	<49.8	<5.01
S-6	0.5	5/20/2021	In-Situ	<0.00199	<0.00398	<50.0	54.2	<50.0	54.2	5,550
	1	5/20/2021	In-Situ	<0.00198	<0.00396	<49.8	<49.8	<49.8	<49.8	5,460
	1	11/12/2021	In-Situ	<0.00200	<0.00400	<50.0	<50.0	<50.0	<50.0	68.7
	3	11/12/2021	In-Situ	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	2.44
	5	11/12/2021	In-Situ	<0.00201	<0.00402	<49.8	<49.8	<49.8	<49.8	237
	10	11/12/2021	In-Situ	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	114
S-7	0.5	5/20/2021	In-Situ	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	7,060
	1	11/12/2021	In-Situ	<0.00199	<0.00398	<49.8	<49.8	<49.8	<49.8	723
	3	11/12/2021	In-Situ	<0.00199	<0.00398	<49.7	<49.7	<49.7	<49.7	108
	5	11/12/2021	In-Situ	<0.00200	<0.00400	<49.8	<49.8	<49.8	<49.8	113
	10	11/12/2021	In-Situ	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	41.6
S-8	0.5	5/20/2021	In-Situ	<0.00202	<0.00404	<49.9	<49.9	<49.9	<49.9	4,930

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Page 3 of 4

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Remediation Level:				10	50	100/2,500				600/20,000
	1	5/20/2021	In-Situ	<0.00200	<0.00401	<49.9	59.3	<49.9	59.3	1,650
	1	11/12/2021	In-Situ	<0.00198	<0.00396	<50.0	<50.0	<50.0	<50.0	587
	3	11/12/2021	In-Situ	<0.00201	<0.00402	<49.8	<49.8	<49.8	<49.8	350
	5	11/12/2021	In-Situ	<0.00200	<0.00401	<49.9	<49.9	<49.9	<49.9	455
	10	11/12/2021	In-Situ	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	79.8
S-9	0.5	5/20/2021	In-Situ	<0.00200	<0.00401	<50.0	<50.0	<50.0	<50.0	39.0
	1	5/20/2021	In-Situ	<0.00200	<0.00401	<50.0	<50.0	<50.0	<50.0	25.2
S-10	0.5	5/20/2021	In-Situ	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	6,230
	1	5/20/2021	In-Situ	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	2,630
	1	11/11/2021	In-Situ	<0.00199	<0.00398	<49.8	<49.8	<49.8	<49.8	948
	3	11/11/2021	In-Situ	<0.00199	<0.00398	<49.7	<49.7	<49.7	<49.7	225
	5	11/11/2021	In-Situ	<0.00198	<0.00397	<49.8	<49.8	<49.8	<49.8	28.7
	10	11/11/2021	In-Situ	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	19.2
S-11	0.5	5/20/2021	In-Situ	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	11.6
	1	5/20/2021	In-Situ	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	21.2
S-12	0.5	5/20/2021	In-Situ	<0.00200	<0.00401	<50.0	<50.0	<50.0	<50.0	209
	1	5/20/2021	In-Situ	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	292
S-13	0.5	11/12/2021	In-Situ	<0.00202	<0.00403	<49.9	<49.9	<49.9	<49.9	7.24
	1	11/12/2021	In-Situ	<0.00202	<0.00404	<49.8	<49.8	<49.8	<49.8	12.4

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Remediation Level:				10	50	100/2,500			600/20,000	

Notes: Analysis performed by Xenco Laboratories (Xenco) in Midland, Texas by EPA SW-846 8021B (BTEX), 8015M (TPH), and 300E (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 action limits

Figures

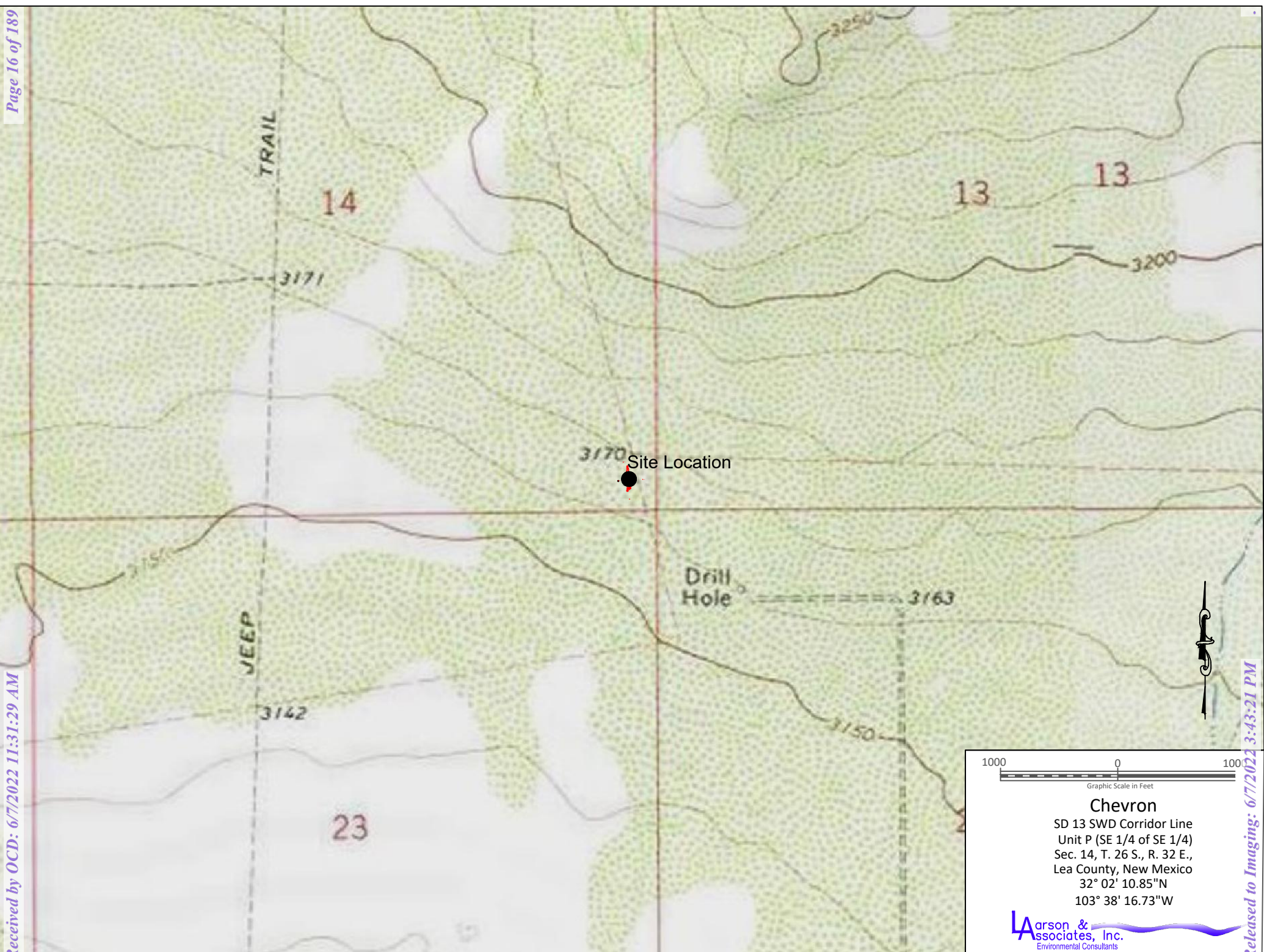
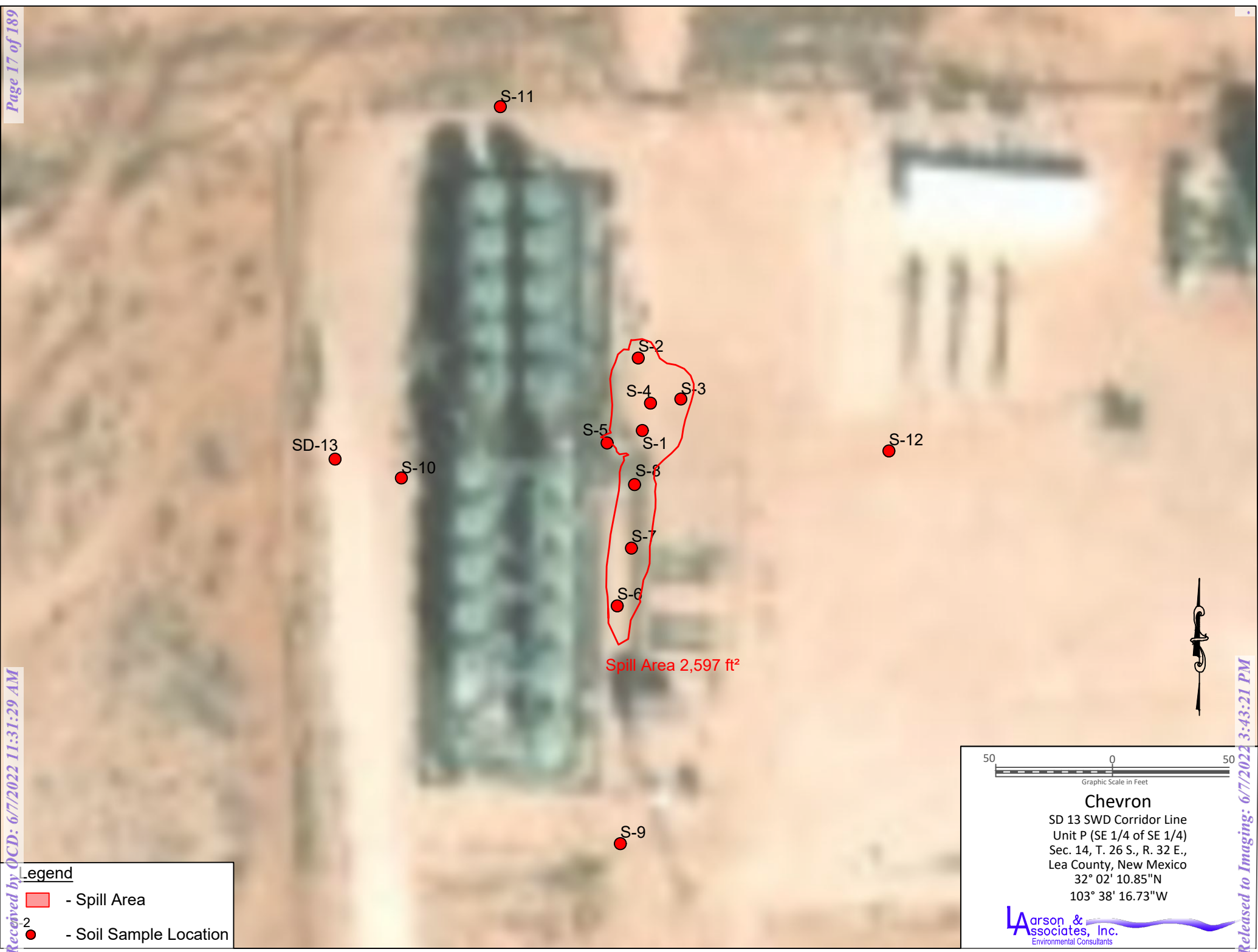


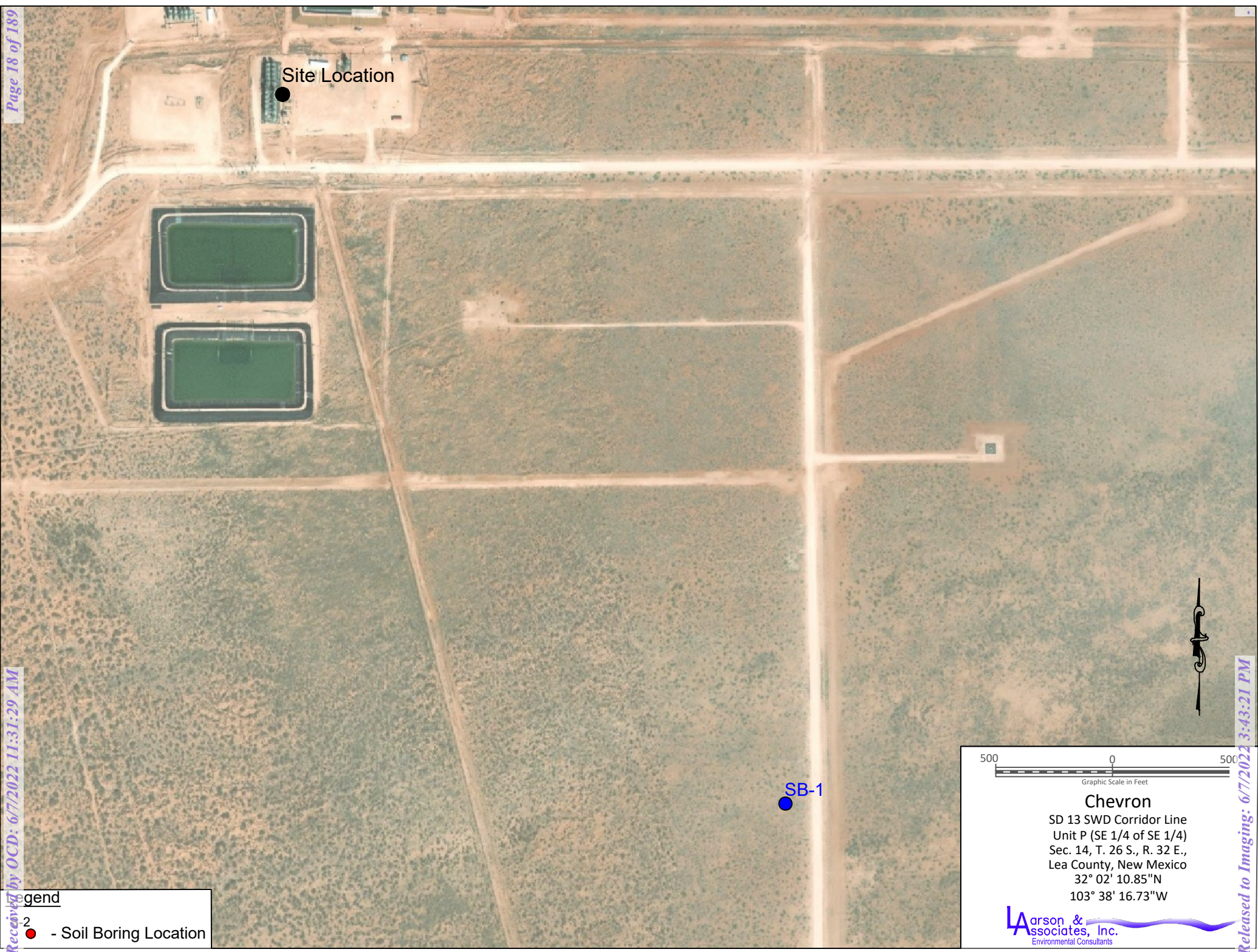
Figure 1 - Topographic Map



Legend

- Spill Area
- Soil Sample Location

Figure 2 - Aerial Map



Site Location

SB-1

Legend
● - Soil Boring Location

500 0 500
Graphic Scale in Feet

Chevron
SD 13 SWD Corridor Line
Unit P (SE 1/4 of SE 1/4)
Sec. 14, T. 26 S., R. 32 E.,
Lea County, New Mexico
32° 02' 10.85"N
103° 38' 16.73"W

Larson & Associates, Inc.
Environmental Consultants

Figure 3 - Aerial Map Showing Soil Bore Location

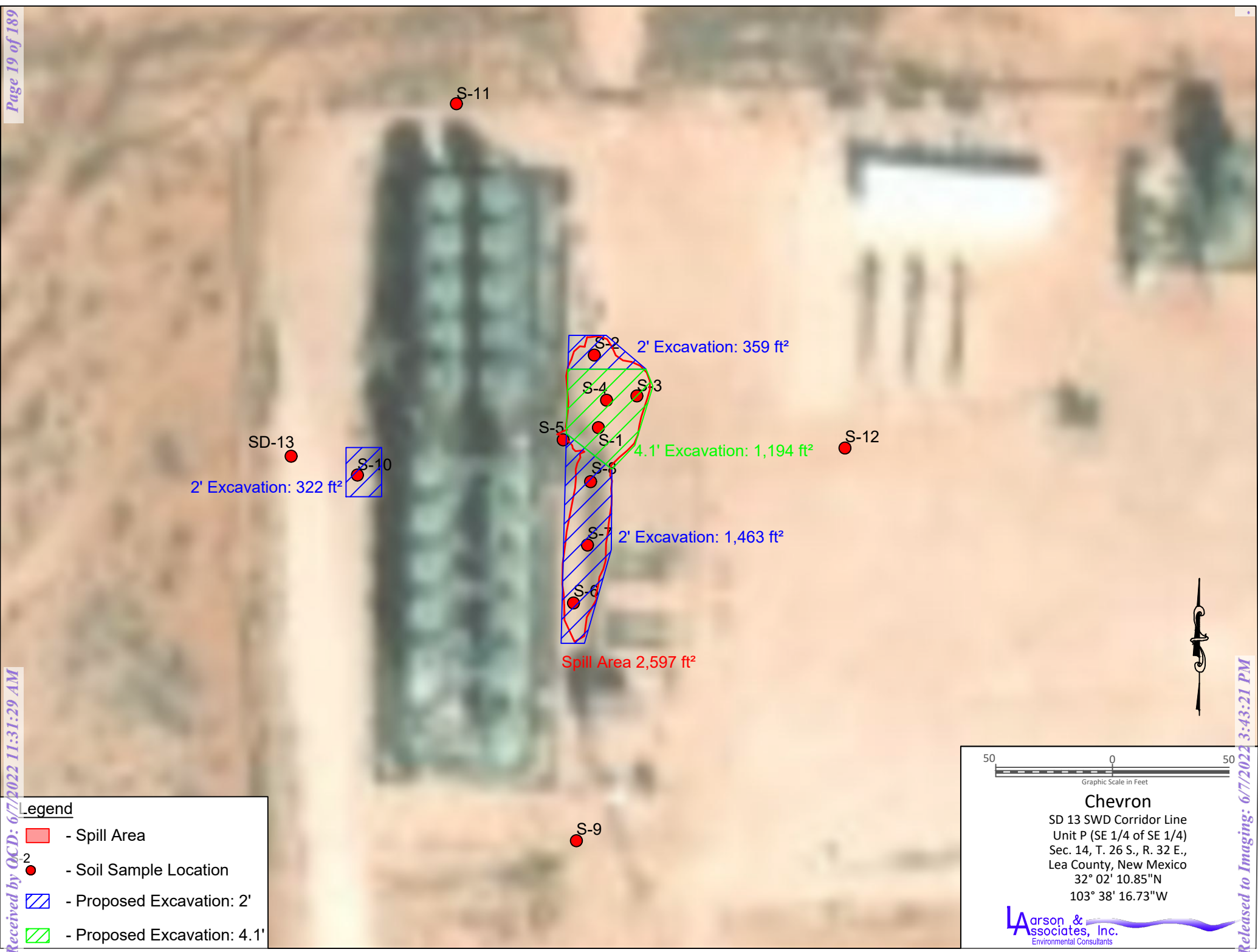


Figure 4 - Aerial Map Showing Proposed Excavation Areas

Appendix A
Chevron Spill Calculation

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural
Resources Department

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

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	nAPP2109651124
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: Chevron USA Inc	OGRID: 4323
Contact Name: Amy Barnhill	Contact Telephone: 432-687-7108
Contact email: ABarnhill@chevron.com	Incident #nAPP2109651124
Contact mailing address: 6301 Deauville Blvd Midland, Tx 79706	

Location of Release Source

Latitude: 32.035564 Longitude: -103.637997
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Salado Draw 13 SWD Discharge Line	Site Type: Oil
Date Release Discovered: 3-25-21	API# (if applicable)

Unit Letter	Section	Township	Range	County
P	23	26S	32E	Lea

Surface Owner: ☐ State ☒ Federal ☐ Tribal ☐ Private (Name: _____)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

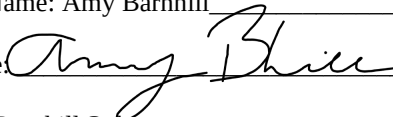
☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls): 6.44	Volume Recovered (bbls): 5.5
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☒ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release: Spill was due to a pin hole leak in the spool piece on the common discharge line off of the three charge pumps.
Immediate Actions Taken: Shut off pumps. Isolated closest upstream and downstream isolation valves for spool piece.

Was this a major release as defined by 19.15.29.7(A) NMAC? ☐ Yes ☒ No	If YES, for what reason(s) does the responsible party consider this a major release?
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?	

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

☒ The source of the release has been stopped. ☒ The impacted area has been secured to protect human health and the environment. ☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. ☒ All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
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 _____ Signature:  _____ email: ABarnhill@chevron.com _____	Title: Water Specialist _____ Date: 4-6-21 _____ Telephone: 432-687-7108
<u>OCD Only</u> Received by: _____ Date: _____	

Spill Calculations

Area 1

Shape:Rectangle

Secondary Containment?:No

Standing Liquid Dimensions: 18 ft x 9 ft x 1 in

Standing Liquid Volume:2.404 bbl

Oil Skim Dimensions: 18 ft x 9 ft x 0 in

Oil Volume: .000 bbl

Penetration Depth: 0 in

Water to Soil Volume: .000 bbl

Water Volume:**2.404 bbl**

Area 2

Shape:Rectangle

Secondary Containment?:No

Standing Liquid Dimensions:30 ft x 9 ft x 1 in

Standing Liquid Volume:4.007 bbl

Oil Skim Dimensions:30 ft x 9 ft x 0 in

Oil Volume: .000 bbl

Penetration Depth:0 in

Water to Soil Volume: .000 bbl

Water Volume:**4.007 bbl**

Area 3

Shape:Rectangle

Secondary Containment?:No

Standing Liquid Dimensions:4 ft x 2 ft x .25 in

Standing Liquid Volume:.030 bbl

Oil Skim Dimensions:4 ft x 2 ft x 0 in

Oil Volume: .000 bbl

Penetration Depth:0 in

Water to Soil Volume: .000 bbl

Water Volume:**0.03 bbl**

Appendix B
Karst Risk Potential



Appendix C

Boring Log

BORING RECORD

GEOLOGIC UNIT	DEPTH	Start: 10:35 MDT Finish: 15:15 DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG	PID READING										SAMPLE			REMARKS		
					PPM X <u>1</u>										NUMBER	PID READING	RECOVERY	DEPTH	BACKGROUND PID READING	
					2	4	6	8	10	12	14	16	18							
	0	Silty Sand, 5YR 5/4, Reddish Brown, Very Fine Grained Quartz Sand, Poorly Sorted, Dry	ML																	
	5															1				
	10	Caliche, 2.5YR 8/3, Pink, Very Fine Grained, Poorly Sorted, Dry																		
	15		Caliche																	
	20																			
	25															2				
	30	Silty Sand, 5YR 5/4, Reddish Brown, Fine Grained Quartz Sand with Caliche Clasts (~10mm), Poorly Sorted	ML													3				
	35	Caliche, 2.5YR 8/3, Pink, Very Fine Grained, Poorly Sorted with Subangular Clasts (~10mm)	Caliche																	
	40															4				
	45	Silty Sand, 5YR 6/4, Light Reddish Brown, Very Fine Grained Quartz Sand, Poorly Sorted with Subangular Caliche Clasts (~10mm)																		
	50		ML																	
	55																			
	60																			

☐ ONE CONTINUOUS AUGER SAMPLER

WATER TABLE (TIME OF BORING)

☐ STANDARD PENETRATION TEST

LABORATORY TEST LOCATION

☐ UNDISTURBED SAMPLE

PENETROMETER (TONS/ SQ. FT)

WATER TABLE (24 HRS)

NO RECOVERY

JOB NUMBER : Chevron/ 19-0180-01HOLE DIAMETER : 2"LOCATION : Salado Draw 24 CTBLAI GEOLOGIST : E. ChavezDRILLING CONTRACTOR : ScarboroughDRILLING METHOD : Air Rotary

Larson & Associates, Inc.
Environmental Consultants

 DRILL DATE :
04-14-2020

 BORING NUMBER :
SB-01

BORING RECORD

GEOLOGIC UNIT	DEPTH	Start: 10:35 MDT Finish: 15:15 DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG	PID READING										SAMPLE			REMARKS			
					PPM X <u>1</u>										NUMBER	PID READING	RECOVERY	DEPTH	BACKGROUND PID READING		
					2	4	6	8	10	12	14	16	18	SOIL : _____ PPM						SOIL : _____ PPM	
	65	Silty Sand, 5YR 5/6, Yellowish Red, Very Fine Grained, Poorly Sorted with Subangular Caliche and Black Chert Clasts (~0.5mm)	ML												5			66			
	70																		70		
	75																			75	
	80																			80	
	85																			85	
	90	Silty Sand, 5YR 4/6, Yellowish Red, Fine Grained, Poorly Sorted with Subangular Caliche (~2mm)	ML															90			
	95																		95		
	100																		100		
	101.5															6			101.5		
	105																		105		
		TD:101.5' Dry After 72 Hours																			

ONE CONTINUOUS AUGER SAMPLER	WATER TABLE (TIME OF BORING)	JOB NUMBER : <u>Chevron/ 19-0180-01</u>
STANDARD PENETRATION TEST	LABORATORY TEST LOCATION	HOLE DIAMETER : <u>2"</u>
UNDISTURBED SAMPLE	PENETROMETER (TONS/ SQ. FT)	LOCATION : <u>Salado Draw 24 CTB</u>
WATER TABLE (24 HRS)	NO RECOVERY	LAI GEOLOGIST : <u>E. Chavez</u>

	DRILL DATE : <u>04-14-2020</u>	BORING NUMBER : <u>SB-01</u>	DRILLING CONTRACTOR : <u>Scarborough</u>
			DRILLING METHOD : <u>Air Rotary</u>

Appendix D
Laboratory Reports



Environment Testing America

ANALYTICAL REPORT

Eurofins Xenco, Midland
1211 W. Florida Ave
Midland, TX 79701
Tel: (432)704-5440

Laboratory Job ID: 880-2354-1
Client Project/Site: SD 13 SWD

For:
Larson & Associates, Inc.
507 N Marienfeld
Suite 202
Midland, Texas 79701

Attn: Mr. Mark J Larson

Holly Taylor

Authorized for release by:
5/26/2021 5:14:33 PM

Holly Taylor, Project Manager
(806)794-1296
holly.taylor@eurofinset.com

LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:

www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Laboratory Job ID: 880-2354-1

Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Client Sample Results	5
Surrogate Summary	20
QC Sample Results	22
QC Association Summary	30
Lab Chronicle	35
Certification Summary	41
Method Summary	42
Sample Summary	43
Chain of Custody	44
Receipt Checklists	46

1

2

3

4

5

6

7

8

9

10

11

12

13

14

Definitions/Glossary

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-2354-1

Qualifiers

GC VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
S1-	Surrogate recovery exceeds control limits, low biased.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Eurofins Xenco, Midland

Case Narrative

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-2354-1

Job ID: 880-2354-1**Laboratory: Eurofins Xenco, Midland****Narrative****Job Narrative
880-2354-1****Receipt**

The samples were received on 5/21/2021 8:56 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.6°C

GC VOA

Method 8021B: Surrogate recovery for the following samples were outside control limits: S-11 0.5 (880-2354-19) and S-11 1 (880-2354-20). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for the following sample associated with preparation batch 880-3332 and analytical batch 880-3336 were outside control limits: (LCS 880-3332/1-A), (LCSD 880-3332/2-A), (880-2354-A-21-A MS) and (880-2354-A-21-B MSD). The associated laboratory control sample (LCS) recovery met acceptance criteria.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA

Method 8015MOD_NM: The continuing calibration verification (CCV) associated with batch 880-3369 recovered above the upper control limit for Diesel Range Organics (Over C10-C28) The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The samples associated with this CCV that had a detection in this range were only reported if there were multiple runs to confirm.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-2354-1

Client Sample ID: S-1 .5

Lab Sample ID: 880-2354-1

Date Collected: 05/20/21 08:00

Matrix: Solid

Date Received: 05/21/21 08:56

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		05/21/21 09:48	05/22/21 00:01	1
Toluene	<0.00200	U	0.00200	mg/Kg		05/21/21 09:48	05/22/21 00:01	1
Ethylbenzene	<0.00200	U F1	0.00200	mg/Kg		05/21/21 09:48	05/22/21 00:01	1
m-Xylene & p-Xylene	<0.00399	U F1	0.00399	mg/Kg		05/21/21 09:48	05/22/21 00:01	1
o-Xylene	<0.00200	U F1	0.00200	mg/Kg		05/21/21 09:48	05/22/21 00:01	1
Xylenes, Total	<0.00399	U F1	0.00399	mg/Kg		05/21/21 09:48	05/22/21 00:01	1
Total BTEX	<0.00399	U	0.00399	mg/Kg		05/21/21 09:48	05/22/21 00:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		70 - 130	05/21/21 09:48	05/22/21 00:01	1
1,4-Difluorobenzene (Surr)	122		70 - 130	05/21/21 09:48	05/22/21 00:01	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		05/21/21 13:30	05/21/21 21:15	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		05/21/21 13:30	05/21/21 21:15	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		05/21/21 13:30	05/21/21 21:15	1
Total TPH	<49.9	U	49.9	mg/Kg		05/21/21 13:30	05/21/21 21:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	91		70 - 130	05/21/21 13:30	05/21/21 21:15	1
o-Terphenyl	89		70 - 130	05/21/21 13:30	05/21/21 21:15	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3750		24.8	mg/Kg			05/22/21 10:03	5

Client Sample ID: S-1 1

Lab Sample ID: 880-2354-2

Date Collected: 05/20/21 08:01

Matrix: Solid

Date Received: 05/21/21 08:56

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.00252		0.00200	mg/Kg		05/21/21 09:48	05/22/21 00:22	1
Toluene	<0.00200	U	0.00200	mg/Kg		05/21/21 09:48	05/22/21 00:22	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		05/21/21 09:48	05/22/21 00:22	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		05/21/21 09:48	05/22/21 00:22	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		05/21/21 09:48	05/22/21 00:22	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		05/21/21 09:48	05/22/21 00:22	1
Total BTEX	<0.00401	U	0.00401	mg/Kg		05/21/21 09:48	05/22/21 00:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		70 - 130	05/21/21 09:48	05/22/21 00:22	1
1,4-Difluorobenzene (Surr)	135	S1+	70 - 130	05/21/21 09:48	05/22/21 00:22	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8	mg/Kg		05/21/21 13:30	05/21/21 22:18	1

Eurofins Xenco, Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-2354-1

Client Sample ID: S-1 1

Lab Sample ID: 880-2354-2

Date Collected: 05/20/21 08:01

Matrix: Solid

Date Received: 05/21/21 08:56

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8	mg/Kg		05/21/21 13:30	05/21/21 22:18	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		05/21/21 13:30	05/21/21 22:18	1
Total TPH	<49.8	U	49.8	mg/Kg		05/21/21 13:30	05/21/21 22:18	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	91		70 - 130			05/21/21 13:30	05/21/21 22:18	1
o-Terphenyl	90		70 - 130			05/21/21 13:30	05/21/21 22:18	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	11300		99.0	mg/Kg			05/22/21 10:08	20

Client Sample ID: S-2 .5

Lab Sample ID: 880-2354-3

Date Collected: 05/20/21 08:02

Matrix: Solid

Date Received: 05/21/21 08:56

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		05/21/21 09:48	05/22/21 00:43	1
Toluene	<0.00199	U	0.00199	mg/Kg		05/21/21 09:48	05/22/21 00:43	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		05/21/21 09:48	05/22/21 00:43	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		05/21/21 09:48	05/22/21 00:43	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		05/21/21 09:48	05/22/21 00:43	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		05/21/21 09:48	05/22/21 00:43	1
Total BTEX	<0.00398	U	0.00398	mg/Kg		05/21/21 09:48	05/22/21 00:43	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		70 - 130			05/21/21 09:48	05/22/21 00:43	1
1,4-Difluorobenzene (Surr)	107		70 - 130			05/21/21 09:48	05/22/21 00:43	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8	mg/Kg		05/21/21 13:30	05/21/21 22:39	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8	mg/Kg		05/21/21 13:30	05/21/21 22:39	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		05/21/21 13:30	05/21/21 22:39	1
Total TPH	<49.8	U	49.8	mg/Kg		05/21/21 13:30	05/21/21 22:39	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	89		70 - 130			05/21/21 13:30	05/21/21 22:39	1
o-Terphenyl	89		70 - 130			05/21/21 13:30	05/21/21 22:39	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3830		25.2	mg/Kg			05/22/21 10:13	5

Eurofins Xenco, Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-2354-1

Client Sample ID: S-2 1

Lab Sample ID: 880-2354-4

Date Collected: 05/20/21 08:03

Matrix: Solid

Date Received: 05/21/21 08:56

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		05/21/21 09:48	05/22/21 01:03	1
Toluene	<0.00200	U	0.00200	mg/Kg		05/21/21 09:48	05/22/21 01:03	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		05/21/21 09:48	05/22/21 01:03	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		05/21/21 09:48	05/22/21 01:03	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		05/21/21 09:48	05/22/21 01:03	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		05/21/21 09:48	05/22/21 01:03	1
Total BTEX	<0.00400	U	0.00400	mg/Kg		05/21/21 09:48	05/22/21 01:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		70 - 130	05/21/21 09:48	05/22/21 01:03	1
1,4-Difluorobenzene (Surr)	123		70 - 130	05/21/21 09:48	05/22/21 01:03	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		05/21/21 13:30	05/21/21 23:00	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		05/21/21 13:30	05/21/21 23:00	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		05/21/21 13:30	05/21/21 23:00	1
Total TPH	<49.9	U	49.9	mg/Kg		05/21/21 13:30	05/21/21 23:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	89		70 - 130	05/21/21 13:30	05/21/21 23:00	1
o-Terphenyl	87		70 - 130	05/21/21 13:30	05/21/21 23:00	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1330		25.1	mg/Kg			05/22/21 10:18	5

Client Sample ID: S-3 .5

Lab Sample ID: 880-2354-5

Date Collected: 05/20/21 08:04

Matrix: Solid

Date Received: 05/21/21 08:56

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		05/21/21 09:48	05/22/21 01:24	1
Toluene	<0.00200	U	0.00200	mg/Kg		05/21/21 09:48	05/22/21 01:24	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		05/21/21 09:48	05/22/21 01:24	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		05/21/21 09:48	05/22/21 01:24	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		05/21/21 09:48	05/22/21 01:24	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		05/21/21 09:48	05/22/21 01:24	1
Total BTEX	<0.00400	U	0.00400	mg/Kg		05/21/21 09:48	05/22/21 01:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		70 - 130	05/21/21 09:48	05/22/21 01:24	1
1,4-Difluorobenzene (Surr)	122		70 - 130	05/21/21 09:48	05/22/21 01:24	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		05/21/21 13:30	05/21/21 23:21	1

Eurofins Xenco, Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-2354-1

Client Sample ID: S-3 .5

Lab Sample ID: 880-2354-5

Date Collected: 05/20/21 08:04

Matrix: Solid

Date Received: 05/21/21 08:56

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	72.7		49.9	mg/Kg		05/21/21 13:30	05/21/21 23:21	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		05/21/21 13:30	05/21/21 23:21	1
Total TPH	72.7		49.9	mg/Kg		05/21/21 13:30	05/21/21 23:21	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	87		70 - 130			05/21/21 13:30	05/21/21 23:21	1
o-Terphenyl	86		70 - 130			05/21/21 13:30	05/21/21 23:21	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4540		50.2	mg/Kg			05/22/21 10:34	10

Client Sample ID: S-3 1

Lab Sample ID: 880-2354-6

Date Collected: 05/20/21 08:05

Matrix: Solid

Date Received: 05/21/21 08:56

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198	mg/Kg		05/21/21 09:48	05/22/21 01:45	1
Toluene	<0.00198	U	0.00198	mg/Kg		05/21/21 09:48	05/22/21 01:45	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		05/21/21 09:48	05/22/21 01:45	1
m-Xylene & p-Xylene	<0.00397	U	0.00397	mg/Kg		05/21/21 09:48	05/22/21 01:45	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		05/21/21 09:48	05/22/21 01:45	1
Xylenes, Total	<0.00397	U	0.00397	mg/Kg		05/21/21 09:48	05/22/21 01:45	1
Total BTEX	<0.00397	U	0.00397	mg/Kg		05/21/21 09:48	05/22/21 01:45	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	106		70 - 130			05/21/21 09:48	05/22/21 01:45	1
1,4-Difluorobenzene (Surr)	120		70 - 130			05/21/21 09:48	05/22/21 01:45	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		05/21/21 13:30	05/21/21 23:42	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		05/21/21 13:30	05/21/21 23:42	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		05/21/21 13:30	05/21/21 23:42	1
Total TPH	<49.9	U	49.9	mg/Kg		05/21/21 13:30	05/21/21 23:42	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	90		70 - 130			05/21/21 13:30	05/21/21 23:42	1
o-Terphenyl	90		70 - 130			05/21/21 13:30	05/21/21 23:42	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1030		24.9	mg/Kg			05/22/21 10:39	5

Eurofins Xenco, Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-2354-1

Client Sample ID: S-4 .5

Lab Sample ID: 880-2354-7

Date Collected: 05/20/21 08:06

Matrix: Solid

Date Received: 05/21/21 08:56

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		05/21/21 09:48	05/22/21 02:06	1
Toluene	<0.00199	U	0.00199	mg/Kg		05/21/21 09:48	05/22/21 02:06	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		05/21/21 09:48	05/22/21 02:06	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		05/21/21 09:48	05/22/21 02:06	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		05/21/21 09:48	05/22/21 02:06	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		05/21/21 09:48	05/22/21 02:06	1
Total BTEX	<0.00398	U	0.00398	mg/Kg		05/21/21 09:48	05/22/21 02:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		70 - 130	05/21/21 09:48	05/22/21 02:06	1
1,4-Difluorobenzene (Surr)	123		70 - 130	05/21/21 09:48	05/22/21 02:06	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		05/21/21 13:30	05/22/21 00:03	1
Diesel Range Organics (Over C10-C28)	59.6		50.0	mg/Kg		05/21/21 13:30	05/22/21 00:03	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		05/21/21 13:30	05/22/21 00:03	1
Total TPH	59.6		50.0	mg/Kg		05/21/21 13:30	05/22/21 00:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	54	S1-	70 - 130	05/21/21 13:30	05/22/21 00:03	1
o-Terphenyl	97		70 - 130	05/21/21 13:30	05/22/21 00:03	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2110		25.2	mg/Kg			05/22/21 10:44	5

Client Sample ID: S-4 1

Lab Sample ID: 880-2354-8

Date Collected: 05/20/21 08:07

Matrix: Solid

Date Received: 05/21/21 08:56

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		05/21/21 09:48	05/22/21 02:26	1
Toluene	<0.00201	U	0.00201	mg/Kg		05/21/21 09:48	05/22/21 02:26	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		05/21/21 09:48	05/22/21 02:26	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		05/21/21 09:48	05/22/21 02:26	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		05/21/21 09:48	05/22/21 02:26	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		05/21/21 09:48	05/22/21 02:26	1
Total BTEX	<0.00402	U	0.00402	mg/Kg		05/21/21 09:48	05/22/21 02:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		70 - 130	05/21/21 09:48	05/22/21 02:26	1
1,4-Difluorobenzene (Surr)	118		70 - 130	05/21/21 09:48	05/22/21 02:26	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		05/21/21 13:30	05/22/21 00:24	1

Eurofins Xenco, Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-2354-1

Client Sample ID: S-4 1

Lab Sample ID: 880-2354-8

Date Collected: 05/20/21 08:07

Matrix: Solid

Date Received: 05/21/21 08:56

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		05/21/21 13:30	05/22/21 00:24	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		05/21/21 13:30	05/22/21 00:24	1
Total TPH	<50.0	U	50.0	mg/Kg		05/21/21 13:30	05/22/21 00:24	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	86		70 - 130			05/21/21 13:30	05/22/21 00:24	1
o-Terphenyl	85		70 - 130			05/21/21 13:30	05/22/21 00:24	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3220		24.9	mg/Kg			05/22/21 10:49	5

Client Sample ID: S-5 .5

Lab Sample ID: 880-2354-9

Date Collected: 05/20/21 08:08

Matrix: Solid

Date Received: 05/21/21 08:56

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		05/21/21 09:48	05/22/21 02:47	1
Toluene	<0.00199	U	0.00199	mg/Kg		05/21/21 09:48	05/22/21 02:47	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		05/21/21 09:48	05/22/21 02:47	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		05/21/21 09:48	05/22/21 02:47	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		05/21/21 09:48	05/22/21 02:47	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		05/21/21 09:48	05/22/21 02:47	1
Total BTEX	<0.00398	U	0.00398	mg/Kg		05/21/21 09:48	05/22/21 02:47	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		70 - 130			05/21/21 09:48	05/22/21 02:47	1
1,4-Difluorobenzene (Surr)	132	S1+	70 - 130			05/21/21 09:48	05/22/21 02:47	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		05/21/21 13:30	05/22/21 00:45	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		05/21/21 13:30	05/22/21 00:45	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		05/21/21 13:30	05/22/21 00:45	1
Total TPH	<49.9	U	49.9	mg/Kg		05/21/21 13:30	05/22/21 00:45	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	89		70 - 130			05/21/21 13:30	05/22/21 00:45	1
o-Terphenyl	87		70 - 130			05/21/21 13:30	05/22/21 00:45	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8660		50.5	mg/Kg			05/22/21 10:55	10

Eurofins Xenco, Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-2354-1

Client Sample ID: S-6 .5

Lab Sample ID: 880-2354-10

Date Collected: 05/20/21 08:09

Matrix: Solid

Date Received: 05/21/21 08:56

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		05/21/21 09:48	05/22/21 03:08	1
Toluene	<0.00199	U	0.00199	mg/Kg		05/21/21 09:48	05/22/21 03:08	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		05/21/21 09:48	05/22/21 03:08	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		05/21/21 09:48	05/22/21 03:08	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		05/21/21 09:48	05/22/21 03:08	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		05/21/21 09:48	05/22/21 03:08	1
Total BTEX	<0.00398	U	0.00398	mg/Kg		05/21/21 09:48	05/22/21 03:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		70 - 130	05/21/21 09:48	05/22/21 03:08	1
1,4-Difluorobenzene (Surr)	118		70 - 130	05/21/21 09:48	05/22/21 03:08	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		05/21/21 13:30	05/22/21 01:06	1
Diesel Range Organics (Over C10-C28)	54.2		50.0	mg/Kg		05/21/21 13:30	05/22/21 01:06	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		05/21/21 13:30	05/22/21 01:06	1
Total TPH	54.2		50.0	mg/Kg		05/21/21 13:30	05/22/21 01:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	43	S1-	70 - 130	05/21/21 13:30	05/22/21 01:06	1
o-Terphenyl	86		70 - 130	05/21/21 13:30	05/22/21 01:06	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5550		50.5	mg/Kg			05/22/21 11:00	10

Client Sample ID: S-6 1

Lab Sample ID: 880-2354-11

Date Collected: 05/20/21 08:10

Matrix: Solid

Date Received: 05/21/21 08:56

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198	mg/Kg		05/21/21 09:48	05/22/21 04:33	1
Toluene	<0.00198	U	0.00198	mg/Kg		05/21/21 09:48	05/22/21 04:33	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		05/21/21 09:48	05/22/21 04:33	1
m-Xylene & p-Xylene	<0.00396	U	0.00396	mg/Kg		05/21/21 09:48	05/22/21 04:33	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		05/21/21 09:48	05/22/21 04:33	1
Xylenes, Total	<0.00396	U	0.00396	mg/Kg		05/21/21 09:48	05/22/21 04:33	1
Total BTEX	<0.00396	U	0.00396	mg/Kg		05/21/21 09:48	05/22/21 04:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		70 - 130	05/21/21 09:48	05/22/21 04:33	1
1,4-Difluorobenzene (Surr)	122		70 - 130	05/21/21 09:48	05/22/21 04:33	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8	mg/Kg		05/21/21 13:30	05/22/21 01:48	1

Eurofins Xenco, Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-2354-1

Client Sample ID: S-6 1

Lab Sample ID: 880-2354-11

Date Collected: 05/20/21 08:10

Matrix: Solid

Date Received: 05/21/21 08:56

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8	mg/Kg		05/21/21 13:30	05/22/21 01:48	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		05/21/21 13:30	05/22/21 01:48	1
Total TPH	<49.8	U	49.8	mg/Kg		05/21/21 13:30	05/22/21 01:48	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	104		70 - 130			05/21/21 13:30	05/22/21 01:48	1
o-Terphenyl	103		70 - 130			05/21/21 13:30	05/22/21 01:48	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5460		49.8	mg/Kg			05/25/21 19:19	10

Client Sample ID: S-7 .5

Lab Sample ID: 880-2354-12

Date Collected: 05/20/21 08:11

Matrix: Solid

Date Received: 05/21/21 08:56

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		05/21/21 09:48	05/22/21 04:53	1
Toluene	<0.00201	U	0.00201	mg/Kg		05/21/21 09:48	05/22/21 04:53	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		05/21/21 09:48	05/22/21 04:53	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		05/21/21 09:48	05/22/21 04:53	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		05/21/21 09:48	05/22/21 04:53	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		05/21/21 09:48	05/22/21 04:53	1
Total BTEX	<0.00402	U	0.00402	mg/Kg		05/21/21 09:48	05/22/21 04:53	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		70 - 130			05/21/21 09:48	05/22/21 04:53	1
1,4-Difluorobenzene (Surr)	119		70 - 130			05/21/21 09:48	05/22/21 04:53	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		05/21/21 13:30	05/22/21 02:09	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		05/21/21 13:30	05/22/21 02:09	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		05/21/21 13:30	05/22/21 02:09	1
Total TPH	<49.9	U	49.9	mg/Kg		05/21/21 13:30	05/22/21 02:09	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	86		70 - 130			05/21/21 13:30	05/22/21 02:09	1
o-Terphenyl	84		70 - 130			05/21/21 13:30	05/22/21 02:09	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7060		49.9	mg/Kg			05/25/21 19:34	10

Eurofins Xenco, Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-2354-1

Client Sample ID: S-8 .5

Lab Sample ID: 880-2354-13

Date Collected: 05/20/21 08:12

Matrix: Solid

Date Received: 05/21/21 08:56

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202	mg/Kg		05/21/21 09:48	05/22/21 05:14	1
Toluene	<0.00202	U	0.00202	mg/Kg		05/21/21 09:48	05/22/21 05:14	1
Ethylbenzene	<0.00202	U	0.00202	mg/Kg		05/21/21 09:48	05/22/21 05:14	1
m-Xylene & p-Xylene	<0.00404	U	0.00404	mg/Kg		05/21/21 09:48	05/22/21 05:14	1
o-Xylene	<0.00202	U	0.00202	mg/Kg		05/21/21 09:48	05/22/21 05:14	1
Xylenes, Total	<0.00404	U	0.00404	mg/Kg		05/21/21 09:48	05/22/21 05:14	1
Total BTEX	<0.00404	U	0.00404	mg/Kg		05/21/21 09:48	05/22/21 05:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		70 - 130	05/21/21 09:48	05/22/21 05:14	1
1,4-Difluorobenzene (Surr)	122		70 - 130	05/21/21 09:48	05/22/21 05:14	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		05/21/21 13:30	05/22/21 02:30	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		05/21/21 13:30	05/22/21 02:30	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		05/21/21 13:30	05/22/21 02:30	1
Total TPH	<49.9	U	49.9	mg/Kg		05/21/21 13:30	05/22/21 02:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	86		70 - 130	05/21/21 13:30	05/22/21 02:30	1
o-Terphenyl	86		70 - 130	05/21/21 13:30	05/22/21 02:30	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4930		25.1	mg/Kg			05/25/21 19:39	5

Client Sample ID: S-8 1

Lab Sample ID: 880-2354-14

Date Collected: 05/20/21 08:13

Matrix: Solid

Date Received: 05/21/21 08:56

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		05/21/21 09:48	05/22/21 05:35	1
Toluene	<0.00200	U	0.00200	mg/Kg		05/21/21 09:48	05/22/21 05:35	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		05/21/21 09:48	05/22/21 05:35	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		05/21/21 09:48	05/22/21 05:35	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		05/21/21 09:48	05/22/21 05:35	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		05/21/21 09:48	05/22/21 05:35	1
Total BTEX	<0.00401	U	0.00401	mg/Kg		05/21/21 09:48	05/22/21 05:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	109		70 - 130	05/21/21 09:48	05/22/21 05:35	1
1,4-Difluorobenzene (Surr)	129		70 - 130	05/21/21 09:48	05/22/21 05:35	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		05/21/21 13:30	05/22/21 02:51	1

Eurofins Xenco, Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-2354-1

Client Sample ID: S-8 1

Lab Sample ID: 880-2354-14

Date Collected: 05/20/21 08:13

Matrix: Solid

Date Received: 05/21/21 08:56

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	59.3		49.9	mg/Kg		05/21/21 13:30	05/22/21 02:51	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		05/21/21 13:30	05/22/21 02:51	1
Total TPH	59.3		49.9	mg/Kg		05/21/21 13:30	05/22/21 02:51	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	47	S1-	70 - 130			05/21/21 13:30	05/22/21 02:51	1
o-Terphenyl	98		70 - 130			05/21/21 13:30	05/22/21 02:51	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1650		25.3	mg/Kg			05/25/21 19:44	5

Client Sample ID: S-9 .5

Lab Sample ID: 880-2354-15

Date Collected: 05/20/21 08:14

Matrix: Solid

Date Received: 05/21/21 08:56

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		05/21/21 09:48	05/22/21 05:56	1
Toluene	<0.00200	U	0.00200	mg/Kg		05/21/21 09:48	05/22/21 05:56	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		05/21/21 09:48	05/22/21 05:56	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		05/21/21 09:48	05/22/21 05:56	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		05/21/21 09:48	05/22/21 05:56	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		05/21/21 09:48	05/22/21 05:56	1
Total BTEX	<0.00401	U	0.00401	mg/Kg		05/21/21 09:48	05/22/21 05:56	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		70 - 130			05/21/21 09:48	05/22/21 05:56	1
1,4-Difluorobenzene (Surr)	126		70 - 130			05/21/21 09:48	05/22/21 05:56	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		05/21/21 13:30	05/22/21 03:12	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		05/21/21 13:30	05/22/21 03:12	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		05/21/21 13:30	05/22/21 03:12	1
Total TPH	<50.0	U	50.0	mg/Kg		05/21/21 13:30	05/22/21 03:12	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	84		70 - 130			05/21/21 13:30	05/22/21 03:12	1
o-Terphenyl	82		70 - 130			05/21/21 13:30	05/22/21 03:12	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	39.0		5.05	mg/Kg			05/25/21 19:50	1

Eurofins Xenco, Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-2354-1

Client Sample ID: S-9 1

Lab Sample ID: 880-2354-16

Date Collected: 05/20/21 08:15

Matrix: Solid

Date Received: 05/21/21 08:56

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		05/21/21 09:48	05/22/21 06:16	1
Toluene	<0.00200	U	0.00200	mg/Kg		05/21/21 09:48	05/22/21 06:16	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		05/21/21 09:48	05/22/21 06:16	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		05/21/21 09:48	05/22/21 06:16	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		05/21/21 09:48	05/22/21 06:16	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		05/21/21 09:48	05/22/21 06:16	1
Total BTEX	<0.00401	U	0.00401	mg/Kg		05/21/21 09:48	05/22/21 06:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		70 - 130	05/21/21 09:48	05/22/21 06:16	1
1,4-Difluorobenzene (Surr)	124		70 - 130	05/21/21 09:48	05/22/21 06:16	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		05/21/21 13:30	05/22/21 03:33	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		05/21/21 13:30	05/22/21 03:33	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		05/21/21 13:30	05/22/21 03:33	1
Total TPH	<50.0	U	50.0	mg/Kg		05/21/21 13:30	05/22/21 03:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	87		70 - 130	05/21/21 13:30	05/22/21 03:33	1
o-Terphenyl	86		70 - 130	05/21/21 13:30	05/22/21 03:33	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	25.2		4.98	mg/Kg			05/25/21 19:55	1

Client Sample ID: S-10 0.5

Lab Sample ID: 880-2354-17

Date Collected: 05/20/21 08:16

Matrix: Solid

Date Received: 05/21/21 08:56

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		05/21/21 09:48	05/22/21 06:37	1
Toluene	<0.00200	U	0.00200	mg/Kg		05/21/21 09:48	05/22/21 06:37	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		05/21/21 09:48	05/22/21 06:37	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		05/21/21 09:48	05/22/21 06:37	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		05/21/21 09:48	05/22/21 06:37	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		05/21/21 09:48	05/22/21 06:37	1
Total BTEX	<0.00399	U	0.00399	mg/Kg		05/21/21 09:48	05/22/21 06:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	109		70 - 130	05/21/21 09:48	05/22/21 06:37	1
1,4-Difluorobenzene (Surr)	122		70 - 130	05/21/21 09:48	05/22/21 06:37	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		05/21/21 13:30	05/22/21 03:54	1

Eurofins Xenco, Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-2354-1

Client Sample ID: S-10 0.5

Lab Sample ID: 880-2354-17

Date Collected: 05/20/21 08:16

Matrix: Solid

Date Received: 05/21/21 08:56

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		05/21/21 13:30	05/22/21 03:54	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		05/21/21 13:30	05/22/21 03:54	1
Total TPH	<49.9	U	49.9	mg/Kg		05/21/21 13:30	05/22/21 03:54	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	86		70 - 130			05/21/21 13:30	05/22/21 03:54	1
o-Terphenyl	83		70 - 130			05/21/21 13:30	05/22/21 03:54	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6230		50.0	mg/Kg			05/25/21 20:00	10

Client Sample ID: S-10 1

Lab Sample ID: 880-2354-18

Date Collected: 05/20/21 08:17

Matrix: Solid

Date Received: 05/21/21 08:56

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		05/21/21 09:48	05/22/21 06:58	1
Toluene	<0.00201	U	0.00201	mg/Kg		05/21/21 09:48	05/22/21 06:58	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		05/21/21 09:48	05/22/21 06:58	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		05/21/21 09:48	05/22/21 06:58	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		05/21/21 09:48	05/22/21 06:58	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		05/21/21 09:48	05/22/21 06:58	1
Total BTEX	<0.00402	U	0.00402	mg/Kg		05/21/21 09:48	05/22/21 06:58	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		70 - 130			05/21/21 09:48	05/22/21 06:58	1
1,4-Difluorobenzene (Surr)	119		70 - 130			05/21/21 09:48	05/22/21 06:58	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		05/21/21 13:30	05/22/21 04:15	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		05/21/21 13:30	05/22/21 04:15	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		05/21/21 13:30	05/22/21 04:15	1
Total TPH	<50.0	U	50.0	mg/Kg		05/21/21 13:30	05/22/21 04:15	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	79		70 - 130			05/21/21 13:30	05/22/21 04:15	1
o-Terphenyl	76		70 - 130			05/21/21 13:30	05/22/21 04:15	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2630		24.9	mg/Kg			05/25/21 20:16	5

Eurofins Xenco, Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-2354-1

Client Sample ID: S-11 0.5

Lab Sample ID: 880-2354-19

Date Collected: 05/20/21 08:18

Matrix: Solid

Date Received: 05/21/21 08:56

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		05/21/21 09:48	05/22/21 07:19	1
Toluene	<0.00199	U	0.00199	mg/Kg		05/21/21 09:48	05/22/21 07:19	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		05/21/21 09:48	05/22/21 07:19	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		05/21/21 09:48	05/22/21 07:19	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		05/21/21 09:48	05/22/21 07:19	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		05/21/21 09:48	05/22/21 07:19	1
Total BTEX	<0.00398	U	0.00398	mg/Kg		05/21/21 09:48	05/22/21 07:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	110		70 - 130	05/21/21 09:48	05/22/21 07:19	1
1,4-Difluorobenzene (Surr)	120		70 - 130	05/21/21 09:48	05/22/21 07:19	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		05/21/21 13:30	05/22/21 04:36	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		05/21/21 13:30	05/22/21 04:36	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		05/21/21 13:30	05/22/21 04:36	1
Total TPH	<49.9	U	49.9	mg/Kg		05/21/21 13:30	05/22/21 04:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	83		70 - 130	05/21/21 13:30	05/22/21 04:36	1
o-Terphenyl	80		70 - 130	05/21/21 13:30	05/22/21 04:36	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	11.6		4.97	mg/Kg			05/25/21 20:21	1

Client Sample ID: S-11 1

Lab Sample ID: 880-2354-20

Date Collected: 05/20/21 08:19

Matrix: Solid

Date Received: 05/21/21 08:56

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		05/21/21 09:48	05/22/21 07:39	1
Toluene	<0.00199	U	0.00199	mg/Kg		05/21/21 09:48	05/22/21 07:39	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		05/21/21 09:48	05/22/21 07:39	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		05/21/21 09:48	05/22/21 07:39	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		05/21/21 09:48	05/22/21 07:39	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		05/21/21 09:48	05/22/21 07:39	1
Total BTEX	<0.00398	U	0.00398	mg/Kg		05/21/21 09:48	05/22/21 07:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	109		70 - 130	05/21/21 09:48	05/22/21 07:39	1
1,4-Difluorobenzene (Surr)	125		70 - 130	05/21/21 09:48	05/22/21 07:39	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		05/21/21 13:30	05/22/21 04:57	1

Eurofins Xenco, Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-2354-1

Client Sample ID: S-11 1

Lab Sample ID: 880-2354-20

Date Collected: 05/20/21 08:19

Matrix: Solid

Date Received: 05/21/21 08:56

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		05/21/21 13:30	05/22/21 04:57	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		05/21/21 13:30	05/22/21 04:57	1
Total TPH	<50.0	U	50.0	mg/Kg		05/21/21 13:30	05/22/21 04:57	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	93		70 - 130			05/21/21 13:30	05/22/21 04:57	1
o-Terphenyl	87		70 - 130			05/21/21 13:30	05/22/21 04:57	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	21.2		5.04	mg/Kg			05/25/21 20:36	1

Client Sample ID: S-12 0.5

Lab Sample ID: 880-2354-21

Date Collected: 05/20/21 08:20

Matrix: Solid

Date Received: 05/21/21 08:56

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U ** F1 F2	0.00200	mg/Kg		05/21/21 09:47	05/22/21 05:33	1
Toluene	<0.00200	U F1 F2	0.00200	mg/Kg		05/21/21 09:47	05/22/21 05:33	1
Ethylbenzene	<0.00200	U F1 F2	0.00200	mg/Kg		05/21/21 09:47	05/22/21 05:33	1
m-Xylene & p-Xylene	<0.00401	U F1 F2	0.00401	mg/Kg		05/21/21 09:47	05/22/21 05:33	1
o-Xylene	<0.00200	U F1 F2	0.00200	mg/Kg		05/21/21 09:47	05/22/21 05:33	1
Xylenes, Total	<0.00401	U F1 F2	0.00401	mg/Kg		05/21/21 09:47	05/22/21 05:33	1
Total BTEX	<0.00401	U F1 F2	0.00401	mg/Kg		05/21/21 09:47	05/22/21 05:33	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	134	S1+	70 - 130			05/21/21 09:47	05/22/21 05:33	1
1,4-Difluorobenzene (Surr)	92		70 - 130			05/21/21 09:47	05/22/21 05:33	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		05/21/21 11:01	05/23/21 08:09	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		05/21/21 11:01	05/23/21 08:09	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		05/21/21 11:01	05/23/21 08:09	1
Total TPH	<50.0	U	50.0	mg/Kg		05/21/21 11:01	05/23/21 08:09	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	86		70 - 130			05/21/21 11:01	05/23/21 08:09	1
o-Terphenyl	82		70 - 130			05/21/21 11:01	05/23/21 08:09	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	209		5.02	mg/Kg			05/25/21 20:41	1

Eurofins Xenco, Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-2354-1

Client Sample ID: S-12 1

Lab Sample ID: 880-2354-22

Date Collected: 05/20/21 08:21

Matrix: Solid

Date Received: 05/21/21 08:56

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U **	0.00200	mg/Kg		05/21/21 09:47	05/22/21 05:59	1
Toluene	<0.00200	U	0.00200	mg/Kg		05/21/21 09:47	05/22/21 05:59	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		05/21/21 09:47	05/22/21 05:59	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		05/21/21 09:47	05/22/21 05:59	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		05/21/21 09:47	05/22/21 05:59	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		05/21/21 09:47	05/22/21 05:59	1
Total BTEX	<0.00399	U	0.00399	mg/Kg		05/21/21 09:47	05/22/21 05:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	134	S1+	70 - 130	05/21/21 09:47	05/22/21 05:59	1
1,4-Difluorobenzene (Surr)	104		70 - 130	05/21/21 09:47	05/22/21 05:59	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		05/21/21 11:01	05/23/21 08:30	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		05/21/21 11:01	05/23/21 08:30	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		05/21/21 11:01	05/23/21 08:30	1
Total TPH	<49.9	U	49.9	mg/Kg		05/21/21 11:01	05/23/21 08:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	86		70 - 130	05/21/21 11:01	05/23/21 08:30	1
o-Terphenyl	84		70 - 130	05/21/21 11:01	05/23/21 08:30	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	292		4.98	mg/Kg			05/25/21 20:47	1

Eurofins Xenco, Midland

Surrogate Summary

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-2354-1

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		BFB1 (70-130)	DFBZ1 (70-130)
880-2354-1	S-1 .5	94	122
880-2354-1 MS	S-1 .5	91	115
880-2354-1 MSD	S-1 .5	97	122
880-2354-2	S-1 1	105	135 S1+
880-2354-3	S-2 .5	99	107
880-2354-4	S-2 1	99	123
880-2354-5	S-3 .5	100	122
880-2354-6	S-3 1	106	120
880-2354-7	S-4 .5	99	123
880-2354-8	S-4 1	96	118
880-2354-9	S-5 .5	105	132 S1+
880-2354-10	S-6 .5	99	118
880-2354-11	S-6 1	97	122
880-2354-12	S-7 .5	95	119
880-2354-13	S-8 .5	100	122
880-2354-14	S-8 1	109	129
880-2354-15	S-9 .5	102	126
880-2354-16	S-9 1	103	124
880-2354-17	S-10 0.5	109	122
880-2354-18	S-10 1	104	119
880-2354-19	S-11 0.5	110	120
880-2354-20	S-11 1	109	125
880-2354-21	S-12 0.5	134 S1+	92
880-2354-21 MS	S-12 0.5	99	95
880-2354-21 MSD	S-12 0.5	115	107
880-2354-22	S-12 1	134 S1+	104
LCS 880-3332/1-A	Lab Control Sample	113	101
LCS 880-3333/1-A	Lab Control Sample	85	114
LCSD 880-3332/2-A	Lab Control Sample Dup	99	105
LCSD 880-3333/2-A	Lab Control Sample Dup	84	102
MB 880-3313/5-A	Method Blank	81	80
MB 880-3314/5-A	Method Blank	105	114
MB 880-3332/5-A	Method Blank	76	85
MB 880-3333/5-A	Method Blank	108	105

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DFBZ = 1,4-Difluorobenzene (Surr)

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		1CO1 (70-130)	OTPH1 (70-130)
880-2354-1	S-1 .5	91	89
880-2354-1 MS	S-1 .5	98	92
880-2354-1 MSD	S-1 .5	97	91
880-2354-2	S-1 1	91	90
880-2354-3	S-2 .5	89	89

Eurofins Xenco, Midland

Surrogate Summary

Client: Larson & Associates, Inc.

Job ID: 880-2354-1

Project/Site: SD 13 SWD

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		1CO1 (70-130)	OTPH1 (70-130)
880-2354-4	S-2 1	89	87
880-2354-5	S-3 .5	87	86
880-2354-6	S-3 1	90	90
880-2354-7	S-4 .5	54 S1-	97
880-2354-8	S-4 1	86	85
880-2354-9	S-5 .5	89	87
880-2354-10	S-6 .5	43 S1-	86
880-2354-11	S-6 1	104	103
880-2354-12	S-7 .5	86	84
880-2354-13	S-8 .5	86	86
880-2354-14	S-8 1	47 S1-	98
880-2354-15	S-9 .5	84	82
880-2354-16	S-9 1	87	86
880-2354-17	S-10 0.5	86	83
880-2354-18	S-10 1	79	76
880-2354-19	S-11 0.5	83	80
880-2354-20	S-11 1	93	87
880-2354-21	S-12 0.5	86	82
880-2354-22	S-12 1	86	84
880-2355-A-21-H MS	Matrix Spike	87	75
880-2355-A-21-I MSD	Matrix Spike Duplicate	95	82
LCS 880-3342/2-A	Lab Control Sample	96	89
LCS 880-3349/2-A	Lab Control Sample	105	100
LCSD 880-3342/3-A	Lab Control Sample Dup	97	90
LCSD 880-3349/3-A	Lab Control Sample Dup	102	98
MB 880-3342/1-A	Method Blank	100	100
MB 880-3349/1-A	Method Blank	99	100

Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

Eurofins Xenco, Midland

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-2354-1

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-3313/5-A

Matrix: Solid

Analysis Batch: 3336

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 3313

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		05/21/21 11:00	05/21/21 15:57	1
Toluene	<0.00200	U	0.00200	mg/Kg		05/21/21 11:00	05/21/21 15:57	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		05/21/21 11:00	05/21/21 15:57	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		05/21/21 11:00	05/21/21 15:57	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		05/21/21 11:00	05/21/21 15:57	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		05/21/21 11:00	05/21/21 15:57	1
Total BTEX	<0.00400	U	0.00400	mg/Kg		05/21/21 11:00	05/21/21 15:57	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	81		70 - 130	05/21/21 11:00	05/21/21 15:57	1
1,4-Difluorobenzene (Surr)	80		70 - 130	05/21/21 11:00	05/21/21 15:57	1

Lab Sample ID: MB 880-3314/5-A

Matrix: Solid

Analysis Batch: 3318

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 3314

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		05/21/21 08:40	05/21/21 12:37	1
Toluene	<0.00200	U	0.00200	mg/Kg		05/21/21 08:40	05/21/21 12:37	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		05/21/21 08:40	05/21/21 12:37	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		05/21/21 08:40	05/21/21 12:37	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		05/21/21 08:40	05/21/21 12:37	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		05/21/21 08:40	05/21/21 12:37	1
Total BTEX	<0.00400	U	0.00400	mg/Kg		05/21/21 08:40	05/21/21 12:37	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		70 - 130	05/21/21 08:40	05/21/21 12:37	1
1,4-Difluorobenzene (Surr)	114		70 - 130	05/21/21 08:40	05/21/21 12:37	1

Lab Sample ID: MB 880-3332/5-A

Matrix: Solid

Analysis Batch: 3336

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 3332

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		05/21/21 09:47	05/22/21 05:08	1
Toluene	<0.00200	U	0.00200	mg/Kg		05/21/21 09:47	05/22/21 05:08	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		05/21/21 09:47	05/22/21 05:08	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		05/21/21 09:47	05/22/21 05:08	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		05/21/21 09:47	05/22/21 05:08	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		05/21/21 09:47	05/22/21 05:08	1
Total BTEX	<0.00400	U	0.00400	mg/Kg		05/21/21 09:47	05/22/21 05:08	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	76		70 - 130	05/21/21 09:47	05/22/21 05:08	1
1,4-Difluorobenzene (Surr)	85		70 - 130	05/21/21 09:47	05/22/21 05:08	1

Eurofins Xenco, Midland

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-2354-1

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: LCS 880-3332/1-A

Matrix: Solid

Analysis Batch: 3336

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 3332

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.100	0.1269		mg/Kg		127	70 - 130
Toluene	0.100	0.1162		mg/Kg		116	70 - 130
Ethylbenzene	0.100	0.1116		mg/Kg		112	70 - 130
m-Xylene & p-Xylene	0.200	0.2178		mg/Kg		109	70 - 130
o-Xylene	0.100	0.1039		mg/Kg		104	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	113		70 - 130
1,4-Difluorobenzene (Surr)	101		70 - 130

Lab Sample ID: LCSD 880-3332/2-A

Matrix: Solid

Analysis Batch: 3336

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 3332

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	0.100	0.1350	*+	mg/Kg		135	70 - 130	6	35
Toluene	0.100	0.1082		mg/Kg		108	70 - 130	7	35
Ethylbenzene	0.100	0.1021		mg/Kg		102	70 - 130	9	35
m-Xylene & p-Xylene	0.200	0.1988		mg/Kg		99	70 - 130	9	35
o-Xylene	0.100	0.09510		mg/Kg		95	70 - 130	9	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		70 - 130
1,4-Difluorobenzene (Surr)	105		70 - 130

Lab Sample ID: 880-2354-21 MS

Matrix: Solid

Analysis Batch: 3336

Client Sample ID: S-12 0.5

Prep Type: Total/NA

Prep Batch: 3332

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	<0.00200	U *+ F1 F2	0.100	0.03137	F1	mg/Kg		31	70 - 130
Toluene	<0.00200	U F1 F2	0.100	0.03110	F1	mg/Kg		31	70 - 130
Ethylbenzene	<0.00200	U F1 F2	0.100	0.03372	F1	mg/Kg		34	70 - 130
m-Xylene & p-Xylene	<0.00401	U F1 F2	0.200	0.06712	F1	mg/Kg		33	70 - 130
o-Xylene	<0.00200	U F1 F2	0.100	0.03592	F1	mg/Kg		36	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		70 - 130
1,4-Difluorobenzene (Surr)	95		70 - 130

Lab Sample ID: 880-2354-21 MSD

Matrix: Solid

Analysis Batch: 3336

Client Sample ID: S-12 0.5

Prep Type: Total/NA

Prep Batch: 3332

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	<0.00200	U *+ F1 F2	0.100	0.1117	F2	mg/Kg		111	70 - 130	112	35

Eurofins Xenco, Midland

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-2354-1

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 880-2354-21 MSD

Matrix: Solid

Analysis Batch: 3336

Client Sample ID: S-12 0.5

Prep Type: Total/NA

Prep Batch: 3332

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Toluene	<0.00200	U F1 F2	0.100	0.1035	F2	mg/Kg		103	70 - 130	108	35
Ethylbenzene	<0.00200	U F1 F2	0.100	0.1019	F2	mg/Kg		101	70 - 130	101	35
m-Xylene & p-Xylene	<0.00401	U F1 F2	0.201	0.1974	F2	mg/Kg		98	70 - 130	98	35
o-Xylene	<0.00200	U F1 F2	0.100	0.09637	F2	mg/Kg		96	70 - 130	91	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	115		70 - 130
1,4-Difluorobenzene (Surr)	107		70 - 130

Lab Sample ID: MB 880-3333/5-A

Matrix: Solid

Analysis Batch: 3318

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 3333

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		05/21/21 09:48	05/21/21 23:39	1
Toluene	<0.00200	U	0.00200	mg/Kg		05/21/21 09:48	05/21/21 23:39	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		05/21/21 09:48	05/21/21 23:39	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		05/21/21 09:48	05/21/21 23:39	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		05/21/21 09:48	05/21/21 23:39	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		05/21/21 09:48	05/21/21 23:39	1
Total BTEX	<0.00400	U	0.00400	mg/Kg		05/21/21 09:48	05/21/21 23:39	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	108		70 - 130	05/21/21 09:48	05/21/21 23:39	1
1,4-Difluorobenzene (Surr)	105		70 - 130	05/21/21 09:48	05/21/21 23:39	1

Lab Sample ID: LCS 880-3333/1-A

Matrix: Solid

Analysis Batch: 3318

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 3333

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.100	0.08924		mg/Kg		89	70 - 130
Toluene	0.100	0.09740		mg/Kg		97	70 - 130
Ethylbenzene	0.100	0.08990		mg/Kg		90	70 - 130
m-Xylene & p-Xylene	0.200	0.1739		mg/Kg		87	70 - 130
o-Xylene	0.100	0.08690		mg/Kg		87	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	85		70 - 130
1,4-Difluorobenzene (Surr)	114		70 - 130

Lab Sample ID: LCSD 880-3333/2-A

Matrix: Solid

Analysis Batch: 3318

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 3333

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	0.100	0.09524		mg/Kg		95	70 - 130	7	35
Toluene	0.100	0.09371		mg/Kg		94	70 - 130	4	35

Eurofins Xenco, Midland

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-2354-1

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: LCSD 880-3333/2-A

Matrix: Solid

Analysis Batch: 3318

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 3333

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene	0.100	0.08835		mg/Kg		88	70 - 130	2	35
m-Xylene & p-Xylene	0.200	0.1720		mg/Kg		86	70 - 130	1	35
o-Xylene	0.100	0.08562		mg/Kg		86	70 - 130	1	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	84		70 - 130
1,4-Difluorobenzene (Surr)	102		70 - 130

Lab Sample ID: 880-2354-1 MS

Matrix: Solid

Analysis Batch: 3318

Client Sample ID: S-1 .5

Prep Type: Total/NA

Prep Batch: 3333

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	<0.00200	U	0.100	0.08367		mg/Kg		83	70 - 130		
Toluene	<0.00200	U	0.100	0.08407		mg/Kg		84	70 - 130		
Ethylbenzene	<0.00200	U F1	0.100	0.07747		mg/Kg		77	70 - 130		
m-Xylene & p-Xylene	<0.00399	U F1	0.201	0.1571		mg/Kg		78	70 - 130		
o-Xylene	<0.00200	U F1	0.100	0.07619		mg/Kg		76	70 - 130		

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	91		70 - 130
1,4-Difluorobenzene (Surr)	115		70 - 130

Lab Sample ID: 880-2354-1 MSD

Matrix: Solid

Analysis Batch: 3318

Client Sample ID: S-1 .5

Prep Type: Total/NA

Prep Batch: 3333

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	<0.00200	U	0.100	0.07914		mg/Kg		79	70 - 130	6	35
Toluene	<0.00200	U	0.100	0.08019		mg/Kg		80	70 - 130	5	35
Ethylbenzene	<0.00200	U F1	0.100	0.06510	F1	mg/Kg		65	70 - 130	17	35
m-Xylene & p-Xylene	<0.00399	U F1	0.200	0.1321	F1	mg/Kg		66	70 - 130	17	35
o-Xylene	<0.00200	U F1	0.100	0.06715	F1	mg/Kg		67	70 - 130	13	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	97		70 - 130
1,4-Difluorobenzene (Surr)	122		70 - 130

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 880-3342/1-A

Matrix: Solid

Analysis Batch: 3369

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 3342

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		05/21/21 11:01	05/23/21 01:12	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		05/21/21 11:01	05/23/21 01:12	1

Eurofins Xenco, Midland

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-2354-1

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: MB 880-3342/1-A

Matrix: Solid

Analysis Batch: 3369

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 3342

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		05/21/21 11:01	05/23/21 01:12	1
Total TPH	<50.0	U	50.0	mg/Kg		05/21/21 11:01	05/23/21 01:12	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	100		70 - 130	05/21/21 11:01	05/23/21 01:12	1
o-Terphenyl	100		70 - 130	05/21/21 11:01	05/23/21 01:12	1

Lab Sample ID: LCS 880-3342/2-A

Matrix: Solid

Analysis Batch: 3369

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 3342

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO)-C6-C10	1000	814.7		mg/Kg		81	70 - 130
Diesel Range Organics (Over C10-C28)	1000	941.7		mg/Kg		94	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	96		70 - 130
o-Terphenyl	89		70 - 130

Lab Sample ID: LCSD 880-3342/3-A

Matrix: Solid

Analysis Batch: 3369

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 3342

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	827.2		mg/Kg		83	70 - 130	2	20
Diesel Range Organics (Over C10-C28)	1000	950.9		mg/Kg		95	70 - 130	1	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	97		70 - 130
o-Terphenyl	90		70 - 130

Lab Sample ID: 880-2355-A-21-H MS

Matrix: Solid

Analysis Batch: 3369

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 3342

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	996	847.0		mg/Kg		83	70 - 130
Diesel Range Organics (Over C10-C28)	<49.9	U	996	997.5		mg/Kg		98	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	87		70 - 130
o-Terphenyl	75		70 - 130

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QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-2354-1

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: 880-2355-A-21-I MSD

Matrix: Solid

Analysis Batch: 3369

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 3342

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	996	939.4		mg/Kg		92	70 - 130	10	20
Diesel Range Organics (Over C10-C28)	<49.9	U	996	1098		mg/Kg		108	70 - 130	10	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1-Chlorooctane	95		70 - 130								
o-Terphenyl	82		70 - 130								

Lab Sample ID: MB 880-3349/1-A

Matrix: Solid

Analysis Batch: 3308

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 3349

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		05/21/21 13:30	05/21/21 20:12	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		05/21/21 13:30	05/21/21 20:12	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		05/21/21 13:30	05/21/21 20:12	1
Total TPH	<50.0	U	50.0	mg/Kg		05/21/21 13:30	05/21/21 20:12	1
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	99		70 - 130			05/21/21 13:30	05/21/21 20:12	1
o-Terphenyl	100		70 - 130			05/21/21 13:30	05/21/21 20:12	1

Lab Sample ID: LCS 880-3349/2-A

Matrix: Solid

Analysis Batch: 3308

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 3349

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	
Gasoline Range Organics (GRO)-C6-C10	1000	930.3		mg/Kg		93	70 - 130	
Diesel Range Organics (Over C10-C28)	1000	1125		mg/Kg		113	70 - 130	
Surrogate	LCS %Recovery	LCS Qualifier	Limits					
1-Chlorooctane	105		70 - 130					
o-Terphenyl	100		70 - 130					

Lab Sample ID: LCSD 880-3349/3-A

Matrix: Solid

Analysis Batch: 3308

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 3349

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	959.5		mg/Kg		96	70 - 130	3	20
Diesel Range Organics (Over C10-C28)	1000	1097		mg/Kg		110	70 - 130	3	20

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QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-2354-1

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: LCSD 880-3349/3-A

Matrix: Solid

Analysis Batch: 3308

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 3349

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	102		70 - 130
o-Terphenyl	98		70 - 130

Lab Sample ID: 880-2354-1 MS

Matrix: Solid

Analysis Batch: 3308

Client Sample ID: S-1 .5

Prep Type: Total/NA

Prep Batch: 3349

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	996	1004		mg/Kg		101	70 - 130	
Diesel Range Organics (Over C10-C28)	<49.9	U	996	1135		mg/Kg		112	70 - 130	
Surrogate	%Recovery	Qualifier	Limits							
1-Chlorooctane	98		70 - 130							
o-Terphenyl	92		70 - 130							

Lab Sample ID: 880-2354-1 MSD

Matrix: Solid

Analysis Batch: 3308

Client Sample ID: S-1 .5

Prep Type: Total/NA

Prep Batch: 3349

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	996	964.5		mg/Kg		97	70 - 130	4	20	
Diesel Range Organics (Over C10-C28)	<49.9	U	996	1137		mg/Kg		112	70 - 130	0	20	
Surrogate	%Recovery	Qualifier	Limits									
1-Chlorooctane	97		70 - 130									
o-Terphenyl	91		70 - 130									

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-3345/1-A

Matrix: Solid

Analysis Batch: 3362

Client Sample ID: Method Blank

Prep Type: Soluble

	MB	MB								
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac		
Chloride	<5.00	U	5.00	mg/Kg			05/21/21 20:21	1		

Lab Sample ID: LCS 880-3345/2-A

Matrix: Solid

Analysis Batch: 3362

Client Sample ID: Lab Control Sample

Prep Type: Soluble

	Spike	LCS	LCS						%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits			
Chloride	250	239.2		mg/Kg		96	90 - 110			

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QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-2354-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 880-3345/3-A

Matrix: Solid

Analysis Batch: 3362

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	250	237.4		mg/Kg		95	90 - 110	1	20

Lab Sample ID: 880-2354-10 MS

Matrix: Solid

Analysis Batch: 3362

Client Sample ID: S-6 .5

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	5550		2530	8043		mg/Kg		99	90 - 110		

Lab Sample ID: 880-2354-10 MSD

Matrix: Solid

Analysis Batch: 3362

Client Sample ID: S-6 .5

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	5550		2530	7882		mg/Kg		92	90 - 110	2	20

Lab Sample ID: MB 880-3346/1-A

Matrix: Solid

Analysis Batch: 3449

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			05/25/21 18:32	1

Lab Sample ID: LCS 880-3346/2-A

Matrix: Solid

Analysis Batch: 3449

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	250	235.1		mg/Kg		94	90 - 110		

Lab Sample ID: LCSD 880-3346/3-A

Matrix: Solid

Analysis Batch: 3449

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	250	235.4		mg/Kg		94	90 - 110	0	20

Lab Sample ID: 880-2354-17 MS

Matrix: Solid

Analysis Batch: 3449

Client Sample ID: S-10 0.5

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	6230		250	8768	4	mg/Kg		1015	90 - 110		

Lab Sample ID: 880-2354-17 MSD

Matrix: Solid

Analysis Batch: 3449

Client Sample ID: S-10 0.5

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	6230		250	8701	4	mg/Kg		988	90 - 110	1	20

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QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-2354-1

GC VOA

Prep Batch: 3313

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-3313/5-A	Method Blank	Total/NA	Solid	5035	

Prep Batch: 3314

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-3314/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 3318

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-2354-1	S-1 .5	Total/NA	Solid	8021B	3333
880-2354-2	S-1 1	Total/NA	Solid	8021B	3333
880-2354-3	S-2 .5	Total/NA	Solid	8021B	3333
880-2354-4	S-2 1	Total/NA	Solid	8021B	3333
880-2354-5	S-3 .5	Total/NA	Solid	8021B	3333
880-2354-6	S-3 1	Total/NA	Solid	8021B	3333
880-2354-7	S-4 .5	Total/NA	Solid	8021B	3333
880-2354-8	S-4 1	Total/NA	Solid	8021B	3333
880-2354-9	S-5 .5	Total/NA	Solid	8021B	3333
880-2354-10	S-6 .5	Total/NA	Solid	8021B	3333
880-2354-11	S-6 1	Total/NA	Solid	8021B	3333
880-2354-12	S-7 .5	Total/NA	Solid	8021B	3333
880-2354-13	S-8 .5	Total/NA	Solid	8021B	3333
880-2354-14	S-8 1	Total/NA	Solid	8021B	3333
880-2354-15	S-9 .5	Total/NA	Solid	8021B	3333
880-2354-16	S-9 1	Total/NA	Solid	8021B	3333
880-2354-17	S-10 0.5	Total/NA	Solid	8021B	3333
880-2354-18	S-10 1	Total/NA	Solid	8021B	3333
880-2354-19	S-11 0.5	Total/NA	Solid	8021B	3333
880-2354-20	S-11 1	Total/NA	Solid	8021B	3333
MB 880-3314/5-A	Method Blank	Total/NA	Solid	8021B	3314
MB 880-3333/5-A	Method Blank	Total/NA	Solid	8021B	3333
LCS 880-3333/1-A	Lab Control Sample	Total/NA	Solid	8021B	3333
LCSD 880-3333/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	3333
880-2354-1 MS	S-1 .5	Total/NA	Solid	8021B	3333
880-2354-1 MSD	S-1 .5	Total/NA	Solid	8021B	3333

Prep Batch: 3332

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-2354-21	S-12 0.5	Total/NA	Solid	5035	
880-2354-22	S-12 1	Total/NA	Solid	5035	
MB 880-3332/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-3332/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-3332/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-2354-21 MS	S-12 0.5	Total/NA	Solid	5035	
880-2354-21 MSD	S-12 0.5	Total/NA	Solid	5035	

Prep Batch: 3333

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-2354-1	S-1 .5	Total/NA	Solid	5035	
880-2354-2	S-1 1	Total/NA	Solid	5035	
880-2354-3	S-2 .5	Total/NA	Solid	5035	
880-2354-4	S-2 1	Total/NA	Solid	5035	

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QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-2354-1

GC VOA (Continued)

Prep Batch: 3333 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-2354-5	S-3 .5	Total/NA	Solid	5035	
880-2354-6	S-3 1	Total/NA	Solid	5035	
880-2354-7	S-4 .5	Total/NA	Solid	5035	
880-2354-8	S-4 1	Total/NA	Solid	5035	
880-2354-9	S-5 .5	Total/NA	Solid	5035	
880-2354-10	S-6 .5	Total/NA	Solid	5035	
880-2354-11	S-6 1	Total/NA	Solid	5035	
880-2354-12	S-7 .5	Total/NA	Solid	5035	
880-2354-13	S-8 .5	Total/NA	Solid	5035	
880-2354-14	S-8 1	Total/NA	Solid	5035	
880-2354-15	S-9 .5	Total/NA	Solid	5035	
880-2354-16	S-9 1	Total/NA	Solid	5035	
880-2354-17	S-10 0.5	Total/NA	Solid	5035	
880-2354-18	S-10 1	Total/NA	Solid	5035	
880-2354-19	S-11 0.5	Total/NA	Solid	5035	
880-2354-20	S-11 1	Total/NA	Solid	5035	
MB 880-3333/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-3333/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-3333/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-2354-1 MS	S-1 .5	Total/NA	Solid	5035	
880-2354-1 MSD	S-1 .5	Total/NA	Solid	5035	

Analysis Batch: 3336

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-2354-21	S-12 0.5	Total/NA	Solid	8021B	3332
880-2354-22	S-12 1	Total/NA	Solid	8021B	3332
MB 880-3313/5-A	Method Blank	Total/NA	Solid	8021B	3313
MB 880-3332/5-A	Method Blank	Total/NA	Solid	8021B	3332
LCS 880-3332/1-A	Lab Control Sample	Total/NA	Solid	8021B	3332
LCSD 880-3332/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	3332
880-2354-21 MS	S-12 0.5	Total/NA	Solid	8021B	3332
880-2354-21 MSD	S-12 0.5	Total/NA	Solid	8021B	3332

GC Semi VOA

Analysis Batch: 3308

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-2354-1	S-1 .5	Total/NA	Solid	8015B NM	3349
880-2354-2	S-1 1	Total/NA	Solid	8015B NM	3349
880-2354-3	S-2 .5	Total/NA	Solid	8015B NM	3349
880-2354-4	S-2 1	Total/NA	Solid	8015B NM	3349
880-2354-5	S-3 .5	Total/NA	Solid	8015B NM	3349
880-2354-6	S-3 1	Total/NA	Solid	8015B NM	3349
880-2354-7	S-4 .5	Total/NA	Solid	8015B NM	3349
880-2354-8	S-4 1	Total/NA	Solid	8015B NM	3349
880-2354-9	S-5 .5	Total/NA	Solid	8015B NM	3349
880-2354-10	S-6 .5	Total/NA	Solid	8015B NM	3349
880-2354-11	S-6 1	Total/NA	Solid	8015B NM	3349
880-2354-12	S-7 .5	Total/NA	Solid	8015B NM	3349
880-2354-13	S-8 .5	Total/NA	Solid	8015B NM	3349
880-2354-14	S-8 1	Total/NA	Solid	8015B NM	3349

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QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-2354-1

GC Semi VOA (Continued)

Analysis Batch: 3308 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-2354-15	S-9 .5	Total/NA	Solid	8015B NM	3349
880-2354-16	S-9 1	Total/NA	Solid	8015B NM	3349
880-2354-17	S-10 0.5	Total/NA	Solid	8015B NM	3349
880-2354-18	S-10 1	Total/NA	Solid	8015B NM	3349
880-2354-19	S-11 0.5	Total/NA	Solid	8015B NM	3349
880-2354-20	S-11 1	Total/NA	Solid	8015B NM	3349
MB 880-3349/1-A	Method Blank	Total/NA	Solid	8015B NM	3349
LCS 880-3349/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	3349
LCSD 880-3349/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	3349
880-2354-1 MS	S-1 .5	Total/NA	Solid	8015B NM	3349
880-2354-1 MSD	S-1 .5	Total/NA	Solid	8015B NM	3349

Prep Batch: 3342

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-2354-21	S-12 0.5	Total/NA	Solid	8015NM Prep	
880-2354-22	S-12 1	Total/NA	Solid	8015NM Prep	
MB 880-3342/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-3342/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-3342/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-2355-A-21-H MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-2355-A-21-I MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Prep Batch: 3349

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-2354-1	S-1 .5	Total/NA	Solid	8015NM Prep	
880-2354-2	S-1 1	Total/NA	Solid	8015NM Prep	
880-2354-3	S-2 .5	Total/NA	Solid	8015NM Prep	
880-2354-4	S-2 1	Total/NA	Solid	8015NM Prep	
880-2354-5	S-3 .5	Total/NA	Solid	8015NM Prep	
880-2354-6	S-3 1	Total/NA	Solid	8015NM Prep	
880-2354-7	S-4 .5	Total/NA	Solid	8015NM Prep	
880-2354-8	S-4 1	Total/NA	Solid	8015NM Prep	
880-2354-9	S-5 .5	Total/NA	Solid	8015NM Prep	
880-2354-10	S-6 .5	Total/NA	Solid	8015NM Prep	
880-2354-11	S-6 1	Total/NA	Solid	8015NM Prep	
880-2354-12	S-7 .5	Total/NA	Solid	8015NM Prep	
880-2354-13	S-8 .5	Total/NA	Solid	8015NM Prep	
880-2354-14	S-8 1	Total/NA	Solid	8015NM Prep	
880-2354-15	S-9 .5	Total/NA	Solid	8015NM Prep	
880-2354-16	S-9 1	Total/NA	Solid	8015NM Prep	
880-2354-17	S-10 0.5	Total/NA	Solid	8015NM Prep	
880-2354-18	S-10 1	Total/NA	Solid	8015NM Prep	
880-2354-19	S-11 0.5	Total/NA	Solid	8015NM Prep	
880-2354-20	S-11 1	Total/NA	Solid	8015NM Prep	
MB 880-3349/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-3349/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-3349/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-2354-1 MS	S-1 .5	Total/NA	Solid	8015NM Prep	
880-2354-1 MSD	S-1 .5	Total/NA	Solid	8015NM Prep	

Eurofins Xenco, Midland

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-2354-1

GC Semi VOA

Analysis Batch: 3369

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-2354-21	S-12 0.5	Total/NA	Solid	8015B NM	3342
880-2354-22	S-12 1	Total/NA	Solid	8015B NM	3342
MB 880-3342/1-A	Method Blank	Total/NA	Solid	8015B NM	3342
LCS 880-3342/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	3342
LCSD 880-3342/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	3342
880-2355-A-21-H MS	Matrix Spike	Total/NA	Solid	8015B NM	3342
880-2355-A-21-I MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	3342

HPLC/IC

Leach Batch: 3345

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-2354-1	S-1 .5	Soluble	Solid	DI Leach	
880-2354-2	S-1 1	Soluble	Solid	DI Leach	
880-2354-3	S-2 .5	Soluble	Solid	DI Leach	
880-2354-4	S-2 1	Soluble	Solid	DI Leach	
880-2354-5	S-3 .5	Soluble	Solid	DI Leach	
880-2354-6	S-3 1	Soluble	Solid	DI Leach	
880-2354-7	S-4 .5	Soluble	Solid	DI Leach	
880-2354-8	S-4 1	Soluble	Solid	DI Leach	
880-2354-9	S-5 .5	Soluble	Solid	DI Leach	
880-2354-10	S-6 .5	Soluble	Solid	DI Leach	
MB 880-3345/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-3345/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-3345/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-2354-10 MS	S-6 .5	Soluble	Solid	DI Leach	
880-2354-10 MSD	S-6 .5	Soluble	Solid	DI Leach	

Leach Batch: 3346

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-2354-11	S-6 1	Soluble	Solid	DI Leach	
880-2354-12	S-7 .5	Soluble	Solid	DI Leach	
880-2354-13	S-8 .5	Soluble	Solid	DI Leach	
880-2354-14	S-8 1	Soluble	Solid	DI Leach	
880-2354-15	S-9 .5	Soluble	Solid	DI Leach	
880-2354-16	S-9 1	Soluble	Solid	DI Leach	
880-2354-17	S-10 0.5	Soluble	Solid	DI Leach	
880-2354-18	S-10 1	Soluble	Solid	DI Leach	
880-2354-19	S-11 0.5	Soluble	Solid	DI Leach	
880-2354-20	S-11 1	Soluble	Solid	DI Leach	
880-2354-21	S-12 0.5	Soluble	Solid	DI Leach	
880-2354-22	S-12 1	Soluble	Solid	DI Leach	
MB 880-3346/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-3346/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-3346/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-2354-17 MS	S-10 0.5	Soluble	Solid	DI Leach	
880-2354-17 MSD	S-10 0.5	Soluble	Solid	DI Leach	

Analysis Batch: 3362

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-2354-1	S-1 .5	Soluble	Solid	300.0	3345

Eurofins Xenco, Midland

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-2354-1

HPLC/IC (Continued)

Analysis Batch: 3362 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-2354-2	S-1 1	Soluble	Solid	300.0	3345
880-2354-3	S-2 .5	Soluble	Solid	300.0	3345
880-2354-4	S-2 1	Soluble	Solid	300.0	3345
880-2354-5	S-3 .5	Soluble	Solid	300.0	3345
880-2354-6	S-3 1	Soluble	Solid	300.0	3345
880-2354-7	S-4 .5	Soluble	Solid	300.0	3345
880-2354-8	S-4 1	Soluble	Solid	300.0	3345
880-2354-9	S-5 .5	Soluble	Solid	300.0	3345
880-2354-10	S-6 .5	Soluble	Solid	300.0	3345
MB 880-3345/1-A	Method Blank	Soluble	Solid	300.0	3345
LCS 880-3345/2-A	Lab Control Sample	Soluble	Solid	300.0	3345
LCSD 880-3345/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	3345
880-2354-10 MS	S-6 .5	Soluble	Solid	300.0	3345
880-2354-10 MSD	S-6 .5	Soluble	Solid	300.0	3345

Analysis Batch: 3449

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-2354-11	S-6 1	Soluble	Solid	300.0	3346
880-2354-12	S-7 .5	Soluble	Solid	300.0	3346
880-2354-13	S-8 .5	Soluble	Solid	300.0	3346
880-2354-14	S-8 1	Soluble	Solid	300.0	3346
880-2354-15	S-9 .5	Soluble	Solid	300.0	3346
880-2354-16	S-9 1	Soluble	Solid	300.0	3346
880-2354-17	S-10 0.5	Soluble	Solid	300.0	3346
880-2354-18	S-10 1	Soluble	Solid	300.0	3346
880-2354-19	S-11 0.5	Soluble	Solid	300.0	3346
880-2354-20	S-11 1	Soluble	Solid	300.0	3346
880-2354-21	S-12 0.5	Soluble	Solid	300.0	3346
880-2354-22	S-12 1	Soluble	Solid	300.0	3346
MB 880-3346/1-A	Method Blank	Soluble	Solid	300.0	3346
LCS 880-3346/2-A	Lab Control Sample	Soluble	Solid	300.0	3346
LCSD 880-3346/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	3346
880-2354-17 MS	S-10 0.5	Soluble	Solid	300.0	3346
880-2354-17 MSD	S-10 0.5	Soluble	Solid	300.0	3346

Eurofins Xenco, Midland

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-2354-1

Client Sample ID: S-1 .5

Lab Sample ID: 880-2354-1

Date Collected: 05/20/21 08:00

Matrix: Solid

Date Received: 05/21/21 08:56

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	3333	05/21/21 09:48	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	3318	05/22/21 00:01	KL	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	3349	05/21/21 13:30	DM	XEN MID
Total/NA	Analysis	8015B NM		1			3308	05/21/21 21:15	AJ	XEN MID
Soluble	Leach	DI Leach			5.04 g	50 mL	3345	05/21/21 11:14	CH	XEN MID
Soluble	Analysis	300.0		5			3362	05/22/21 10:03	SC	XEN MID

Client Sample ID: S-1 1

Lab Sample ID: 880-2354-2

Date Collected: 05/20/21 08:01

Matrix: Solid

Date Received: 05/21/21 08:56

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	3333	05/21/21 09:48	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	3318	05/22/21 00:22	KL	XEN MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	3349	05/21/21 13:30	DM	XEN MID
Total/NA	Analysis	8015B NM		1			3308	05/21/21 22:18	AJ	XEN MID
Soluble	Leach	DI Leach			5.05 g	50 mL	3345	05/21/21 11:14	CH	XEN MID
Soluble	Analysis	300.0		20			3362	05/22/21 10:08	SC	XEN MID

Client Sample ID: S-2 .5

Lab Sample ID: 880-2354-3

Date Collected: 05/20/21 08:02

Matrix: Solid

Date Received: 05/21/21 08:56

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	3333	05/21/21 09:48	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	3318	05/22/21 00:43	KL	XEN MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	3349	05/21/21 13:30	DM	XEN MID
Total/NA	Analysis	8015B NM		1			3308	05/21/21 22:39	AJ	XEN MID
Soluble	Leach	DI Leach			4.96 g	50 mL	3345	05/21/21 11:14	CH	XEN MID
Soluble	Analysis	300.0		5			3362	05/22/21 10:13	SC	XEN MID

Client Sample ID: S-2 1

Lab Sample ID: 880-2354-4

Date Collected: 05/20/21 08:03

Matrix: Solid

Date Received: 05/21/21 08:56

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	3333	05/21/21 09:48	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	3318	05/22/21 01:03	KL	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	3349	05/21/21 13:30	DM	XEN MID
Total/NA	Analysis	8015B NM		1			3308	05/21/21 23:00	AJ	XEN MID
Soluble	Leach	DI Leach			4.98 g	50 mL	3345	05/21/21 11:14	CH	XEN MID
Soluble	Analysis	300.0		5			3362	05/22/21 10:18	SC	XEN MID

Eurofins Xenco, Midland

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-2354-1

Client Sample ID: S-3 .5

Lab Sample ID: 880-2354-5

Date Collected: 05/20/21 08:04

Matrix: Solid

Date Received: 05/21/21 08:56

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	3333	05/21/21 09:48	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	3318	05/22/21 01:24	KL	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	3349	05/21/21 13:30	DM	XEN MID
Total/NA	Analysis	8015B NM		1			3308	05/21/21 23:21	AJ	XEN MID
Soluble	Leach	DI Leach			4.98 g	50 mL	3345	05/21/21 11:14	CH	XEN MID
Soluble	Analysis	300.0		10			3362	05/22/21 10:34	SC	XEN MID

Client Sample ID: S-3 1

Lab Sample ID: 880-2354-6

Date Collected: 05/20/21 08:05

Matrix: Solid

Date Received: 05/21/21 08:56

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.04 g	5 mL	3333	05/21/21 09:48	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	3318	05/22/21 01:45	KL	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	3349	05/21/21 13:30	DM	XEN MID
Total/NA	Analysis	8015B NM		1			3308	05/21/21 23:42	AJ	XEN MID
Soluble	Leach	DI Leach			5.02 g	50 mL	3345	05/21/21 11:14	CH	XEN MID
Soluble	Analysis	300.0		5			3362	05/22/21 10:39	SC	XEN MID

Client Sample ID: S-4 .5

Lab Sample ID: 880-2354-7

Date Collected: 05/20/21 08:06

Matrix: Solid

Date Received: 05/21/21 08:56

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	3333	05/21/21 09:48	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	3318	05/22/21 02:06	KL	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	3349	05/21/21 13:30	DM	XEN MID
Total/NA	Analysis	8015B NM		1			3308	05/22/21 00:03	AJ	XEN MID
Soluble	Leach	DI Leach			4.97 g	50 mL	3345	05/21/21 11:14	CH	XEN MID
Soluble	Analysis	300.0		5			3362	05/22/21 10:44	SC	XEN MID

Client Sample ID: S-4 1

Lab Sample ID: 880-2354-8

Date Collected: 05/20/21 08:07

Matrix: Solid

Date Received: 05/21/21 08:56

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	3333	05/21/21 09:48	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	3318	05/22/21 02:26	KL	XEN MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	3349	05/21/21 13:30	DM	XEN MID
Total/NA	Analysis	8015B NM		1			3308	05/22/21 00:24	AJ	XEN MID
Soluble	Leach	DI Leach			5.02 g	50 mL	3345	05/21/21 11:14	CH	XEN MID
Soluble	Analysis	300.0		5			3362	05/22/21 10:49	SC	XEN MID

Eurofins Xenco, Midland

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-2354-1

Client Sample ID: S-5 .5

Lab Sample ID: 880-2354-9

Date Collected: 05/20/21 08:08

Matrix: Solid

Date Received: 05/21/21 08:56

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	3333	05/21/21 09:48	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	3318	05/22/21 02:47	KL	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	3349	05/21/21 13:30	DM	XEN MID
Total/NA	Analysis	8015B NM		1			3308	05/22/21 00:45	AJ	XEN MID
Soluble	Leach	DI Leach			4.95 g	50 mL	3345	05/21/21 11:14	CH	XEN MID
Soluble	Analysis	300.0		10			3362	05/22/21 10:55	SC	XEN MID

Client Sample ID: S-6 .5

Lab Sample ID: 880-2354-10

Date Collected: 05/20/21 08:09

Matrix: Solid

Date Received: 05/21/21 08:56

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	3333	05/21/21 09:48	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	3318	05/22/21 03:08	KL	XEN MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	3349	05/21/21 13:30	DM	XEN MID
Total/NA	Analysis	8015B NM		1			3308	05/22/21 01:06	AJ	XEN MID
Soluble	Leach	DI Leach			4.95 g	50 mL	3345	05/21/21 11:14	CH	XEN MID
Soluble	Analysis	300.0		10			3362	05/22/21 11:00	SC	XEN MID

Client Sample ID: S-6 1

Lab Sample ID: 880-2354-11

Date Collected: 05/20/21 08:10

Matrix: Solid

Date Received: 05/21/21 08:56

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	3333	05/21/21 09:48	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	3318	05/22/21 04:33	KL	XEN MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	3349	05/21/21 13:30	DM	XEN MID
Total/NA	Analysis	8015B NM		1			3308	05/22/21 01:48	AJ	XEN MID
Soluble	Leach	DI Leach			5.02 g	50 mL	3346	05/21/21 11:16	CH	XEN MID
Soluble	Analysis	300.0		10			3449	05/25/21 19:19	CH	XEN MID

Client Sample ID: S-7 .5

Lab Sample ID: 880-2354-12

Date Collected: 05/20/21 08:11

Matrix: Solid

Date Received: 05/21/21 08:56

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	3333	05/21/21 09:48	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	3318	05/22/21 04:53	KL	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	3349	05/21/21 13:30	DM	XEN MID
Total/NA	Analysis	8015B NM		1			3308	05/22/21 02:09	AJ	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	3346	05/21/21 11:16	CH	XEN MID
Soluble	Analysis	300.0		10			3449	05/25/21 19:34	CH	XEN MID

Eurofins Xenco, Midland

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-2354-1

Client Sample ID: S-8 .5

Lab Sample ID: 880-2354-13

Date Collected: 05/20/21 08:12

Matrix: Solid

Date Received: 05/21/21 08:56

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.95 g	5 mL	3333	05/21/21 09:48	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	3318	05/22/21 05:14	KL	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	3349	05/21/21 13:30	DM	XEN MID
Total/NA	Analysis	8015B NM		1			3308	05/22/21 02:30	AJ	XEN MID
Soluble	Leach	DI Leach			4.98 g	50 mL	3346	05/21/21 11:16	CH	XEN MID
Soluble	Analysis	300.0		5			3449	05/25/21 19:39	CH	XEN MID

Client Sample ID: S-8 1

Lab Sample ID: 880-2354-14

Date Collected: 05/20/21 08:13

Matrix: Solid

Date Received: 05/21/21 08:56

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	3333	05/21/21 09:48	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	3318	05/22/21 05:35	KL	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	3349	05/21/21 13:30	DM	XEN MID
Total/NA	Analysis	8015B NM		1			3308	05/22/21 02:51	AJ	XEN MID
Soluble	Leach	DI Leach			4.95 g	50 mL	3346	05/21/21 11:16	CH	XEN MID
Soluble	Analysis	300.0		5			3449	05/25/21 19:44	CH	XEN MID

Client Sample ID: S-9 .5

Lab Sample ID: 880-2354-15

Date Collected: 05/20/21 08:14

Matrix: Solid

Date Received: 05/21/21 08:56

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	3333	05/21/21 09:48	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	3318	05/22/21 05:56	KL	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	3349	05/21/21 13:30	DM	XEN MID
Total/NA	Analysis	8015B NM		1			3308	05/22/21 03:12	AJ	XEN MID
Soluble	Leach	DI Leach			4.95 g	50 mL	3346	05/21/21 11:16	CH	XEN MID
Soluble	Analysis	300.0		1			3449	05/25/21 19:50	CH	XEN MID

Client Sample ID: S-9 1

Lab Sample ID: 880-2354-16

Date Collected: 05/20/21 08:15

Matrix: Solid

Date Received: 05/21/21 08:56

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	3333	05/21/21 09:48	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	3318	05/22/21 06:16	KL	XEN MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	3349	05/21/21 13:30	DM	XEN MID
Total/NA	Analysis	8015B NM		1			3308	05/22/21 03:33	AJ	XEN MID
Soluble	Leach	DI Leach			5.02 g	50 mL	3346	05/21/21 11:16	CH	XEN MID
Soluble	Analysis	300.0		1			3449	05/25/21 19:55	CH	XEN MID

Eurofins Xenco, Midland

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-2354-1

Client Sample ID: S-10 0.5

Lab Sample ID: 880-2354-17

Date Collected: 05/20/21 08:16

Matrix: Solid

Date Received: 05/21/21 08:56

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	3333	05/21/21 09:48	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	3318	05/22/21 06:37	KL	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	3349	05/21/21 13:30	DM	XEN MID
Total/NA	Analysis	8015B NM		1			3308	05/22/21 03:54	AJ	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	3346	05/21/21 11:16	CH	XEN MID
Soluble	Analysis	300.0		10			3449	05/25/21 20:00	CH	XEN MID

Client Sample ID: S-10 1

Lab Sample ID: 880-2354-18

Date Collected: 05/20/21 08:17

Matrix: Solid

Date Received: 05/21/21 08:56

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	3333	05/21/21 09:48	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	3318	05/22/21 06:58	KL	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	3349	05/21/21 13:30	DM	XEN MID
Total/NA	Analysis	8015B NM		1			3308	05/22/21 04:15	AJ	XEN MID
Soluble	Leach	DI Leach			5.02 g	50 mL	3346	05/21/21 11:16	CH	XEN MID
Soluble	Analysis	300.0		5			3449	05/25/21 20:16	CH	XEN MID

Client Sample ID: S-11 0.5

Lab Sample ID: 880-2354-19

Date Collected: 05/20/21 08:18

Matrix: Solid

Date Received: 05/21/21 08:56

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	3333	05/21/21 09:48	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	3318	05/22/21 07:19	KL	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	3349	05/21/21 13:30	DM	XEN MID
Total/NA	Analysis	8015B NM		1			3308	05/22/21 04:36	AJ	XEN MID
Soluble	Leach	DI Leach			5.03 g	50 mL	3346	05/21/21 11:16	CH	XEN MID
Soluble	Analysis	300.0		1			3449	05/25/21 20:21	CH	XEN MID

Client Sample ID: S-11 1

Lab Sample ID: 880-2354-20

Date Collected: 05/20/21 08:19

Matrix: Solid

Date Received: 05/21/21 08:56

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	3333	05/21/21 09:48	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	3318	05/22/21 07:39	KL	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	3349	05/21/21 13:30	DM	XEN MID
Total/NA	Analysis	8015B NM		1			3308	05/22/21 04:57	AJ	XEN MID
Soluble	Leach	DI Leach			4.96 g	50 mL	3346	05/21/21 11:16	CH	XEN MID
Soluble	Analysis	300.0		1			3449	05/25/21 20:36	CH	XEN MID

Eurofins Xenco, Midland

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-2354-1

Client Sample ID: S-12 0.5

Lab Sample ID: 880-2354-21

Date Collected: 05/20/21 08:20

Matrix: Solid

Date Received: 05/21/21 08:56

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	3332	05/21/21 09:47	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	3336	05/22/21 05:33	MR	XEN MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	3342	05/21/21 11:01	DM	XEN MID
Total/NA	Analysis	8015B NM		1			3369	05/23/21 08:09	AJ	XEN MID
Soluble	Leach	DI Leach			4.98 g	50 mL	3346	05/21/21 11:16	CH	XEN MID
Soluble	Analysis	300.0		1			3449	05/25/21 20:41	CH	XEN MID

Client Sample ID: S-12 1

Lab Sample ID: 880-2354-22

Date Collected: 05/20/21 08:21

Matrix: Solid

Date Received: 05/21/21 08:56

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	3332	05/21/21 09:47	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	3336	05/22/21 05:59	MR	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	3342	05/21/21 11:01	DM	XEN MID
Total/NA	Analysis	8015B NM		1			3369	05/23/21 08:30	AJ	XEN MID
Soluble	Leach	DI Leach			5.02 g	50 mL	3346	05/21/21 11:16	CH	XEN MID
Soluble	Analysis	300.0		1			3449	05/25/21 20:47	CH	XEN MID

Laboratory References:

XEN MID = Eurofins Xenco, Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-2354-1

Laboratory: Eurofins Xenco, Midland

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-20-21	06-30-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015B NM	8015NM Prep	Solid	Total TPH
8021B	5035	Solid	Total BTEX

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Method Summary

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-2354-1

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	XEN MID
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	XEN MID
300.0	Anions, Ion Chromatography	MCAWW	XEN MID
5035	Closed System Purge and Trap	SW846	XEN MID
8015NM Prep	Microextraction	SW846	XEN MID
DI Leach	Deionized Water Leaching Procedure	ASTM	XEN MID

Protocol References:

ASTM = ASTM International

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

XEN MID = Eurofins Xenco, Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Eurofins Xenco, Midland

Sample Summary

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-2354-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
880-2354-1	S-1 .5	Solid	05/20/21 08:00	05/21/21 08:56	
880-2354-2	S-1 1	Solid	05/20/21 08:01	05/21/21 08:56	
880-2354-3	S-2 .5	Solid	05/20/21 08:02	05/21/21 08:56	
880-2354-4	S-2 1	Solid	05/20/21 08:03	05/21/21 08:56	
880-2354-5	S-3 .5	Solid	05/20/21 08:04	05/21/21 08:56	
880-2354-6	S-3 1	Solid	05/20/21 08:05	05/21/21 08:56	
880-2354-7	S-4 .5	Solid	05/20/21 08:06	05/21/21 08:56	
880-2354-8	S-4 1	Solid	05/20/21 08:07	05/21/21 08:56	
880-2354-9	S-5 .5	Solid	05/20/21 08:08	05/21/21 08:56	
880-2354-10	S-6 .5	Solid	05/20/21 08:09	05/21/21 08:56	
880-2354-11	S-6 1	Solid	05/20/21 08:10	05/21/21 08:56	
880-2354-12	S-7 .5	Solid	05/20/21 08:11	05/21/21 08:56	
880-2354-13	S-8 .5	Solid	05/20/21 08:12	05/21/21 08:56	
880-2354-14	S-8 1	Solid	05/20/21 08:13	05/21/21 08:56	
880-2354-15	S-9 .5	Solid	05/20/21 08:14	05/21/21 08:56	
880-2354-16	S-9 1	Solid	05/20/21 08:15	05/21/21 08:56	
880-2354-17	S-10 0.5	Solid	05/20/21 08:16	05/21/21 08:56	
880-2354-18	S-10 1	Solid	05/20/21 08:17	05/21/21 08:56	
880-2354-19	S-11 0.5	Solid	05/20/21 08:18	05/21/21 08:56	
880-2354-20	S-11 1	Solid	05/20/21 08:19	05/21/21 08:56	
880-2354-21	S-12 0.5	Solid	05/20/21 08:20	05/21/21 08:56	
880-2354-22	S-12 1	Solid	05/20/21 08:21	05/21/21 08:56	

Eurofins Xenco, Midland

Varson & Associates, Inc.

Environmental Consultants

880-2354 Chain of Custody



Midland, TX 79701
432-687-0901

Data Reported to

DATE: S-20-2021 PO# _____ LAB WORK ORDER# _____
PROJECT LOCATION OR NAME: SD 13 SWD COLLECTOR: MS
LAI PROJECT # 21-0100-20

CHAIN-OF-CUSTODY

2354 No 1321

PAGE 1 OF 2

5/26/2021

Field Sample ID	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION				ANALYSES	FIELD NOTES	
						HCl	HNO ₃	H ₂ SO ₄ ☐ NaOH ☐	ICE			UNPRESERVED
S-1 .5		S-20-21	0800	S	1					X		
S-1 1			0801							X		
S-2 .5			0802							X		
S-2 1			0803							X		
S-3 .5			0804							X		
S-3 1			0805							X		
S-4 .5			0806							X		
S-4 1			0807							X		
S-5 .5			0808							X		
S-5 1			0809							X		
S-6 .5			0810							X		
S-6 1			0811							X		
S-7 .5			0812							X		
S-7 1			0813							X		
S-8 .5			0814							X		
S-8 1			0815							X		
S-9 .5			0816							X		
S-9 1			0817							X		
TOTAL 15												

RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME
<i>[Signature]</i>	5/11/21 8:56	<i>[Signature]</i>	
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME
LABORATORY	Xenon		

TURN AROUND TIME	LABORATORY USE ONLY:
NORMAL ☒	RECEIVING TEMP: <u>2-12.6</u> THERM# <u>1028</u>
1 DAY ☐	CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☒ NOT USED
2 DAY ☐	CARRIER BILL # _____
OTHER ☐	☒ HAND DELIVERED

Marson & Associates, Inc.
Environmental Consultants

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

Data Reported to:

DATE: 5-10-2021 LAB WORK ORDER#: 5013500 PAGE 2 OF 2
PO#:
PROJECT LOCATION OR NAME: 5013500 COLLECTOR: MJB
LAI PROJECT #: 21-0100-20

CHAIN-OF-CUSTODY

№1567

TRRP report? ☐ Yes ☒ No		S=SOIL W=WATER A=AIR		P=PAINT SL=SLUDGE OT=OTHER		PRESENTATION HCl HNO ₃ H ₂ SO ₄ ☐ NaOH ☐ ICE UNPRESERVED		ANALYSES BTEX ☐ MTBE ☐ TPH 418 ☐ 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 PESTICIDES ☐ TBLP - METALS (RCRA) ☐ TCAP VOC ☐ TCAP - PEST ☐ HERB ☐ Semi-VOC ☐ TOTAL METALS (RCRA) ☐ OTHER LIST ☐ LEAD - TOTAL ☐ DW 2008 ☐ TCAP ☐ RCI ☐ TOX ☐ FLASHPOINT ☐ TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐ pH ☐ HEXAVALENT CHROMIUM ☐ EXPLOSIVES ☐ PECHLORATE ☐ CHLORIDE ☐ ANIONS ☐ ALKALINITY ☐	
Field Sample ID	Lab #	Date	Time	Matrix	# of Containers	FIELD NOTES			
S-9 MSA		5/10/21	0815	S	1				
S-10 105			0816						
S-10 11			0817						
S-11 05			0818						
S-11 1			0819						
S-12 05			0820						
S-12 1			0821						
TOTAL 7									
RELINQUISHED BY (Signature)		DATE/TIME		RECEIVED BY (Signature)		TURN AROUND TIME			
		5/21/21 9:50				NORMAL ☒ 1 DAY ☐ 2 DAY ☐ OTHER ☐			
RELINQUISHED BY (Signature)		DATE/TIME		RECEIVED BY (Signature)		LABORATORY USE ONLY:			
						RECEIVING TEMP <u>21.2</u> THERM# <u>128</u> CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☒ NOT USED ☐ CARRIER BILL # <u> </u> ☒ HAND DELIVERED			
RELINQUISHED BY (Signature)		DATE/TIME		RECEIVED BY (Signature)					
LABORATORY		Xenico							

Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-2354-1

SDG Number:

Login Number: 2354

List Number: 1

Creator: Phillips, Kerianna

List Source: Eurofins Xenco, Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	



Environment Testing America

ANALYTICAL REPORT

Eurofins Xenco, Midland
1211 W. Florida Ave
Midland, TX 79701
Tel: (432)704-5440

Laboratory Job ID: 880-8306-1

Laboratory Sample Delivery Group: 21-0100-20

Client Project/Site: SD Frac 13 SWD

For:

Larson & Associates, Inc.
507 N Marienfeld
Suite 202
Midland, Texas 79701

Attn: Mr. Mark J Larson

A handwritten signature in cursive script that reads "Holly Taylor".

Authorized for release by:
11/22/2021 4:33:14 PM

Holly Taylor, Project Manager
(806)794-1296
holly.taylor@eurofinset.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Client: Larson & Associates, Inc.
Project/Site: SD Frac 13 SWD

Laboratory Job ID: 880-8306-1
SDG: 21-0100-20

Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Client Sample Results	5
Surrogate Summary	23
QC Sample Results	25
QC Association Summary	33
Lab Chronicle	39
Certification Summary	47
Method Summary	48
Sample Summary	49
Chain of Custody	50
Receipt Checklists	52

1
2
3
4
5
6
7
8
9
10
11
12
13
14

Definitions/Glossary

Client: Larson & Associates, Inc.
Project/Site: SD Frac 13 SWD

Job ID: 880-8306-1
SDG: 21-0100-20

Qualifiers

GC VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
*1	LCS/LCSD RPD exceeds control limits.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Larson & Associates, Inc.
Project/Site: SD Frac 13 SWD

Job ID: 880-8306-1
SDG: 21-0100-20

Job ID: 880-8306-1**Laboratory: Eurofins Xenco, Midland****Narrative****Job Narrative
880-8306-1****Receipt**

The samples were received on 11/15/2021 11:07 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was -3.7°C

GC VOA

Method 8021B: The laboratory control sample (LCS) associated with preparation batch 880-12347 and analytical batch 880-12498 was outside acceptance criteria for toluene. We believe a mis-injection is the cause. The batch matrix spike/matrix spike duplicate (MS/MSD), as well as the LCSD was within acceptance limits; therefore data was accepted.

Method 8021B: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 880-12347 and analytical batch 880-12498 recovered outside control limits for the following analytes: Toluene

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: S-1 1' (880-8306-1), S-10 3' (880-8306-6), S-3 10' (880-8306-16), S-4 5' (880-8306-19) and (MB 880-12346/1-A). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: S-5 5' (880-8306-23), (MB 880-12340/1-A) and (890-1551-A-2-B). Evidence of matrix interferences is not obvious.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC

Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-12493 and analytical batch 880-12846 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD Frac 13 SWD

Job ID: 880-8306-1
SDG: 21-0100-20

Client Sample ID: S-1 1'

Lab Sample ID: 880-8306-1

Date Collected: 11/11/21 13:17

Matrix: Solid

Date Received: 11/15/21 11:07

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/15/21 15:37	11/17/21 12:50	1
Toluene	<0.00200	U *- *1	0.00200	mg/Kg		11/15/21 15:37	11/17/21 12:50	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/15/21 15:37	11/17/21 12:50	1
m,p-Xylenes	<0.00399	U	0.00399	mg/Kg		11/15/21 15:37	11/17/21 12:50	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/15/21 15:37	11/17/21 12:50	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		11/15/21 15:37	11/17/21 12:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		70 - 130	11/15/21 15:37	11/17/21 12:50	1
1,4-Difluorobenzene (Surr)	101		70 - 130	11/15/21 15:37	11/17/21 12:50	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			11/18/21 15:58	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			11/16/21 08:57	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		11/15/21 15:16	11/15/21 16:34	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		11/15/21 15:16	11/15/21 16:34	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		11/15/21 15:16	11/15/21 16:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane (Surr)	113		70 - 130	11/15/21 15:16	11/15/21 16:34	1
o-Terphenyl (Surr)	132	S1+	70 - 130	11/15/21 15:16	11/15/21 16:34	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2680		24.8	mg/Kg			11/22/21 11:15	5

Client Sample ID: S-1 3'

Lab Sample ID: 880-8306-2

Date Collected: 11/11/21 13:18

Matrix: Solid

Date Received: 11/15/21 11:07

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198	mg/Kg		11/15/21 15:37	11/17/21 13:11	1
Toluene	<0.00198	U *- *1	0.00198	mg/Kg		11/15/21 15:37	11/17/21 13:11	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		11/15/21 15:37	11/17/21 13:11	1
m,p-Xylenes	<0.00396	U	0.00396	mg/Kg		11/15/21 15:37	11/17/21 13:11	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		11/15/21 15:37	11/17/21 13:11	1
Xylenes, Total	<0.00396	U	0.00396	mg/Kg		11/15/21 15:37	11/17/21 13:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		70 - 130	11/15/21 15:37	11/17/21 13:11	1
1,4-Difluorobenzene (Surr)	106		70 - 130	11/15/21 15:37	11/17/21 13:11	1

Eurofins Xenco, Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD Frac 13 SWD

Job ID: 880-8306-1
SDG: 21-0100-20

Client Sample ID: S-1 3'

Lab Sample ID: 880-8306-2

Date Collected: 11/11/21 13:18

Matrix: Solid

Date Received: 11/15/21 11:07

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396	mg/Kg			11/18/21 15:58	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			11/16/21 08:57	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		11/15/21 15:16	11/15/21 17:41	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		11/15/21 15:16	11/15/21 17:41	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		11/15/21 15:16	11/15/21 17:41	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane (Surr)	107		70 - 130			11/15/21 15:16	11/15/21 17:41	1
o-Terphenyl (Surr)	120		70 - 130			11/15/21 15:16	11/15/21 17:41	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1370		25.2	mg/Kg			11/22/21 11:37	5

Client Sample ID: S-1 5'

Lab Sample ID: 880-8306-3

Date Collected: 11/11/21 13:19

Matrix: Solid

Date Received: 11/15/21 11:07

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198	mg/Kg		11/15/21 15:37	11/17/21 13:32	1
Toluene	<0.00198	U * - *1	0.00198	mg/Kg		11/15/21 15:37	11/17/21 13:32	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		11/15/21 15:37	11/17/21 13:32	1
m,p-Xylenes	<0.00396	U	0.00396	mg/Kg		11/15/21 15:37	11/17/21 13:32	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		11/15/21 15:37	11/17/21 13:32	1
Xylenes, Total	<0.00396	U	0.00396	mg/Kg		11/15/21 15:37	11/17/21 13:32	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		70 - 130			11/15/21 15:37	11/17/21 13:32	1
1,4-Difluorobenzene (Surr)	106		70 - 130			11/15/21 15:37	11/17/21 13:32	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396	mg/Kg			11/18/21 15:58	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8	mg/Kg			11/16/21 08:57	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8	mg/Kg		11/15/21 15:16	11/15/21 18:03	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8	mg/Kg		11/15/21 15:16	11/15/21 18:03	1

Eurofins Xenco, Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD Frac 13 SWD

Job ID: 880-8306-1
SDG: 21-0100-20

Client Sample ID: S-1 5'

Lab Sample ID: 880-8306-3

Date Collected: 11/11/21 13:19

Matrix: Solid

Date Received: 11/15/21 11:07

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Oil Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		11/15/21 15:16	11/15/21 18:03	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane (Surr)	112		70 - 130			11/15/21 15:16	11/15/21 18:03	1
o-Terphenyl (Surr)	129		70 - 130			11/15/21 15:16	11/15/21 18:03	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1190		5.01	mg/Kg			11/22/21 11:45	1

Client Sample ID: S-1 10'

Lab Sample ID: 880-8306-4

Date Collected: 11/11/21 13:20

Matrix: Solid

Date Received: 11/15/21 11:07

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/15/21 15:37	11/17/21 13:52	1
Toluene	<0.00200	U * - *1	0.00200	mg/Kg		11/15/21 15:37	11/17/21 13:52	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/15/21 15:37	11/17/21 13:52	1
m,p-Xylenes	<0.00400	U	0.00400	mg/Kg		11/15/21 15:37	11/17/21 13:52	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/15/21 15:37	11/17/21 13:52	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		11/15/21 15:37	11/17/21 13:52	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		70 - 130			11/15/21 15:37	11/17/21 13:52	1
1,4-Difluorobenzene (Surr)	105		70 - 130			11/15/21 15:37	11/17/21 13:52	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/Kg			11/18/21 15:58	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			11/16/21 08:57	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		11/15/21 15:16	11/15/21 18:25	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		11/15/21 15:16	11/15/21 18:25	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		11/15/21 15:16	11/15/21 18:25	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane (Surr)	108		70 - 130			11/15/21 15:16	11/15/21 18:25	1
o-Terphenyl (Surr)	123		70 - 130			11/15/21 15:16	11/15/21 18:25	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	449		5.00	mg/Kg			11/22/21 12:07	1

Eurofins Xenco, Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD Frac 13 SWD

Job ID: 880-8306-1
SDG: 21-0100-20

Client Sample ID: S-10 1'

Lab Sample ID: 880-8306-5

Date Collected: 11/11/21 13:40

Matrix: Solid

Date Received: 11/15/21 11:07

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		11/15/21 15:37	11/17/21 14:13	1
Toluene	<0.00199	U *- *1	0.00199	mg/Kg		11/15/21 15:37	11/17/21 14:13	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		11/15/21 15:37	11/17/21 14:13	1
m,p-Xylenes	<0.00398	U	0.00398	mg/Kg		11/15/21 15:37	11/17/21 14:13	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		11/15/21 15:37	11/17/21 14:13	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		11/15/21 15:37	11/17/21 14:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		70 - 130	11/15/21 15:37	11/17/21 14:13	1
1,4-Difluorobenzene (Surr)	105		70 - 130	11/15/21 15:37	11/17/21 14:13	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			11/18/21 15:58	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8	mg/Kg			11/16/21 08:57	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8	mg/Kg		11/15/21 15:16	11/15/21 18:47	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8	mg/Kg		11/15/21 15:16	11/15/21 18:47	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		11/15/21 15:16	11/15/21 18:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane (Surr)	98		70 - 130	11/15/21 15:16	11/15/21 18:47	1
o-Terphenyl (Surr)	111		70 - 130	11/15/21 15:16	11/15/21 18:47	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	948		5.03	mg/Kg			11/22/21 12:14	1

Client Sample ID: S-10 3'

Lab Sample ID: 880-8306-6

Date Collected: 11/11/21 13:41

Matrix: Solid

Date Received: 11/15/21 11:07

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		11/15/21 15:37	11/17/21 14:34	1
Toluene	<0.00199	U *- *1	0.00199	mg/Kg		11/15/21 15:37	11/17/21 14:34	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		11/15/21 15:37	11/17/21 14:34	1
m,p-Xylenes	<0.00398	U	0.00398	mg/Kg		11/15/21 15:37	11/17/21 14:34	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		11/15/21 15:37	11/17/21 14:34	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		11/15/21 15:37	11/17/21 14:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		70 - 130	11/15/21 15:37	11/17/21 14:34	1
1,4-Difluorobenzene (Surr)	106		70 - 130	11/15/21 15:37	11/17/21 14:34	1

Eurofins Xenco, Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD Frac 13 SWD

Job ID: 880-8306-1
SDG: 21-0100-20

Client Sample ID: S-10 3'

Lab Sample ID: 880-8306-6

Date Collected: 11/11/21 13:41

Matrix: Solid

Date Received: 11/15/21 11:07

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			11/18/21 15:58	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.7	U	49.7	mg/Kg			11/16/21 08:57	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.7	U	49.7	mg/Kg		11/15/21 15:16	11/15/21 19:09	1
Diesel Range Organics (Over C10-C28)	<49.7	U	49.7	mg/Kg		11/15/21 15:16	11/15/21 19:09	1
Oil Range Organics (Over C28-C36)	<49.7	U	49.7	mg/Kg		11/15/21 15:16	11/15/21 19:09	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane (Surr)	119		70 - 130			11/15/21 15:16	11/15/21 19:09	1
o-Terphenyl (Surr)	138	S1+	70 - 130			11/15/21 15:16	11/15/21 19:09	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	225		5.01	mg/Kg			11/22/21 12:21	1

Client Sample ID: S-10 5'

Lab Sample ID: 880-8306-7

Date Collected: 11/11/21 13:42

Matrix: Solid

Date Received: 11/15/21 11:07

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198	mg/Kg		11/15/21 15:37	11/17/21 14:54	1
Toluene	<0.00198	U *- *1	0.00198	mg/Kg		11/15/21 15:37	11/17/21 14:54	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		11/15/21 15:37	11/17/21 14:54	1
m,p-Xylenes	<0.00397	U	0.00397	mg/Kg		11/15/21 15:37	11/17/21 14:54	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		11/15/21 15:37	11/17/21 14:54	1
Xylenes, Total	<0.00397	U	0.00397	mg/Kg		11/15/21 15:37	11/17/21 14:54	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		70 - 130			11/15/21 15:37	11/17/21 14:54	1
1,4-Difluorobenzene (Surr)	110		70 - 130			11/15/21 15:37	11/17/21 14:54	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00397	U	0.00397	mg/Kg			11/18/21 15:58	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8	mg/Kg			11/16/21 08:57	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8	mg/Kg		11/15/21 15:16	11/15/21 19:31	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8	mg/Kg		11/15/21 15:16	11/15/21 19:31	1

Eurofins Xenco, Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD Frac 13 SWD

Job ID: 880-8306-1
SDG: 21-0100-20

Client Sample ID: S-10 5'

Lab Sample ID: 880-8306-7

Date Collected: 11/11/21 13:42

Matrix: Solid

Date Received: 11/15/21 11:07

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Oil Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		11/15/21 15:16	11/15/21 19:31	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane (Surr)	110		70 - 130			11/15/21 15:16	11/15/21 19:31	1
o-Terphenyl (Surr)	127		70 - 130			11/15/21 15:16	11/15/21 19:31	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	28.7		4.97	mg/Kg			11/22/21 12:29	1

Client Sample ID: S-10 10'

Lab Sample ID: 880-8306-8

Date Collected: 11/11/21 13:43

Matrix: Solid

Date Received: 11/15/21 11:07

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		11/15/21 15:37	11/17/21 15:15	1
Toluene	<0.00199	U * - *1	0.00199	mg/Kg		11/15/21 15:37	11/17/21 15:15	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		11/15/21 15:37	11/17/21 15:15	1
m,p-Xylenes	<0.00398	U	0.00398	mg/Kg		11/15/21 15:37	11/17/21 15:15	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		11/15/21 15:37	11/17/21 15:15	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		11/15/21 15:37	11/17/21 15:15	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		70 - 130			11/15/21 15:37	11/17/21 15:15	1
1,4-Difluorobenzene (Surr)	105		70 - 130			11/15/21 15:37	11/17/21 15:15	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			11/18/21 15:58	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			11/16/21 08:57	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		11/15/21 15:16	11/15/21 19:53	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		11/15/21 15:16	11/15/21 19:53	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		11/15/21 15:16	11/15/21 19:53	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane (Surr)	105		70 - 130			11/15/21 15:16	11/15/21 19:53	1
o-Terphenyl (Surr)	121		70 - 130			11/15/21 15:16	11/15/21 19:53	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	19.2		5.02	mg/Kg			11/22/21 12:36	1

Eurofins Xenco, Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD Frac 13 SWD

Job ID: 880-8306-1
SDG: 21-0100-20

Client Sample ID: S-2 1'

Lab Sample ID: 880-8306-9

Date Collected: 11/11/21 13:56

Matrix: Solid

Date Received: 11/15/21 11:07

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/15/21 15:37	11/17/21 15:36	1
Toluene	<0.00200	U *- *1	0.00200	mg/Kg		11/15/21 15:37	11/17/21 15:36	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/15/21 15:37	11/17/21 15:36	1
m,p-Xylenes	<0.00400	U	0.00400	mg/Kg		11/15/21 15:37	11/17/21 15:36	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/15/21 15:37	11/17/21 15:36	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		11/15/21 15:37	11/17/21 15:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		70 - 130	11/15/21 15:37	11/17/21 15:36	1
1,4-Difluorobenzene (Surr)	105		70 - 130	11/15/21 15:37	11/17/21 15:36	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/Kg			11/18/21 15:58	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8	mg/Kg			11/16/21 08:57	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8	mg/Kg		11/15/21 15:16	11/15/21 20:15	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8	mg/Kg		11/15/21 15:16	11/15/21 20:15	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		11/15/21 15:16	11/15/21 20:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane (Surr)	102		70 - 130	11/15/21 15:16	11/15/21 20:15	1
o-Terphenyl (Surr)	117		70 - 130	11/15/21 15:16	11/15/21 20:15	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	949	F1	25.0	mg/Kg			11/20/21 20:37	5

Client Sample ID: S-2 3'

Lab Sample ID: 880-8306-10

Date Collected: 11/11/21 13:57

Matrix: Solid

Date Received: 11/15/21 11:07

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		11/15/21 15:37	11/17/21 15:56	1
Toluene	<0.00199	U *- *1	0.00199	mg/Kg		11/15/21 15:37	11/17/21 15:56	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		11/15/21 15:37	11/17/21 15:56	1
m,p-Xylenes	<0.00398	U	0.00398	mg/Kg		11/15/21 15:37	11/17/21 15:56	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		11/15/21 15:37	11/17/21 15:56	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		11/15/21 15:37	11/17/21 15:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		70 - 130	11/15/21 15:37	11/17/21 15:56	1
1,4-Difluorobenzene (Surr)	109		70 - 130	11/15/21 15:37	11/17/21 15:56	1

Eurofins Xenco, Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD Frac 13 SWD

Job ID: 880-8306-1
SDG: 21-0100-20

Client Sample ID: S-2 3'

Lab Sample ID: 880-8306-10

Date Collected: 11/11/21 13:57

Matrix: Solid

Date Received: 11/15/21 11:07

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			11/18/21 15:58	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			11/16/21 08:57	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		11/15/21 15:16	11/15/21 20:36	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		11/15/21 15:16	11/15/21 20:36	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		11/15/21 15:16	11/15/21 20:36	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane (Surr)	107		70 - 130			11/15/21 15:16	11/15/21 20:36	1
o-Terphenyl (Surr)	123		70 - 130			11/15/21 15:16	11/15/21 20:36	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	37.3		4.99	mg/Kg			11/20/21 20:52	1

Client Sample ID: S-2 5'

Lab Sample ID: 880-8306-11

Date Collected: 11/11/21 13:58

Matrix: Solid

Date Received: 11/15/21 11:07

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/15/21 15:37	11/17/21 17:21	1
Toluene	<0.00200	U * - *1	0.00200	mg/Kg		11/15/21 15:37	11/17/21 17:21	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/15/21 15:37	11/17/21 17:21	1
m,p-Xylenes	<0.00401	U	0.00401	mg/Kg		11/15/21 15:37	11/17/21 17:21	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/15/21 15:37	11/17/21 17:21	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		11/15/21 15:37	11/17/21 17:21	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		70 - 130			11/15/21 15:37	11/17/21 17:21	1
1,4-Difluorobenzene (Surr)	104		70 - 130			11/15/21 15:37	11/17/21 17:21	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401	mg/Kg			11/18/21 15:58	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			11/16/21 08:57	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		11/15/21 15:16	11/15/21 21:20	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		11/15/21 15:16	11/15/21 21:20	1

Eurofins Xenco, Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD Frac 13 SWD

Job ID: 880-8306-1
SDG: 21-0100-20

Client Sample ID: S-2 5'

Lab Sample ID: 880-8306-11

Date Collected: 11/11/21 13:58

Matrix: Solid

Date Received: 11/15/21 11:07

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		11/15/21 15:16	11/15/21 21:20	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane (Surr)	107		70 - 130			11/15/21 15:16	11/15/21 21:20	1
o-Terphenyl (Surr)	121		70 - 130			11/15/21 15:16	11/15/21 21:20	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	12.7		4.98	mg/Kg			11/20/21 20:57	1

Client Sample ID: S-2 10"

Lab Sample ID: 880-8306-12

Date Collected: 11/11/21 13:59

Matrix: Solid

Date Received: 11/15/21 11:07

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/15/21 15:37	11/17/21 17:41	1
Toluene	<0.00200	U * - *1	0.00200	mg/Kg		11/15/21 15:37	11/17/21 17:41	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/15/21 15:37	11/17/21 17:41	1
m,p-Xylenes	<0.00399	U	0.00399	mg/Kg		11/15/21 15:37	11/17/21 17:41	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/15/21 15:37	11/17/21 17:41	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		11/15/21 15:37	11/17/21 17:41	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		70 - 130			11/15/21 15:37	11/17/21 17:41	1
1,4-Difluorobenzene (Surr)	110		70 - 130			11/15/21 15:37	11/17/21 17:41	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			11/18/21 15:58	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			11/16/21 08:57	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		11/15/21 15:16	11/15/21 21:41	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		11/15/21 15:16	11/15/21 21:41	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		11/15/21 15:16	11/15/21 21:41	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane (Surr)	111		70 - 130			11/15/21 15:16	11/15/21 21:41	1
o-Terphenyl (Surr)	125		70 - 130			11/15/21 15:16	11/15/21 21:41	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	114		4.95	mg/Kg			11/20/21 21:02	1

Eurofins Xenco, Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD Frac 13 SWD

Job ID: 880-8306-1
SDG: 21-0100-20

Client Sample ID: S-3 1'

Lab Sample ID: 880-8306-13

Date Collected: 11/11/21 14:12

Matrix: Solid

Date Received: 11/15/21 11:07

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		11/15/21 15:37	11/17/21 18:02	1
Toluene	<0.00201	U *- *1	0.00201	mg/Kg		11/15/21 15:37	11/17/21 18:02	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		11/15/21 15:37	11/17/21 18:02	1
m,p-Xylenes	<0.00402	U	0.00402	mg/Kg		11/15/21 15:37	11/17/21 18:02	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		11/15/21 15:37	11/17/21 18:02	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		11/15/21 15:37	11/17/21 18:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		70 - 130	11/15/21 15:37	11/17/21 18:02	1
1,4-Difluorobenzene (Surr)	106		70 - 130	11/15/21 15:37	11/17/21 18:02	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			11/18/21 15:58	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			11/16/21 08:57	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		11/15/21 15:16	11/15/21 22:03	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		11/15/21 15:16	11/15/21 22:03	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		11/15/21 15:16	11/15/21 22:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane (Surr)	114		70 - 130	11/15/21 15:16	11/15/21 22:03	1
o-Terphenyl (Surr)	130		70 - 130	11/15/21 15:16	11/15/21 22:03	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1040		4.99	mg/Kg			11/20/21 21:07	1

Client Sample ID: S-3 3'

Lab Sample ID: 880-8306-14

Date Collected: 11/11/21 14:13

Matrix: Solid

Date Received: 11/15/21 11:07

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		11/15/21 15:37	11/17/21 18:23	1
Toluene	<0.00201	U *- *1	0.00201	mg/Kg		11/15/21 15:37	11/17/21 18:23	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		11/15/21 15:37	11/17/21 18:23	1
m,p-Xylenes	<0.00402	U	0.00402	mg/Kg		11/15/21 15:37	11/17/21 18:23	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		11/15/21 15:37	11/17/21 18:23	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		11/15/21 15:37	11/17/21 18:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	109		70 - 130	11/15/21 15:37	11/17/21 18:23	1
1,4-Difluorobenzene (Surr)	108		70 - 130	11/15/21 15:37	11/17/21 18:23	1

Eurofins Xenco, Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD Frac 13 SWD

Job ID: 880-8306-1
SDG: 21-0100-20

Client Sample ID: S-3 3'

Lab Sample ID: 880-8306-14

Date Collected: 11/11/21 14:13

Matrix: Solid

Date Received: 11/15/21 11:07

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			11/18/21 15:58	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			11/16/21 08:57	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		11/15/21 15:16	11/15/21 22:25	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		11/15/21 15:16	11/15/21 22:25	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		11/15/21 15:16	11/15/21 22:25	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane (Surr)	110		70 - 130			11/15/21 15:16	11/15/21 22:25	1
o-Terphenyl (Surr)	122		70 - 130			11/15/21 15:16	11/15/21 22:25	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1240		5.04	mg/Kg			11/21/21 14:55	1

Client Sample ID: S-3 5'

Lab Sample ID: 880-8306-15

Date Collected: 11/11/21 14:14

Matrix: Solid

Date Received: 11/15/21 11:07

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		11/15/21 15:37	11/17/21 18:43	1
Toluene	<0.00201	U * - *1	0.00201	mg/Kg		11/15/21 15:37	11/17/21 18:43	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		11/15/21 15:37	11/17/21 18:43	1
m,p-Xylenes	<0.00402	U	0.00402	mg/Kg		11/15/21 15:37	11/17/21 18:43	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		11/15/21 15:37	11/17/21 18:43	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		11/15/21 15:37	11/17/21 18:43	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		70 - 130			11/15/21 15:37	11/17/21 18:43	1
1,4-Difluorobenzene (Surr)	102		70 - 130			11/15/21 15:37	11/17/21 18:43	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			11/18/21 15:58	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			11/16/21 08:57	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		11/15/21 15:16	11/15/21 22:46	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		11/15/21 15:16	11/15/21 22:46	1

Eurofins Xenco, Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD Frac 13 SWD

Job ID: 880-8306-1
SDG: 21-0100-20

Client Sample ID: S-3 5'

Lab Sample ID: 880-8306-15

Date Collected: 11/11/21 14:14

Matrix: Solid

Date Received: 11/15/21 11:07

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		11/15/21 15:16	11/15/21 22:46	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane (Surr)	103		70 - 130			11/15/21 15:16	11/15/21 22:46	1
o-Terphenyl (Surr)	121		70 - 130			11/15/21 15:16	11/15/21 22:46	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	752		5.00	mg/Kg			11/21/21 15:00	1

Client Sample ID: S-3 10'

Lab Sample ID: 880-8306-16

Date Collected: 11/11/21 14:15

Matrix: Solid

Date Received: 11/15/21 11:07

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		11/15/21 15:37	11/17/21 19:04	1
Toluene	<0.00199	U * - *1	0.00199	mg/Kg		11/15/21 15:37	11/17/21 19:04	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		11/15/21 15:37	11/17/21 19:04	1
m,p-Xylenes	<0.00398	U	0.00398	mg/Kg		11/15/21 15:37	11/17/21 19:04	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		11/15/21 15:37	11/17/21 19:04	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		11/15/21 15:37	11/17/21 19:04	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		70 - 130			11/15/21 15:37	11/17/21 19:04	1
1,4-Difluorobenzene (Surr)	107		70 - 130			11/15/21 15:37	11/17/21 19:04	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			11/18/21 15:58	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8	mg/Kg			11/16/21 08:57	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8	mg/Kg		11/15/21 15:16	11/15/21 23:08	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8	mg/Kg		11/15/21 15:16	11/15/21 23:08	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		11/15/21 15:16	11/15/21 23:08	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane (Surr)	114		70 - 130			11/15/21 15:16	11/15/21 23:08	1
o-Terphenyl (Surr)	133	S1+	70 - 130			11/15/21 15:16	11/15/21 23:08	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	612		4.95	mg/Kg			11/21/21 15:05	1

Eurofins Xenco, Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD Frac 13 SWD

Job ID: 880-8306-1
SDG: 21-0100-20

Client Sample ID: S-4 1'

Lab Sample ID: 880-8306-17

Date Collected: 11/11/21 14:26

Matrix: Solid

Date Received: 11/15/21 11:07

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/15/21 15:37	11/17/21 19:25	1
Toluene	<0.00200	U *- *1	0.00200	mg/Kg		11/15/21 15:37	11/17/21 19:25	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/15/21 15:37	11/17/21 19:25	1
m,p-Xylenes	<0.00401	U	0.00401	mg/Kg		11/15/21 15:37	11/17/21 19:25	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/15/21 15:37	11/17/21 19:25	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		11/15/21 15:37	11/17/21 19:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		70 - 130	11/15/21 15:37	11/17/21 19:25	1
1,4-Difluorobenzene (Surr)	107		70 - 130	11/15/21 15:37	11/17/21 19:25	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401	mg/Kg			11/18/21 15:58	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			11/16/21 08:57	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		11/15/21 15:16	11/15/21 23:29	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		11/15/21 15:16	11/15/21 23:29	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		11/15/21 15:16	11/15/21 23:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane (Surr)	110		70 - 130	11/15/21 15:16	11/15/21 23:29	1
o-Terphenyl (Surr)	125		70 - 130	11/15/21 15:16	11/15/21 23:29	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	785		4.97	mg/Kg			11/21/21 15:10	1

Client Sample ID: S-4 3'

Lab Sample ID: 880-8306-18

Date Collected: 11/11/21 14:27

Matrix: Solid

Date Received: 11/15/21 11:07

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/15/21 15:37	11/17/21 19:45	1
Toluene	<0.00200	U *- *1	0.00200	mg/Kg		11/15/21 15:37	11/17/21 19:45	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/15/21 15:37	11/17/21 19:45	1
m,p-Xylenes	<0.00400	U	0.00400	mg/Kg		11/15/21 15:37	11/17/21 19:45	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/15/21 15:37	11/17/21 19:45	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		11/15/21 15:37	11/17/21 19:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		70 - 130	11/15/21 15:37	11/17/21 19:45	1
1,4-Difluorobenzene (Surr)	105		70 - 130	11/15/21 15:37	11/17/21 19:45	1

Eurofins Xenco, Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD Frac 13 SWD

Job ID: 880-8306-1
SDG: 21-0100-20

Client Sample ID: S-4 3'

Lab Sample ID: 880-8306-18

Date Collected: 11/11/21 14:27

Matrix: Solid

Date Received: 11/15/21 11:07

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/Kg			11/18/21 15:58	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			11/16/21 08:57	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		11/15/21 15:16	11/15/21 23:50	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		11/15/21 15:16	11/15/21 23:50	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		11/15/21 15:16	11/15/21 23:50	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane (Surr)	112		70 - 130			11/15/21 15:16	11/15/21 23:50	1
o-Terphenyl (Surr)	130		70 - 130			11/15/21 15:16	11/15/21 23:50	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	633		4.98	mg/Kg			11/21/21 15:15	1

Client Sample ID: S-4 5'

Lab Sample ID: 880-8306-19

Date Collected: 11/11/21 14:28

Matrix: Solid

Date Received: 11/15/21 11:07

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198	mg/Kg		11/15/21 15:37	11/17/21 20:06	1
Toluene	<0.00198	U *- *1	0.00198	mg/Kg		11/15/21 15:37	11/17/21 20:06	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		11/15/21 15:37	11/17/21 20:06	1
m,p-Xylenes	<0.00396	U	0.00396	mg/Kg		11/15/21 15:37	11/17/21 20:06	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		11/15/21 15:37	11/17/21 20:06	1
Xylenes, Total	<0.00396	U	0.00396	mg/Kg		11/15/21 15:37	11/17/21 20:06	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		70 - 130			11/15/21 15:37	11/17/21 20:06	1
1,4-Difluorobenzene (Surr)	103		70 - 130			11/15/21 15:37	11/17/21 20:06	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396	mg/Kg			11/18/21 15:58	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			11/16/21 08:57	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		11/15/21 15:16	11/16/21 00:12	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		11/15/21 15:16	11/16/21 00:12	1

Eurofins Xenco, Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD Frac 13 SWD

Job ID: 880-8306-1
SDG: 21-0100-20

Client Sample ID: S-4 5'

Lab Sample ID: 880-8306-19

Date Collected: 11/11/21 14:28

Matrix: Solid

Date Received: 11/15/21 11:07

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		11/15/21 15:16	11/16/21 00:12	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane (Surr)	110		70 - 130			11/15/21 15:16	11/16/21 00:12	1
o-Terphenyl (Surr)	132	S1+	70 - 130			11/15/21 15:16	11/16/21 00:12	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	784	F1	4.95	mg/Kg			11/21/21 15:20	1

Client Sample ID: S-4 10'

Lab Sample ID: 880-8306-20

Date Collected: 11/11/21 14:29

Matrix: Solid

Date Received: 11/15/21 11:07

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198	mg/Kg		11/15/21 15:37	11/17/21 20:27	1
Toluene	<0.00198	U *- *1	0.00198	mg/Kg		11/15/21 15:37	11/17/21 20:27	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		11/15/21 15:37	11/17/21 20:27	1
m,p-Xylenes	<0.00397	U	0.00397	mg/Kg		11/15/21 15:37	11/17/21 20:27	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		11/15/21 15:37	11/17/21 20:27	1
Xylenes, Total	<0.00397	U	0.00397	mg/Kg		11/15/21 15:37	11/17/21 20:27	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		70 - 130			11/15/21 15:37	11/17/21 20:27	1
1,4-Difluorobenzene (Surr)	100		70 - 130			11/15/21 15:37	11/17/21 20:27	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00397	U	0.00397	mg/Kg			11/18/21 15:58	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8	mg/Kg			11/16/21 08:57	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8	mg/Kg		11/15/21 15:16	11/16/21 00:33	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8	mg/Kg		11/15/21 15:16	11/16/21 00:33	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		11/15/21 15:16	11/16/21 00:33	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane (Surr)	109		70 - 130			11/15/21 15:16	11/16/21 00:33	1
o-Terphenyl (Surr)	127		70 - 130			11/15/21 15:16	11/16/21 00:33	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	53.0		5.04	mg/Kg			11/21/21 15:35	1

Eurofins Xenco, Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD Frac 13 SWD

Job ID: 880-8306-1
SDG: 21-0100-20

Client Sample ID: S-5 1'

Lab Sample ID: 880-8306-21

Date Collected: 11/11/21 14:40

Matrix: Solid

Date Received: 11/15/21 11:07

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/17/21 10:11	11/17/21 16:03	1
Toluene	<0.00200	U	0.00200	mg/Kg		11/17/21 10:11	11/17/21 16:03	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/17/21 10:11	11/17/21 16:03	1
m,p-Xylenes	<0.00400	U	0.00400	mg/Kg		11/17/21 10:11	11/17/21 16:03	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/17/21 10:11	11/17/21 16:03	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		11/17/21 10:11	11/17/21 16:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	71		70 - 130	11/17/21 10:11	11/17/21 16:03	1
1,4-Difluorobenzene (Surr)	118		70 - 130	11/17/21 10:11	11/17/21 16:03	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/Kg			11/22/21 13:36	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.7	U	49.7	mg/Kg			11/16/21 13:46	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.7	U	49.7	mg/Kg		11/15/21 14:49	11/15/21 19:09	1
Diesel Range Organics (Over C10-C28)	<49.7	U	49.7	mg/Kg		11/15/21 14:49	11/15/21 19:09	1
Oil Range Organics (Over C28-C36)	<49.7	U	49.7	mg/Kg		11/15/21 14:49	11/15/21 19:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane (Surr)	102		70 - 130	11/15/21 14:49	11/15/21 19:09	1
o-Terphenyl (Surr)	111		70 - 130	11/15/21 14:49	11/15/21 19:09	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	855		5.01	mg/Kg			11/21/21 15:40	1

Client Sample ID: S-5 3'

Lab Sample ID: 880-8306-22

Date Collected: 11/11/21 14:41

Matrix: Solid

Date Received: 11/15/21 11:07

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198	mg/Kg		11/17/21 10:11	11/17/21 16:24	1
Toluene	<0.00198	U	0.00198	mg/Kg		11/17/21 10:11	11/17/21 16:24	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		11/17/21 10:11	11/17/21 16:24	1
m,p-Xylenes	<0.00397	U	0.00397	mg/Kg		11/17/21 10:11	11/17/21 16:24	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		11/17/21 10:11	11/17/21 16:24	1
Xylenes, Total	<0.00397	U	0.00397	mg/Kg		11/17/21 10:11	11/17/21 16:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	124		70 - 130	11/17/21 10:11	11/17/21 16:24	1
1,4-Difluorobenzene (Surr)	100		70 - 130	11/17/21 10:11	11/17/21 16:24	1

Eurofins Xenco, Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD Frac 13 SWD

Job ID: 880-8306-1
SDG: 21-0100-20

Client Sample ID: S-5 3'

Lab Sample ID: 880-8306-22

Date Collected: 11/11/21 14:41

Matrix: Solid

Date Received: 11/15/21 11:07

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00397	U	0.00397	mg/Kg			11/22/21 13:36	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8	mg/Kg			11/16/21 13:46	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8	mg/Kg		11/15/21 14:49	11/15/21 19:31	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8	mg/Kg		11/15/21 14:49	11/15/21 19:31	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		11/15/21 14:49	11/15/21 19:31	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane (Surr)	103		70 - 130			11/15/21 14:49	11/15/21 19:31	1
o-Terphenyl (Surr)	114		70 - 130			11/15/21 14:49	11/15/21 19:31	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	213		5.00	mg/Kg			11/21/21 15:54	1

Client Sample ID: S-5 5'

Lab Sample ID: 880-8306-23

Date Collected: 11/11/21 14:42

Matrix: Solid

Date Received: 11/15/21 11:07

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/17/21 10:11	11/17/21 16:44	1
Toluene	<0.00200	U	0.00200	mg/Kg		11/17/21 10:11	11/17/21 16:44	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/17/21 10:11	11/17/21 16:44	1
m,p-Xylenes	<0.00399	U	0.00399	mg/Kg		11/17/21 10:11	11/17/21 16:44	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/17/21 10:11	11/17/21 16:44	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		11/17/21 10:11	11/17/21 16:44	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		70 - 130			11/17/21 10:11	11/17/21 16:44	1
1,4-Difluorobenzene (Surr)	90		70 - 130			11/17/21 10:11	11/17/21 16:44	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			11/22/21 13:36	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			11/16/21 13:46	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		11/15/21 14:49	11/15/21 19:53	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		11/15/21 14:49	11/15/21 19:53	1

Eurofins Xenco, Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD Frac 13 SWD

Job ID: 880-8306-1
SDG: 21-0100-20

Client Sample ID: S-5 5'

Lab Sample ID: 880-8306-23

Date Collected: 11/11/21 14:42

Matrix: Solid

Date Received: 11/15/21 11:07

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		11/15/21 14:49	11/15/21 19:53	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane (Surr)	123		70 - 130			11/15/21 14:49	11/15/21 19:53	1
o-Terphenyl (Surr)	134	S1+	70 - 130			11/15/21 14:49	11/15/21 19:53	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	588		5.03	mg/Kg			11/21/21 15:59	1

Client Sample ID: S-5 10'

Lab Sample ID: 880-8306-24

Date Collected: 11/11/21 14:43

Matrix: Solid

Date Received: 11/15/21 11:07

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/17/21 10:11	11/17/21 18:54	1
Toluene	<0.00200	U	0.00200	mg/Kg		11/17/21 10:11	11/17/21 18:54	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/17/21 10:11	11/17/21 18:54	1
m,p-Xylenes	<0.00399	U	0.00399	mg/Kg		11/17/21 10:11	11/17/21 18:54	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/17/21 10:11	11/17/21 18:54	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		11/17/21 10:11	11/17/21 18:54	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	110		70 - 130			11/17/21 10:11	11/17/21 18:54	1
1,4-Difluorobenzene (Surr)	98		70 - 130			11/17/21 10:11	11/17/21 18:54	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			11/22/21 13:36	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8	mg/Kg			11/16/21 13:46	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8	mg/Kg		11/15/21 14:49	11/15/21 20:15	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8	mg/Kg		11/15/21 14:49	11/15/21 20:15	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		11/15/21 14:49	11/15/21 20:15	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane (Surr)	106		70 - 130			11/15/21 14:49	11/15/21 20:15	1
o-Terphenyl (Surr)	116		70 - 130			11/15/21 14:49	11/15/21 20:15	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.01	U	5.01	mg/Kg			11/21/21 16:04	1

Eurofins Xenco, Midland

Surrogate Summary

Client: Larson & Associates, Inc.
Project/Site: SD Frac 13 SWD

Job ID: 880-8306-1
SDG: 21-0100-20

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		BFB1 (70-130)	DFBZ1 (70-130)
880-8306-1	S-1 1'	91	101
880-8306-1 MS	S-1 1'	116	111
880-8306-1 MSD	S-1 1'	108	96
880-8306-2	S-1 3'	96	106
880-8306-3	S-1 5'	97	106
880-8306-4	S-1 10'	96	105
880-8306-5	S-10 1'	95	105
880-8306-6	S-10 3'	99	106
880-8306-7	S-10 5'	104	110
880-8306-8	S-10 10'	98	105
880-8306-9	S-2 1'	102	105
880-8306-10	S-2 3'	102	109
880-8306-11	S-2 5'	98	104
880-8306-12	S-2 10"	98	110
880-8306-13	S-3 1'	100	106
880-8306-14	S-3 3'	109	108
880-8306-15	S-3 5'	102	102
880-8306-16	S-3 10'	96	107
880-8306-17	S-4 1'	105	107
880-8306-18	S-4 3'	93	105
880-8306-19	S-4 5'	97	103
880-8306-20	S-4 10'	96	100
880-8306-21	S-5 1'	71	118
880-8306-22	S-5 3'	124	100
880-8306-23	S-5 5'	95	90
880-8306-24	S-5 10'	110	98
890-1573-A-31-B MSD	Matrix Spike Duplicate	122	103
890-1573-A-31-E MS	Matrix Spike	130	103
LCS 880-12347/1-A	Lab Control Sample	95	98
LCS 880-12436/1-A	Lab Control Sample	118	96
LCSD 880-12347/2-A	Lab Control Sample Dup	102	94
LCSD 880-12436/2-A	Lab Control Sample Dup	112	98
MB 880-12347/5-A	Method Blank	104	96
MB 880-12436/5-A	Method Blank	122	103

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DFBZ = 1,4-Difluorobenzene (Surr)

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		1CO1 (70-130)	OTPH1 (70-130)
880-8306-1	S-1 1'	113	132 S1+
880-8306-1 MS	S-1 1'	109	106
880-8306-1 MSD	S-1 1'	98	102
880-8306-2	S-1 3'	107	120
880-8306-3	S-1 5'	112	129

Eurofins Xenco, Midland

Surrogate Summary

Client: Larson & Associates, Inc.

Job ID: 880-8306-1

Project/Site: SD Frac 13 SWD

SDG: 21-0100-20

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
880-8306-4	S-1 10'	108	123
880-8306-5	S-10 1'	98	111
880-8306-6	S-10 3'	119	138 S1+
880-8306-7	S-10 5'	110	127
880-8306-8	S-10 10'	105	121
880-8306-9	S-2 1'	102	117
880-8306-10	S-2 3'	107	123
880-8306-11	S-2 5'	107	121
880-8306-12	S-2 10"	111	125
880-8306-13	S-3 1'	114	130
880-8306-14	S-3 3'	110	122
880-8306-15	S-3 5'	103	121
880-8306-16	S-3 10'	114	133 S1+
880-8306-17	S-4 1'	110	125
880-8306-18	S-4 3'	112	130
880-8306-19	S-4 5'	110	132 S1+
880-8306-20	S-4 10'	109	127
880-8306-21	S-5 1'	102	111
880-8306-22	S-5 3'	103	114
880-8306-23	S-5 5'	123	134 S1+
880-8306-24	S-5 10'	106	116
890-1551-A-2-C MS	Matrix Spike	129	125
890-1551-A-2-D MSD	Matrix Spike Duplicate	108	106
LCS 880-12340/2-A	Lab Control Sample	99	109
LCS 880-12346/2-A	Lab Control Sample	109	112
LCSD 880-12340/3-A	Lab Control Sample Dup	100	110
LCSD 880-12346/3-A	Lab Control Sample Dup	103	114
MB 880-12340/1-A	Method Blank	129	146 S1+
MB 880-12346/1-A	Method Blank	123	147 S1+

Surrogate Legend

1CO = 1-Chlorooctane (Surr)

OTPH = o-Terphenyl (Surr)

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD Frac 13 SWD

Job ID: 880-8306-1
SDG: 21-0100-20

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-12347/5-A

Matrix: Solid

Analysis Batch: 12498

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 12347

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/15/21 15:37	11/17/21 12:28	1
Toluene	<0.00200	U	0.00200	mg/Kg		11/15/21 15:37	11/17/21 12:28	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/15/21 15:37	11/17/21 12:28	1
m,p-Xylenes	<0.00400	U	0.00400	mg/Kg		11/15/21 15:37	11/17/21 12:28	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/15/21 15:37	11/17/21 12:28	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		11/15/21 15:37	11/17/21 12:28	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		70 - 130	11/15/21 15:37	11/17/21 12:28	1
1,4-Difluorobenzene (Surr)	96		70 - 130	11/15/21 15:37	11/17/21 12:28	1

Lab Sample ID: LCS 880-12347/1-A

Matrix: Solid

Analysis Batch: 12498

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 12347

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.100	0.07637		mg/Kg		76	70 - 130
Toluene	0.100	0.003302	*-	mg/Kg		3	70 - 130
Ethylbenzene	0.100	0.08182		mg/Kg		82	70 - 130
m,p-Xylenes	0.200	0.1577		mg/Kg		79	70 - 130
o-Xylene	0.100	0.08074		mg/Kg		81	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	95		70 - 130
1,4-Difluorobenzene (Surr)	98		70 - 130

Lab Sample ID: LCSD 880-12347/2-A

Matrix: Solid

Analysis Batch: 12498

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 12347

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Benzene	0.100	0.07921		mg/Kg		79	70 - 130	4	35
Toluene	0.100	0.08311	*1	mg/Kg		83	70 - 130	185	35
Ethylbenzene	0.100	0.09278		mg/Kg		93	70 - 130	13	35
m,p-Xylenes	0.200	0.1801		mg/Kg		90	70 - 130	13	35
o-Xylene	0.100	0.09149		mg/Kg		91	70 - 130	12	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	102		70 - 130
1,4-Difluorobenzene (Surr)	94		70 - 130

Lab Sample ID: 880-8306-1 MS

Matrix: Solid

Analysis Batch: 12498

Client Sample ID: S-1 1'

Prep Type: Total/NA

Prep Batch: 12347

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	<0.00200	U	0.100	0.07194		mg/Kg		72	70 - 130
Toluene	<0.00200	U *- *1	0.100	0.07267		mg/Kg		73	70 - 130

Eurofins Xenco, Midland

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD Frac 13 SWD

Job ID: 880-8306-1
SDG: 21-0100-20

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 880-8306-1 MS

Matrix: Solid

Analysis Batch: 12498

Client Sample ID: S-1 1'

Prep Type: Total/NA

Prep Batch: 12347

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	<0.00200	U	0.100	0.07804		mg/Kg		78	70 - 130
m,p-Xylenes	<0.00399	U	0.200	0.1500		mg/Kg		75	70 - 130
o-Xylene	<0.00200	U	0.100	0.07623		mg/Kg		76	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	116		70 - 130
1,4-Difluorobenzene (Surr)	111		70 - 130

Lab Sample ID: 880-8306-1 MSD

Matrix: Solid

Analysis Batch: 12498

Client Sample ID: S-1 1'

Prep Type: Total/NA

Prep Batch: 12347

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	<0.00200	U	0.0994	0.07041		mg/Kg		71	70 - 130	2	35
Toluene	<0.00200	U *- *1	0.0994	0.07368		mg/Kg		74	70 - 130	1	35
Ethylbenzene	<0.00200	U	0.0994	0.08130		mg/Kg		82	70 - 130	4	35
m,p-Xylenes	<0.00399	U	0.199	0.1576		mg/Kg		79	70 - 130	5	35
o-Xylene	<0.00200	U	0.0994	0.08006		mg/Kg		81	70 - 130	5	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	108		70 - 130
1,4-Difluorobenzene (Surr)	96		70 - 130

Lab Sample ID: MB 880-12436/5-A

Matrix: Solid

Analysis Batch: 12499

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 12436

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/17/21 10:11	11/17/21 13:32	1
Toluene	<0.00200	U	0.00200	mg/Kg		11/17/21 10:11	11/17/21 13:32	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/17/21 10:11	11/17/21 13:32	1
m,p-Xylenes	<0.00400	U	0.00400	mg/Kg		11/17/21 10:11	11/17/21 13:32	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/17/21 10:11	11/17/21 13:32	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		11/17/21 10:11	11/17/21 13:32	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	122		70 - 130	11/17/21 10:11	11/17/21 13:32	1
1,4-Difluorobenzene (Surr)	103		70 - 130	11/17/21 10:11	11/17/21 13:32	1

Lab Sample ID: LCS 880-12436/1-A

Matrix: Solid

Analysis Batch: 12499

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 12436

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.100	0.07333		mg/Kg		73	70 - 130
Toluene	0.100	0.08622		mg/Kg		86	70 - 130
Ethylbenzene	0.100	0.09167		mg/Kg		92	70 - 130
m,p-Xylenes	0.200	0.1797		mg/Kg		90	70 - 130

Eurofins Xenco, Midland

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD Frac 13 SWD

Job ID: 880-8306-1
SDG: 21-0100-20

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: LCS 880-12436/1-A

Matrix: Solid

Analysis Batch: 12499

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 12436

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
o-Xylene	0.100	0.08797		mg/Kg		88	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	118		70 - 130
1,4-Difluorobenzene (Surr)	96		70 - 130

Lab Sample ID: LCSD 880-12436/2-A

Matrix: Solid

Analysis Batch: 12499

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 12436

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Benzene	0.100	0.07423		mg/Kg		74	70 - 130	1	35
Toluene	0.100	0.08825		mg/Kg		88	70 - 130	2	35
Ethylbenzene	0.100	0.09292		mg/Kg		93	70 - 130	1	35
m,p-Xylenes	0.200	0.1800		mg/Kg		90	70 - 130	0	35
o-Xylene	0.100	0.08949		mg/Kg		89	70 - 130	2	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	112		70 - 130
1,4-Difluorobenzene (Surr)	98		70 - 130

Lab Sample ID: 890-1573-A-31-B MSD

Matrix: Solid

Analysis Batch: 12499

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 12436

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Benzene	<0.00200	U	0.0998	0.08963		mg/Kg		89	70 - 130	17	35
Toluene	<0.00200	U	0.0998	0.08378		mg/Kg		84	70 - 130	2	35
Ethylbenzene	<0.00200	U	0.0998	0.07603		mg/Kg		76	70 - 130	2	35
m,p-Xylenes	<0.00399	U	0.200	0.1493		mg/Kg		74	70 - 130	2	35
o-Xylene	<0.00200	U	0.0998	0.07387		mg/Kg		74	70 - 130	4	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	122		70 - 130
1,4-Difluorobenzene (Surr)	103		70 - 130

Lab Sample ID: 890-1573-A-31-E MS

Matrix: Solid

Analysis Batch: 12499

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 12436

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	<0.00200	U	0.0996	0.07595		mg/Kg		75	70 - 130
Toluene	<0.00200	U	0.0996	0.08237		mg/Kg		83	70 - 130
Ethylbenzene	<0.00200	U	0.0996	0.07426		mg/Kg		75	70 - 130
m,p-Xylenes	<0.00399	U	0.199	0.1525		mg/Kg		76	70 - 130
o-Xylene	<0.00200	U	0.0996	0.07690		mg/Kg		77	70 - 130

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QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD Frac 13 SWD

Job ID: 880-8306-1
SDG: 21-0100-20

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 890-1573-A-31-E MS

Matrix: Solid

Analysis Batch: 12499

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 12436

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	130		70 - 130
1,4-Difluorobenzene (Surr)	103		70 - 130

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 880-12340/1-A

Matrix: Solid

Analysis Batch: 12232

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 12340

	MB	MB							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		11/15/21 14:49	11/15/21 15:28	1	
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		11/15/21 14:49	11/15/21 15:28	1	
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		11/15/21 14:49	11/15/21 15:28	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
1-Chlorooctane (Surr)	129		70 - 130			11/15/21 14:49	11/15/21 15:28	1	
o-Terphenyl (Surr)	146	S1+	70 - 130			11/15/21 14:49	11/15/21 15:28	1	

Lab Sample ID: LCS 880-12340/2-A

Matrix: Solid

Analysis Batch: 12232

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 12340

	Spike	LCS	LCS					%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Gasoline Range Organics (GRO)-C6-C10	1000	1048		mg/Kg		105	70 - 130		
Diesel Range Organics (Over C10-C28)	1000	922.2		mg/Kg		92	70 - 130		
Surrogate	%Recovery	Qualifier	Limits						
1-Chlorooctane (Surr)	99		70 - 130						
o-Terphenyl (Surr)	109		70 - 130						

Lab Sample ID: LCSD 880-12340/3-A

Matrix: Solid

Analysis Batch: 12232

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 12340

	Spike	LCSD	LCSD					%Rec.	RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics (GRO)-C6-C10	1000	1092		mg/Kg		109	70 - 130	4	20
Diesel Range Organics (Over C10-C28)	1000	941.2		mg/Kg		94	70 - 130	2	20
Surrogate	%Recovery	Qualifier	Limits						
1-Chlorooctane (Surr)	100		70 - 130						
o-Terphenyl (Surr)	110		70 - 130						

Eurofins Xenco, Midland

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD Frac 13 SWD

Job ID: 880-8306-1
SDG: 21-0100-20

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: 890-1551-A-2-C MS

Matrix: Solid

Analysis Batch: 12232

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 12340

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	997	1182		mg/Kg		119	70 - 130
Diesel Range Organics (Over C10-C28)	<50.0	U	997	1218		mg/Kg		120	70 - 130
Surrogate	MS %Recovery	MS Qualifier	Limits						
1-Chlorooctane (Surr)	129		70 - 130						
o-Terphenyl (Surr)	125		70 - 130						

Lab Sample ID: 890-1551-A-2-D MSD

Matrix: Solid

Analysis Batch: 12232

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 12340

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	998	1118		mg/Kg		112	70 - 130	6	20
Diesel Range Organics (Over C10-C28)	<50.0	U	998	1036		mg/Kg		102	70 - 130	16	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1-Chlorooctane (Surr)	108		70 - 130								
o-Terphenyl (Surr)	106		70 - 130								

Lab Sample ID: MB 880-12346/1-A

Matrix: Solid

Analysis Batch: 12230

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 12346

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		11/15/21 15:16	11/15/21 15:28	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		11/15/21 15:16	11/15/21 15:28	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		11/15/21 15:16	11/15/21 15:28	1
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane (Surr)	123		70 - 130			11/15/21 15:16	11/15/21 15:28	1
o-Terphenyl (Surr)	147	S1+	70 - 130			11/15/21 15:16	11/15/21 15:28	1

Lab Sample ID: LCS 880-12346/2-A

Matrix: Solid

Analysis Batch: 12230

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 12346

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO)-C6-C10	1000	943.7		mg/Kg		94	70 - 130
Diesel Range Organics (Over C10-C28)	1000	1110		mg/Kg		111	70 - 130

Eurofins Xenco, Midland

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD Frac 13 SWD

Job ID: 880-8306-1
SDG: 21-0100-20

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: LCS 880-12346/2-A

Matrix: Solid

Analysis Batch: 12230

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 12346

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane (Surr)	109		70 - 130
o-Terphenyl (Surr)	112		70 - 130

Lab Sample ID: LCSD 880-12346/3-A

Matrix: Solid

Analysis Batch: 12230

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 12346

			Spike	LCSD	LCSD				%Rec.		RPD
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics (GRO)-C6-C10			1000	869.9		mg/Kg		87	70 - 130	8	20
Diesel Range Organics (Over C10-C28)			1000	1075		mg/Kg		107	70 - 130	3	20

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane (Surr)	103		70 - 130
o-Terphenyl (Surr)	114		70 - 130

Lab Sample ID: 880-8306-1 MS

Matrix: Solid

Analysis Batch: 12230

Client Sample ID: S-1 1'

Prep Type: Total/NA

Prep Batch: 12346

	Sample	Sample	Spike	MS	MS				%Rec.		
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	997	1032		mg/Kg		103	70 - 130		
Diesel Range Organics (Over C10-C28)	<50.0	U	997	908.7		mg/Kg		89	70 - 130		

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane (Surr)	109		70 - 130
o-Terphenyl (Surr)	106		70 - 130

Lab Sample ID: 880-8306-1 MSD

Matrix: Solid

Analysis Batch: 12230

Client Sample ID: S-1 1'

Prep Type: Total/NA

Prep Batch: 12346

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	998	975.2		mg/Kg		98	70 - 130	6	20
Diesel Range Organics (Over C10-C28)	<50.0	U	998	864.7		mg/Kg		84	70 - 130	5	20

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane (Surr)	98		70 - 130
o-Terphenyl (Surr)	102		70 - 130

Eurofins Xenco, Midland

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD Frac 13 SWD

Job ID: 880-8306-1
SDG: 21-0100-20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-12493/1-A

Matrix: Solid

Analysis Batch: 12846

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			11/20/21 20:23	1

Lab Sample ID: LCS 880-12493/2-A

Matrix: Solid

Analysis Batch: 12846

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	250	257.0		mg/Kg		103	90 - 110

Lab Sample ID: LCSD 880-12493/3-A

Matrix: Solid

Analysis Batch: 12846

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	250	257.9		mg/Kg		103	90 - 110	0	20

Lab Sample ID: 880-8306-9 MS

Matrix: Solid

Analysis Batch: 12846

Client Sample ID: S-2 1'

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	949	F1	1250	2422	F1	mg/Kg		118	90 - 110

Lab Sample ID: 880-8306-9 MSD

Matrix: Solid

Analysis Batch: 12846

Client Sample ID: S-2 1'

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	949	F1	1250	2450	F1	mg/Kg		120	90 - 110	1	20

Lab Sample ID: 880-8306-19 MS

Matrix: Solid

Analysis Batch: 12846

Client Sample ID: S-4 5'

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	784	F1	248	1057	F1	mg/Kg		111	90 - 110

Lab Sample ID: 880-8306-19 MSD

Matrix: Solid

Analysis Batch: 12846

Client Sample ID: S-4 5'

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	784	F1	248	1079	F1	mg/Kg		119	90 - 110	2	20

Lab Sample ID: MB 880-12495/1-A

Matrix: Solid

Analysis Batch: 12947

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			11/22/21 09:10	1

Eurofins Xenco, Midland

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD Frac 13 SWD

Job ID: 880-8306-1
SDG: 21-0100-20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: LCS 880-12495/2-A

Matrix: Solid

Analysis Batch: 12947

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride			250	259.2		mg/Kg		104	90 - 110		

Lab Sample ID: LCSD 880-12495/3-A

Matrix: Solid

Analysis Batch: 12947

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride			250	259.4		mg/Kg		104	90 - 110	0	20

Lab Sample ID: 880-8306-1 MS

Matrix: Solid

Analysis Batch: 12947

Client Sample ID: S-1 1'

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride	2680		1240	3857		mg/Kg		95	90 - 110		

Lab Sample ID: 880-8306-1 MSD

Matrix: Solid

Analysis Batch: 12947

Client Sample ID: S-1 1'

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	2680		1240	3850		mg/Kg		95	90 - 110	0	20

Eurofins Xenco, Midland

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: SD Frac 13 SWD

Job ID: 880-8306-1
SDG: 21-0100-20

GC VOA

Prep Batch: 12347

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-8306-1	S-1 1'	Total/NA	Solid	5035	
880-8306-2	S-1 3'	Total/NA	Solid	5035	
880-8306-3	S-1 5'	Total/NA	Solid	5035	
880-8306-4	S-1 10'	Total/NA	Solid	5035	
880-8306-5	S-10 1'	Total/NA	Solid	5035	
880-8306-6	S-10 3'	Total/NA	Solid	5035	
880-8306-7	S-10 5'	Total/NA	Solid	5035	
880-8306-8	S-10 10'	Total/NA	Solid	5035	
880-8306-9	S-2 1'	Total/NA	Solid	5035	
880-8306-10	S-2 3'	Total/NA	Solid	5035	
880-8306-11	S-2 5'	Total/NA	Solid	5035	
880-8306-12	S-2 10"	Total/NA	Solid	5035	
880-8306-13	S-3 1'	Total/NA	Solid	5035	
880-8306-14	S-3 3'	Total/NA	Solid	5035	
880-8306-15	S-3 5'	Total/NA	Solid	5035	
880-8306-16	S-3 10'	Total/NA	Solid	5035	
880-8306-17	S-4 1'	Total/NA	Solid	5035	
880-8306-18	S-4 3'	Total/NA	Solid	5035	
880-8306-19	S-4 5'	Total/NA	Solid	5035	
880-8306-20	S-4 10'	Total/NA	Solid	5035	
MB 880-12347/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-12347/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-12347/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-8306-1 MS	S-1 1'	Total/NA	Solid	5035	
880-8306-1 MSD	S-1 1'	Total/NA	Solid	5035	

Prep Batch: 12436

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-8306-21	S-5 1'	Total/NA	Solid	5035	
880-8306-22	S-5 3'	Total/NA	Solid	5035	
880-8306-23	S-5 5'	Total/NA	Solid	5035	
880-8306-24	S-5 10'	Total/NA	Solid	5035	
MB 880-12436/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-12436/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-12436/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-1573-A-31-B MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	
890-1573-A-31-E MS	Matrix Spike	Total/NA	Solid	5035	

Analysis Batch: 12498

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-8306-1	S-1 1'	Total/NA	Solid	8021B	12347
880-8306-2	S-1 3'	Total/NA	Solid	8021B	12347
880-8306-3	S-1 5'	Total/NA	Solid	8021B	12347
880-8306-4	S-1 10'	Total/NA	Solid	8021B	12347
880-8306-5	S-10 1'	Total/NA	Solid	8021B	12347
880-8306-6	S-10 3'	Total/NA	Solid	8021B	12347
880-8306-7	S-10 5'	Total/NA	Solid	8021B	12347
880-8306-8	S-10 10'	Total/NA	Solid	8021B	12347
880-8306-9	S-2 1'	Total/NA	Solid	8021B	12347
880-8306-10	S-2 3'	Total/NA	Solid	8021B	12347
880-8306-11	S-2 5'	Total/NA	Solid	8021B	12347

Eurofins Xenco, Midland

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: SD Frac 13 SWD

Job ID: 880-8306-1
SDG: 21-0100-20

GC VOA (Continued)

Analysis Batch: 12498 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-8306-12	S-2 10"	Total/NA	Solid	8021B	12347
880-8306-13	S-3 1'	Total/NA	Solid	8021B	12347
880-8306-14	S-3 3'	Total/NA	Solid	8021B	12347
880-8306-15	S-3 5'	Total/NA	Solid	8021B	12347
880-8306-16	S-3 10'	Total/NA	Solid	8021B	12347
880-8306-17	S-4 1'	Total/NA	Solid	8021B	12347
880-8306-18	S-4 3'	Total/NA	Solid	8021B	12347
880-8306-19	S-4 5'	Total/NA	Solid	8021B	12347
880-8306-20	S-4 10'	Total/NA	Solid	8021B	12347
MB 880-12347/5-A	Method Blank	Total/NA	Solid	8021B	12347
LCS 880-12347/1-A	Lab Control Sample	Total/NA	Solid	8021B	12347
LCSD 880-12347/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	12347
880-8306-1 MS	S-1 1'	Total/NA	Solid	8021B	12347
880-8306-1 MSD	S-1 1'	Total/NA	Solid	8021B	12347

Analysis Batch: 12499

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-8306-21	S-5 1'	Total/NA	Solid	8021B	12436
880-8306-22	S-5 3'	Total/NA	Solid	8021B	12436
880-8306-23	S-5 5'	Total/NA	Solid	8021B	12436
880-8306-24	S-5 10'	Total/NA	Solid	8021B	12436
MB 880-12436/5-A	Method Blank	Total/NA	Solid	8021B	12436
LCS 880-12436/1-A	Lab Control Sample	Total/NA	Solid	8021B	12436
LCSD 880-12436/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	12436
890-1573-A-31-B MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	12436
890-1573-A-31-E MS	Matrix Spike	Total/NA	Solid	8021B	12436

Analysis Batch: 12685

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-8306-1	S-1 1'	Total/NA	Solid	Total BTEX	
880-8306-2	S-1 3'	Total/NA	Solid	Total BTEX	
880-8306-3	S-1 5'	Total/NA	Solid	Total BTEX	
880-8306-4	S-1 10'	Total/NA	Solid	Total BTEX	
880-8306-5	S-10 1'	Total/NA	Solid	Total BTEX	
880-8306-6	S-10 3'	Total/NA	Solid	Total BTEX	
880-8306-7	S-10 5'	Total/NA	Solid	Total BTEX	
880-8306-8	S-10 10'	Total/NA	Solid	Total BTEX	
880-8306-9	S-2 1'	Total/NA	Solid	Total BTEX	
880-8306-10	S-2 3'	Total/NA	Solid	Total BTEX	
880-8306-11	S-2 5'	Total/NA	Solid	Total BTEX	
880-8306-12	S-2 10"	Total/NA	Solid	Total BTEX	
880-8306-13	S-3 1'	Total/NA	Solid	Total BTEX	
880-8306-14	S-3 3'	Total/NA	Solid	Total BTEX	
880-8306-15	S-3 5'	Total/NA	Solid	Total BTEX	
880-8306-16	S-3 10'	Total/NA	Solid	Total BTEX	
880-8306-17	S-4 1'	Total/NA	Solid	Total BTEX	
880-8306-18	S-4 3'	Total/NA	Solid	Total BTEX	
880-8306-19	S-4 5'	Total/NA	Solid	Total BTEX	
880-8306-20	S-4 10'	Total/NA	Solid	Total BTEX	

Eurofins Xenco, Midland

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: SD Frac 13 SWD

Job ID: 880-8306-1
SDG: 21-0100-20

GC VOA

Analysis Batch: 12945

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-8306-21	S-5 1'	Total/NA	Solid	Total BTEX	
880-8306-22	S-5 3'	Total/NA	Solid	Total BTEX	
880-8306-23	S-5 5'	Total/NA	Solid	Total BTEX	
880-8306-24	S-5 10'	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 12230

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-8306-1	S-1 1'	Total/NA	Solid	8015B NM	12346
880-8306-2	S-1 3'	Total/NA	Solid	8015B NM	12346
880-8306-3	S-1 5'	Total/NA	Solid	8015B NM	12346
880-8306-4	S-1 10'	Total/NA	Solid	8015B NM	12346
880-8306-5	S-10 1'	Total/NA	Solid	8015B NM	12346
880-8306-6	S-10 3'	Total/NA	Solid	8015B NM	12346
880-8306-7	S-10 5'	Total/NA	Solid	8015B NM	12346
880-8306-8	S-10 10'	Total/NA	Solid	8015B NM	12346
880-8306-9	S-2 1'	Total/NA	Solid	8015B NM	12346
880-8306-10	S-2 3'	Total/NA	Solid	8015B NM	12346
880-8306-11	S-2 5'	Total/NA	Solid	8015B NM	12346
880-8306-12	S-2 10"	Total/NA	Solid	8015B NM	12346
880-8306-13	S-3 1'	Total/NA	Solid	8015B NM	12346
880-8306-14	S-3 3'	Total/NA	Solid	8015B NM	12346
880-8306-15	S-3 5'	Total/NA	Solid	8015B NM	12346
880-8306-16	S-3 10'	Total/NA	Solid	8015B NM	12346
880-8306-17	S-4 1'	Total/NA	Solid	8015B NM	12346
880-8306-18	S-4 3'	Total/NA	Solid	8015B NM	12346
880-8306-19	S-4 5'	Total/NA	Solid	8015B NM	12346
880-8306-20	S-4 10'	Total/NA	Solid	8015B NM	12346
MB 880-12346/1-A	Method Blank	Total/NA	Solid	8015B NM	12346
LCS 880-12346/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	12346
LCSD 880-12346/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	12346
880-8306-1 MS	S-1 1'	Total/NA	Solid	8015B NM	12346
880-8306-1 MSD	S-1 1'	Total/NA	Solid	8015B NM	12346

Analysis Batch: 12232

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-8306-21	S-5 1'	Total/NA	Solid	8015B NM	12340
880-8306-22	S-5 3'	Total/NA	Solid	8015B NM	12340
880-8306-23	S-5 5'	Total/NA	Solid	8015B NM	12340
880-8306-24	S-5 10'	Total/NA	Solid	8015B NM	12340
MB 880-12340/1-A	Method Blank	Total/NA	Solid	8015B NM	12340
LCS 880-12340/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	12340
LCSD 880-12340/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	12340
890-1551-A-2-C MS	Matrix Spike	Total/NA	Solid	8015B NM	12340
890-1551-A-2-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	12340

Prep Batch: 12340

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-8306-21	S-5 1'	Total/NA	Solid	8015NM Prep	
880-8306-22	S-5 3'	Total/NA	Solid	8015NM Prep	

Eurofins Xenco, Midland

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: SD Frac 13 SWD

Job ID: 880-8306-1
SDG: 21-0100-20

GC Semi VOA (Continued)

Prep Batch: 12340 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-8306-23	S-5 5'	Total/NA	Solid	8015NM Prep	
880-8306-24	S-5 10'	Total/NA	Solid	8015NM Prep	
MB 880-12340/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-12340/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-12340/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-1551-A-2-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-1551-A-2-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Prep Batch: 12346

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-8306-1	S-1 1'	Total/NA	Solid	8015NM Prep	
880-8306-2	S-1 3'	Total/NA	Solid	8015NM Prep	
880-8306-3	S-1 5'	Total/NA	Solid	8015NM Prep	
880-8306-4	S-1 10'	Total/NA	Solid	8015NM Prep	
880-8306-5	S-10 1'	Total/NA	Solid	8015NM Prep	
880-8306-6	S-10 3'	Total/NA	Solid	8015NM Prep	
880-8306-7	S-10 5'	Total/NA	Solid	8015NM Prep	
880-8306-8	S-10 10'	Total/NA	Solid	8015NM Prep	
880-8306-9	S-2 1'	Total/NA	Solid	8015NM Prep	
880-8306-10	S-2 3'	Total/NA	Solid	8015NM Prep	
880-8306-11	S-2 5'	Total/NA	Solid	8015NM Prep	
880-8306-12	S-2 10"	Total/NA	Solid	8015NM Prep	
880-8306-13	S-3 1'	Total/NA	Solid	8015NM Prep	
880-8306-14	S-3 3'	Total/NA	Solid	8015NM Prep	
880-8306-15	S-3 5'	Total/NA	Solid	8015NM Prep	
880-8306-16	S-3 10'	Total/NA	Solid	8015NM Prep	
880-8306-17	S-4 1'	Total/NA	Solid	8015NM Prep	
880-8306-18	S-4 3'	Total/NA	Solid	8015NM Prep	
880-8306-19	S-4 5'	Total/NA	Solid	8015NM Prep	
880-8306-20	S-4 10'	Total/NA	Solid	8015NM Prep	
MB 880-12346/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-12346/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-12346/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-8306-1 MS	S-1 1'	Total/NA	Solid	8015NM Prep	
880-8306-1 MSD	S-1 1'	Total/NA	Solid	8015NM Prep	

Analysis Batch: 12421

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-8306-1	S-1 1'	Total/NA	Solid	8015 NM	
880-8306-2	S-1 3'	Total/NA	Solid	8015 NM	
880-8306-3	S-1 5'	Total/NA	Solid	8015 NM	
880-8306-4	S-1 10'	Total/NA	Solid	8015 NM	
880-8306-5	S-10 1'	Total/NA	Solid	8015 NM	
880-8306-6	S-10 3'	Total/NA	Solid	8015 NM	
880-8306-7	S-10 5'	Total/NA	Solid	8015 NM	
880-8306-8	S-10 10'	Total/NA	Solid	8015 NM	
880-8306-9	S-2 1'	Total/NA	Solid	8015 NM	
880-8306-10	S-2 3'	Total/NA	Solid	8015 NM	
880-8306-11	S-2 5'	Total/NA	Solid	8015 NM	
880-8306-12	S-2 10"	Total/NA	Solid	8015 NM	
880-8306-13	S-3 1'	Total/NA	Solid	8015 NM	

Eurofins Xenco, Midland

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: SD Frac 13 SWD

Job ID: 880-8306-1
SDG: 21-0100-20

GC Semi VOA (Continued)

Analysis Batch: 12421 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-8306-14	S-3 3'	Total/NA	Solid	8015 NM	
880-8306-15	S-3 5'	Total/NA	Solid	8015 NM	
880-8306-16	S-3 10'	Total/NA	Solid	8015 NM	
880-8306-17	S-4 1'	Total/NA	Solid	8015 NM	
880-8306-18	S-4 3'	Total/NA	Solid	8015 NM	
880-8306-19	S-4 5'	Total/NA	Solid	8015 NM	
880-8306-20	S-4 10'	Total/NA	Solid	8015 NM	

Analysis Batch: 12448

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-8306-21	S-5 1'	Total/NA	Solid	8015 NM	
880-8306-22	S-5 3'	Total/NA	Solid	8015 NM	
880-8306-23	S-5 5'	Total/NA	Solid	8015 NM	
880-8306-24	S-5 10'	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 12493

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-8306-9	S-2 1'	Soluble	Solid	DI Leach	
880-8306-10	S-2 3'	Soluble	Solid	DI Leach	
880-8306-11	S-2 5'	Soluble	Solid	DI Leach	
880-8306-12	S-2 10"	Soluble	Solid	DI Leach	
880-8306-13	S-3 1'	Soluble	Solid	DI Leach	
880-8306-14	S-3 3'	Soluble	Solid	DI Leach	
880-8306-15	S-3 5'	Soluble	Solid	DI Leach	
880-8306-16	S-3 10'	Soluble	Solid	DI Leach	
880-8306-17	S-4 1'	Soluble	Solid	DI Leach	
880-8306-18	S-4 3'	Soluble	Solid	DI Leach	
880-8306-19	S-4 5'	Soluble	Solid	DI Leach	
880-8306-20	S-4 10'	Soluble	Solid	DI Leach	
880-8306-21	S-5 1'	Soluble	Solid	DI Leach	
880-8306-22	S-5 3'	Soluble	Solid	DI Leach	
880-8306-23	S-5 5'	Soluble	Solid	DI Leach	
880-8306-24	S-5 10'	Soluble	Solid	DI Leach	
MB 880-12493/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-12493/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-12493/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-8306-9 MS	S-2 1'	Soluble	Solid	DI Leach	
880-8306-9 MSD	S-2 1'	Soluble	Solid	DI Leach	
880-8306-19 MS	S-4 5'	Soluble	Solid	DI Leach	
880-8306-19 MSD	S-4 5'	Soluble	Solid	DI Leach	

Leach Batch: 12495

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-8306-1	S-1 1'	Soluble	Solid	DI Leach	
880-8306-2	S-1 3'	Soluble	Solid	DI Leach	
880-8306-3	S-1 5'	Soluble	Solid	DI Leach	
880-8306-4	S-1 10'	Soluble	Solid	DI Leach	
880-8306-5	S-10 1'	Soluble	Solid	DI Leach	
880-8306-6	S-10 3'	Soluble	Solid	DI Leach	

Eurofins Xenco, Midland

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: SD Frac 13 SWD

Job ID: 880-8306-1
SDG: 21-0100-20

HPLC/IC (Continued)

Leach Batch: 12495 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-8306-7	S-10 5'	Soluble	Solid	DI Leach	
880-8306-8	S-10 10'	Soluble	Solid	DI Leach	
MB 880-12495/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-12495/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-12495/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-8306-1 MS	S-1 1'	Soluble	Solid	DI Leach	
880-8306-1 MSD	S-1 1'	Soluble	Solid	DI Leach	

Analysis Batch: 12846

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-8306-9	S-2 1'	Soluble	Solid	300.0	12493
880-8306-10	S-2 3'	Soluble	Solid	300.0	12493
880-8306-11	S-2 5'	Soluble	Solid	300.0	12493
880-8306-12	S-2 10"	Soluble	Solid	300.0	12493
880-8306-13	S-3 1'	Soluble	Solid	300.0	12493
880-8306-14	S-3 3'	Soluble	Solid	300.0	12493
880-8306-15	S-3 5'	Soluble	Solid	300.0	12493
880-8306-16	S-3 10'	Soluble	Solid	300.0	12493
880-8306-17	S-4 1'	Soluble	Solid	300.0	12493
880-8306-18	S-4 3'	Soluble	Solid	300.0	12493
880-8306-19	S-4 5'	Soluble	Solid	300.0	12493
880-8306-20	S-4 10'	Soluble	Solid	300.0	12493
880-8306-21	S-5 1'	Soluble	Solid	300.0	12493
880-8306-22	S-5 3'	Soluble	Solid	300.0	12493
880-8306-23	S-5 5'	Soluble	Solid	300.0	12493
880-8306-24	S-5 10'	Soluble	Solid	300.0	12493
MB 880-12493/1-A	Method Blank	Soluble	Solid	300.0	12493
LCS 880-12493/2-A	Lab Control Sample	Soluble	Solid	300.0	12493
LCSD 880-12493/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	12493
880-8306-9 MS	S-2 1'	Soluble	Solid	300.0	12493
880-8306-9 MSD	S-2 1'	Soluble	Solid	300.0	12493
880-8306-19 MS	S-4 5'	Soluble	Solid	300.0	12493
880-8306-19 MSD	S-4 5'	Soluble	Solid	300.0	12493

Analysis Batch: 12947

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-8306-1	S-1 1'	Soluble	Solid	300.0	12495
880-8306-2	S-1 3'	Soluble	Solid	300.0	12495
880-8306-3	S-1 5'	Soluble	Solid	300.0	12495
880-8306-4	S-1 10'	Soluble	Solid	300.0	12495
880-8306-5	S-10 1'	Soluble	Solid	300.0	12495
880-8306-6	S-10 3'	Soluble	Solid	300.0	12495
880-8306-7	S-10 5'	Soluble	Solid	300.0	12495
880-8306-8	S-10 10'	Soluble	Solid	300.0	12495
MB 880-12495/1-A	Method Blank	Soluble	Solid	300.0	12495
LCS 880-12495/2-A	Lab Control Sample	Soluble	Solid	300.0	12495
LCSD 880-12495/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	12495
880-8306-1 MS	S-1 1'	Soluble	Solid	300.0	12495
880-8306-1 MSD	S-1 1'	Soluble	Solid	300.0	12495

Eurofins Xenco, Midland

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: SD Frac 13 SWD

Job ID: 880-8306-1
SDG: 21-0100-20

Client Sample ID: S-1 1'

Lab Sample ID: 880-8306-1

Date Collected: 11/11/21 13:17

Matrix: Solid

Date Received: 11/15/21 11:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	12347	11/15/21 15:37	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12498	11/17/21 12:50	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			12685	11/18/21 15:58	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			12421	11/16/21 08:57	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	12346	11/15/21 15:16	DM	XEN MID
Total/NA	Analysis	8015B NM		1			12230	11/15/21 16:34	AJ	XEN MID
Soluble	Leach	DI Leach			5.05 g	50 mL	12495	11/17/21 08:08	CA	XEN MID
Soluble	Analysis	300.0		5			12947	11/22/21 11:15	CH	XEN MID

Client Sample ID: S-1 3'

Lab Sample ID: 880-8306-2

Date Collected: 11/11/21 13:18

Matrix: Solid

Date Received: 11/15/21 11:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	12347	11/15/21 15:37	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12498	11/17/21 13:11	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			12685	11/18/21 15:58	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			12421	11/16/21 08:57	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	12346	11/15/21 15:16	DM	XEN MID
Total/NA	Analysis	8015B NM		1			12230	11/15/21 17:41	AJ	XEN MID
Soluble	Leach	DI Leach			4.96 g	50 mL	12495	11/17/21 08:08	CA	XEN MID
Soluble	Analysis	300.0		5			12947	11/22/21 11:37	CH	XEN MID

Client Sample ID: S-1 5'

Lab Sample ID: 880-8306-3

Date Collected: 11/11/21 13:19

Matrix: Solid

Date Received: 11/15/21 11:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	12347	11/15/21 15:37	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12498	11/17/21 13:32	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			12685	11/18/21 15:58	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			12421	11/16/21 08:57	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	12346	11/15/21 15:16	DM	XEN MID
Total/NA	Analysis	8015B NM		1			12230	11/15/21 18:03	AJ	XEN MID
Soluble	Leach	DI Leach			4.99 g	50 mL	12495	11/17/21 08:08	CA	XEN MID
Soluble	Analysis	300.0		1			12947	11/22/21 11:45	CH	XEN MID

Client Sample ID: S-1 10'

Lab Sample ID: 880-8306-4

Date Collected: 11/11/21 13:20

Matrix: Solid

Date Received: 11/15/21 11:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	12347	11/15/21 15:37	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12498	11/17/21 13:52	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			12685	11/18/21 15:58	AJ	XEN MID

Eurofins Xenco, Midland

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: SD Frac 13 SWD

Job ID: 880-8306-1
SDG: 21-0100-20

Client Sample ID: S-1 10'

Lab Sample ID: 880-8306-4

Date Collected: 11/11/21 13:20

Matrix: Solid

Date Received: 11/15/21 11:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			12421	11/16/21 08:57	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	12346	11/15/21 15:16	DM	XEN MID
Total/NA	Analysis	8015B NM		1			12230	11/15/21 18:25	AJ	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	12495	11/17/21 08:08	CA	XEN MID
Soluble	Analysis	300.0		1			12947	11/22/21 12:07	CH	XEN MID

Client Sample ID: S-10 1'

Lab Sample ID: 880-8306-5

Date Collected: 11/11/21 13:40

Matrix: Solid

Date Received: 11/15/21 11:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	12347	11/15/21 15:37	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12498	11/17/21 14:13	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			12685	11/18/21 15:58	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			12421	11/16/21 08:57	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	12346	11/15/21 15:16	DM	XEN MID
Total/NA	Analysis	8015B NM		1			12230	11/15/21 18:47	AJ	XEN MID
Soluble	Leach	DI Leach			4.97 g	50 mL	12495	11/17/21 08:08	CA	XEN MID
Soluble	Analysis	300.0		1			12947	11/22/21 12:14	CH	XEN MID

Client Sample ID: S-10 3'

Lab Sample ID: 880-8306-6

Date Collected: 11/11/21 13:41

Matrix: Solid

Date Received: 11/15/21 11:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	12347	11/15/21 15:37	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12498	11/17/21 14:34	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			12685	11/18/21 15:58	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			12421	11/16/21 08:57	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.06 g	10 mL	12346	11/15/21 15:16	DM	XEN MID
Total/NA	Analysis	8015B NM		1			12230	11/15/21 19:09	AJ	XEN MID
Soluble	Leach	DI Leach			4.99 g	50 mL	12495	11/17/21 08:08	CA	XEN MID
Soluble	Analysis	300.0		1			12947	11/22/21 12:21	CH	XEN MID

Client Sample ID: S-10 5'

Lab Sample ID: 880-8306-7

Date Collected: 11/11/21 13:42

Matrix: Solid

Date Received: 11/15/21 11:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.04 g	5 mL	12347	11/15/21 15:37	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12498	11/17/21 14:54	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			12685	11/18/21 15:58	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			12421	11/16/21 08:57	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	12346	11/15/21 15:16	DM	XEN MID
Total/NA	Analysis	8015B NM		1			12230	11/15/21 19:31	AJ	XEN MID

Eurofins Xenco, Midland

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: SD Frac 13 SWD

Job ID: 880-8306-1
SDG: 21-0100-20

Client Sample ID: S-10 5'

Lab Sample ID: 880-8306-7

Date Collected: 11/11/21 13:42

Matrix: Solid

Date Received: 11/15/21 11:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.03 g	50 mL	12495	11/17/21 08:08	CA	XEN MID
Soluble	Analysis	300.0		1			12947	11/22/21 12:29	CH	XEN MID

Client Sample ID: S-10 10'

Lab Sample ID: 880-8306-8

Date Collected: 11/11/21 13:43

Matrix: Solid

Date Received: 11/15/21 11:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	12347	11/15/21 15:37	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12498	11/17/21 15:15	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			12685	11/18/21 15:58	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			12421	11/16/21 08:57	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	12346	11/15/21 15:16	DM	XEN MID
Total/NA	Analysis	8015B NM		1			12230	11/15/21 19:53	AJ	XEN MID
Soluble	Leach	DI Leach			4.98 g	50 mL	12495	11/17/21 08:08	CA	XEN MID
Soluble	Analysis	300.0		1			12947	11/22/21 12:36	CH	XEN MID

Client Sample ID: S-2 1'

Lab Sample ID: 880-8306-9

Date Collected: 11/11/21 13:56

Matrix: Solid

Date Received: 11/15/21 11:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	12347	11/15/21 15:37	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12498	11/17/21 15:36	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			12685	11/18/21 15:58	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			12421	11/16/21 08:57	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	12346	11/15/21 15:16	DM	XEN MID
Total/NA	Analysis	8015B NM		1			12230	11/15/21 20:15	AJ	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	12493	11/17/21 07:57	CA	XEN MID
Soluble	Analysis	300.0		5			12846	11/20/21 20:37	CH	XEN MID

Client Sample ID: S-2 3'

Lab Sample ID: 880-8306-10

Date Collected: 11/11/21 13:57

Matrix: Solid

Date Received: 11/15/21 11:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	12347	11/15/21 15:37	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12498	11/17/21 15:56	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			12685	11/18/21 15:58	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			12421	11/16/21 08:57	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	12346	11/15/21 15:16	DM	XEN MID
Total/NA	Analysis	8015B NM		1			12230	11/15/21 20:36	AJ	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	12493	11/17/21 07:57	CA	XEN MID
Soluble	Analysis	300.0		1			12846	11/20/21 20:52	CH	XEN MID

Eurofins Xenco, Midland

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: SD Frac 13 SWD

Job ID: 880-8306-1
SDG: 21-0100-20

Client Sample ID: S-2 5'

Lab Sample ID: 880-8306-11

Date Collected: 11/11/21 13:58

Matrix: Solid

Date Received: 11/15/21 11:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	12347	11/15/21 15:37	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12498	11/17/21 17:21	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			12685	11/18/21 15:58	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			12421	11/16/21 08:57	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	12346	11/15/21 15:16	DM	XEN MID
Total/NA	Analysis	8015B NM		1			12230	11/15/21 21:20	AJ	XEN MID
Soluble	Leach	DI Leach			5.02 g	50 mL	12493	11/17/21 07:57	CA	XEN MID
Soluble	Analysis	300.0		1			12846	11/20/21 20:57	CH	XEN MID

Client Sample ID: S-2 10"

Lab Sample ID: 880-8306-12

Date Collected: 11/11/21 13:59

Matrix: Solid

Date Received: 11/15/21 11:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	12347	11/15/21 15:37	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12498	11/17/21 17:41	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			12685	11/18/21 15:58	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			12421	11/16/21 08:57	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	12346	11/15/21 15:16	DM	XEN MID
Total/NA	Analysis	8015B NM		1			12230	11/15/21 21:41	AJ	XEN MID
Soluble	Leach	DI Leach			5.05 g	50 mL	12493	11/17/21 07:57	CA	XEN MID
Soluble	Analysis	300.0		1			12846	11/20/21 21:02	CH	XEN MID

Client Sample ID: S-3 1'

Lab Sample ID: 880-8306-13

Date Collected: 11/11/21 14:12

Matrix: Solid

Date Received: 11/15/21 11:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	12347	11/15/21 15:37	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12498	11/17/21 18:02	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			12685	11/18/21 15:58	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			12421	11/16/21 08:57	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	12346	11/15/21 15:16	DM	XEN MID
Total/NA	Analysis	8015B NM		1			12230	11/15/21 22:03	AJ	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	12493	11/17/21 07:57	CA	XEN MID
Soluble	Analysis	300.0		1			12846	11/20/21 21:07	CH	XEN MID

Client Sample ID: S-3 3'

Lab Sample ID: 880-8306-14

Date Collected: 11/11/21 14:13

Matrix: Solid

Date Received: 11/15/21 11:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	12347	11/15/21 15:37	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12498	11/17/21 18:23	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			12685	11/18/21 15:58	AJ	XEN MID

Eurofins Xenco, Midland

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: SD Frac 13 SWD

Job ID: 880-8306-1
SDG: 21-0100-20

Client Sample ID: S-3 3'

Lab Sample ID: 880-8306-14

Date Collected: 11/11/21 14:13

Matrix: Solid

Date Received: 11/15/21 11:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			12421	11/16/21 08:57	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	12346	11/15/21 15:16	DM	XEN MID
Total/NA	Analysis	8015B NM		1			12230	11/15/21 22:25	AJ	XEN MID
Soluble	Leach	DI Leach			4.96 g	50 mL	12493	11/17/21 07:57	CA	XEN MID
Soluble	Analysis	300.0		1			12846	11/21/21 14:55	CH	XEN MID

Client Sample ID: S-3 5'

Lab Sample ID: 880-8306-15

Date Collected: 11/11/21 14:14

Matrix: Solid

Date Received: 11/15/21 11:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	12347	11/15/21 15:37	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12498	11/17/21 18:43	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			12685	11/18/21 15:58	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			12421	11/16/21 08:57	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	12346	11/15/21 15:16	DM	XEN MID
Total/NA	Analysis	8015B NM		1			12230	11/15/21 22:46	AJ	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	12493	11/17/21 07:57	CA	XEN MID
Soluble	Analysis	300.0		1			12846	11/21/21 15:00	CH	XEN MID

Client Sample ID: S-3 10'

Lab Sample ID: 880-8306-16

Date Collected: 11/11/21 14:15

Matrix: Solid

Date Received: 11/15/21 11:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	12347	11/15/21 15:37	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12498	11/17/21 19:04	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			12685	11/18/21 15:58	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			12421	11/16/21 08:57	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	12346	11/15/21 15:16	DM	XEN MID
Total/NA	Analysis	8015B NM		1			12230	11/15/21 23:08	AJ	XEN MID
Soluble	Leach	DI Leach			5.05 g	50 mL	12493	11/17/21 07:57	CA	XEN MID
Soluble	Analysis	300.0		1			12846	11/21/21 15:05	CH	XEN MID

Client Sample ID: S-4 1'

Lab Sample ID: 880-8306-17

Date Collected: 11/11/21 14:26

Matrix: Solid

Date Received: 11/15/21 11:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	12347	11/15/21 15:37	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12498	11/17/21 19:25	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			12685	11/18/21 15:58	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			12421	11/16/21 08:57	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	12346	11/15/21 15:16	DM	XEN MID
Total/NA	Analysis	8015B NM		1			12230	11/15/21 23:29	AJ	XEN MID

Eurofins Xenco, Midland

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: SD Frac 13 SWD

Job ID: 880-8306-1
SDG: 21-0100-20

Client Sample ID: S-4 1'

Lab Sample ID: 880-8306-17

Date Collected: 11/11/21 14:26

Matrix: Solid

Date Received: 11/15/21 11:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.03 g	50 mL	12493	11/17/21 07:57	CA	XEN MID
Soluble	Analysis	300.0		1			12846	11/21/21 15:10	CH	XEN MID

Client Sample ID: S-4 3'

Lab Sample ID: 880-8306-18

Date Collected: 11/11/21 14:27

Matrix: Solid

Date Received: 11/15/21 11:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	12347	11/15/21 15:37	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12498	11/17/21 19:45	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			12685	11/18/21 15:58	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			12421	11/16/21 08:57	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	12346	11/15/21 15:16	DM	XEN MID
Total/NA	Analysis	8015B NM		1			12230	11/15/21 23:50	AJ	XEN MID
Soluble	Leach	DI Leach			5.02 g	50 mL	12493	11/17/21 07:57	CA	XEN MID
Soluble	Analysis	300.0		1			12846	11/21/21 15:15	CH	XEN MID

Client Sample ID: S-4 5'

Lab Sample ID: 880-8306-19

Date Collected: 11/11/21 14:28

Matrix: Solid

Date Received: 11/15/21 11:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	12347	11/15/21 15:37	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12498	11/17/21 20:06	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			12685	11/18/21 15:58	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			12421	11/16/21 08:57	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	12346	11/15/21 15:16	DM	XEN MID
Total/NA	Analysis	8015B NM		1			12230	11/16/21 00:12	AJ	XEN MID
Soluble	Leach	DI Leach			5.05 g	50 mL	12493	11/17/21 07:57	CA	XEN MID
Soluble	Analysis	300.0		1			12846	11/21/21 15:20	CH	XEN MID

Client Sample ID: S-4 10'

Lab Sample ID: 880-8306-20

Date Collected: 11/11/21 14:29

Matrix: Solid

Date Received: 11/15/21 11:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.04 g	5 mL	12347	11/15/21 15:37	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12498	11/17/21 20:27	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			12685	11/18/21 15:58	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			12421	11/16/21 08:57	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	12346	11/15/21 15:16	DM	XEN MID
Total/NA	Analysis	8015B NM		1			12230	11/16/21 00:33	AJ	XEN MID
Soluble	Leach	DI Leach			4.96 g	50 mL	12493	11/17/21 07:57	CA	XEN MID
Soluble	Analysis	300.0		1			12846	11/21/21 15:35	CH	XEN MID

Eurofins Xenco, Midland

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: SD Frac 13 SWD

Job ID: 880-8306-1
SDG: 21-0100-20

Client Sample ID: S-5 1'

Lab Sample ID: 880-8306-21

Date Collected: 11/11/21 14:40

Matrix: Solid

Date Received: 11/15/21 11:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	12436	11/17/21 10:11	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12499	11/17/21 16:03	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			12945	11/22/21 13:36	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			12448	11/16/21 13:46	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.06 g	10 mL	12340	11/15/21 14:49	DM	XEN MID
Total/NA	Analysis	8015B NM		1			12232	11/15/21 19:09	AJ	XEN MID
Soluble	Leach	DI Leach			4.99 g	50 mL	12493	11/17/21 07:57	CA	XEN MID
Soluble	Analysis	300.0		1			12846	11/21/21 15:40	CH	XEN MID

Client Sample ID: S-5 3'

Lab Sample ID: 880-8306-22

Date Collected: 11/11/21 14:41

Matrix: Solid

Date Received: 11/15/21 11:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.04 g	5 mL	12436	11/17/21 10:11	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12499	11/17/21 16:24	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			12945	11/22/21 13:36	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			12448	11/16/21 13:46	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	12340	11/15/21 14:49	DM	XEN MID
Total/NA	Analysis	8015B NM		1			12232	11/15/21 19:31	AJ	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	12493	11/17/21 07:57	CA	XEN MID
Soluble	Analysis	300.0		1			12846	11/21/21 15:54	CH	XEN MID

Client Sample ID: S-5 5'

Lab Sample ID: 880-8306-23

Date Collected: 11/11/21 14:42

Matrix: Solid

Date Received: 11/15/21 11:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	12436	11/17/21 10:11	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12499	11/17/21 16:44	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			12945	11/22/21 13:36	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			12448	11/16/21 13:46	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	12340	11/15/21 14:49	DM	XEN MID
Total/NA	Analysis	8015B NM		1			12232	11/15/21 19:53	AJ	XEN MID
Soluble	Leach	DI Leach			4.97 g	50 mL	12493	11/17/21 07:57	CA	XEN MID
Soluble	Analysis	300.0		1			12846	11/21/21 15:59	CH	XEN MID

Client Sample ID: S-5 10'

Lab Sample ID: 880-8306-24

Date Collected: 11/11/21 14:43

Matrix: Solid

Date Received: 11/15/21 11:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	12436	11/17/21 10:11	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12499	11/17/21 18:54	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			12945	11/22/21 13:36	AJ	XEN MID

Eurofins Xenco, Midland

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: SD Frac 13 SWD

Job ID: 880-8306-1
SDG: 21-0100-20

Client Sample ID: S-5 10'
Date Collected: 11/11/21 14:43
Date Received: 11/15/21 11:07

Lab Sample ID: 880-8306-24
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			12448	11/16/21 13:46	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	12340	11/15/21 14:49	DM	XEN MID
Total/NA	Analysis	8015B NM		1			12232	11/15/21 20:15	AJ	XEN MID
Soluble	Leach	DI Leach			4.99 g	50 mL	12493	11/17/21 07:57	CA	XEN MID
Soluble	Analysis	300.0		1			12846	11/21/21 16:04	CH	XEN MID

Laboratory References:
XEN MID = Eurofins Xenco, Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: Larson & Associates, Inc.
Project/Site: SD Frac 13 SWD

Job ID: 880-8306-1
SDG: 21-0100-20

Laboratory: Eurofins Xenco, Midland

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-21-22	06-30-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Method Summary

Client: Larson & Associates, Inc.
Project/Site: SD Frac 13 SWD

Job ID: 880-8306-1
SDG: 21-0100-20

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	XEN MID
Total BTEX	Total BTEX Calculation	TAL SOP	XEN MID
8015 NM	Diesel Range Organics (DRO) (GC)	SW846	XEN MID
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	XEN MID
300.0	Anions, Ion Chromatography	MCAWW	XEN MID
5035	Closed System Purge and Trap	SW846	XEN MID
8015NM Prep	Microextraction	SW846	XEN MID
DI Leach	Deionized Water Leaching Procedure	ASTM	XEN MID

Protocol References:

ASTM = ASTM International

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

XEN MID = Eurofins Xenco, Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Eurofins Xenco, Midland

Sample Summary

Client: Larson & Associates, Inc.
Project/Site: SD Frac 13 SWD

Job ID: 880-8306-1
SDG: 21-0100-20

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-8306-1	S-1 1'	Solid	11/11/21 13:17	11/15/21 11:07
880-8306-2	S-1 3'	Solid	11/11/21 13:18	11/15/21 11:07
880-8306-3	S-1 5'	Solid	11/11/21 13:19	11/15/21 11:07
880-8306-4	S-1 10'	Solid	11/11/21 13:20	11/15/21 11:07
880-8306-5	S-10 1'	Solid	11/11/21 13:40	11/15/21 11:07
880-8306-6	S-10 3'	Solid	11/11/21 13:41	11/15/21 11:07
880-8306-7	S-10 5'	Solid	11/11/21 13:42	11/15/21 11:07
880-8306-8	S-10 10'	Solid	11/11/21 13:43	11/15/21 11:07
880-8306-9	S-2 1'	Solid	11/11/21 13:56	11/15/21 11:07
880-8306-10	S-2 3'	Solid	11/11/21 13:57	11/15/21 11:07
880-8306-11	S-2 5'	Solid	11/11/21 13:58	11/15/21 11:07
880-8306-12	S-2 10"	Solid	11/11/21 13:59	11/15/21 11:07
880-8306-13	S-3 1'	Solid	11/11/21 14:12	11/15/21 11:07
880-8306-14	S-3 3'	Solid	11/11/21 14:13	11/15/21 11:07
880-8306-15	S-3 5'	Solid	11/11/21 14:14	11/15/21 11:07
880-8306-16	S-3 10'	Solid	11/11/21 14:15	11/15/21 11:07
880-8306-17	S-4 1'	Solid	11/11/21 14:26	11/15/21 11:07
880-8306-18	S-4 3'	Solid	11/11/21 14:27	11/15/21 11:07
880-8306-19	S-4 5'	Solid	11/11/21 14:28	11/15/21 11:07
880-8306-20	S-4 10'	Solid	11/11/21 14:29	11/15/21 11:07
880-8306-21	S-5 1'	Solid	11/11/21 14:40	11/15/21 11:07
880-8306-22	S-5 3'	Solid	11/11/21 14:41	11/15/21 11:07
880-8306-23	S-5 5'	Solid	11/11/21 14:42	11/15/21 11:07
880-8306-24	S-5 10'	Solid	11/11/21 14:43	11/15/21 11:07

Varson & Associates, Inc.
Environmental Consultants

880-8306 Chain of Custody

Midland TX 79701
432-687 0901

Data Reported to



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83004

No. 2172
CHAIN-OF-CUSTODY

DATE 11-11-21

PAGE 1 OF 2

PO# _____ LAB WORK ORDER# _____

PROJECT LOCATION OR NAME SD Frg 13 SW

LAI PROJECT # 21-0100-20 COLLECTOR TP4 MB

TRRP report? ☐ Yes ☒ No
TIME ZONE
Time zone/State

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

PRESERVATION

HCl
HNO₃
H₂SO₄ ☐ NaOH ☐
ICE
UNPRESERVED

ANALYSES

BTEX ☒ MTBE ☒
TPH 418.1 ☒ TPH 1005 ☒ TPH 1006 ☒
GASOLINE MOD 8015 ☒
DIESEL - MOD 8015 ☒
OIL - MOD 8015 ☒
VOC 8260 ☒
SVOC 8270 ☒ PAH 8270 ☒ HOLDRAH ☒
8081 PESTICIDES ☒ 8151 HERBICIDES ☒
TCIP - METALS (RCRA) ☒ TCIP-VOC ☒
TCIP - PEST ☒ HERB ☒ Semi-VOC ☒
TOTAL METALS (RCRA) ☒ OTHER MET ☒
LEAD - TOTAL ☒ DW 2008 ☒ TCIP ☒
RCL ☒ TOX ☒ FLASHPOINT ☒
TDS ☒ TSS ☒ % MOISTURE ☒ CYANIDE ☒
PH ☒ HEXAVALENT CHROMIUM ☒
EXPLOSIVES ☒ PECHLORATE ☒
CHLORIDE ☒ ANIONS ☒ ALKALINITY ☒

FIELD NOTES

Field Sample ID

Lab #

Date

Time

Matrix

of Containers

HCl

HNO₃H₂SO₄ ☐ NaOH ☐

ICE

UNPRESERVED

ANALYSES

BTEX ☒ MTBE ☒TPH 418.1 ☒ TPH 1005 ☒ TPH 1006 ☒GASOLINE MOD 8015 ☒DIESEL - MOD 8015 ☒OIL - MOD 8015 ☒VOC 8260 ☒SVOC 8270 ☒PAH 8270 ☒HOLDRAH ☒8081 PESTICIDES ☒8151 HERBICIDES ☒TCIP - METALS (RCRA) ☒TCIP-VOC ☒TCIP - PEST ☒HERB ☒Semi-VOC ☒TOTAL METALS (RCRA) ☒OTHER MET ☒LEAD - TOTAL ☒DW 2008 ☒TCIP ☒RCL ☒TOX ☒FLASHPOINT ☒TDS ☒TSS ☒% MOISTURE ☒CYANIDE ☒PH ☒HEXAVALENT CHROMIUM ☒EXPLOSIVES ☒PECHLORATE ☒CHLORIDE ☒ANIONS ☒ALKALINITY ☒

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Marson & Associates, Inc.
Environmental Consultants

507 N Mainfield Ste 202
Midland TX 79701
432 687-0901

Data Reported to

DATE 11/11/21 PO# LAB WORK ORDER# PAGE 2 OF 2
PROJECT LOCATION OR NAME 5D Frae 13 SWP
LAI PROJECT # 21-0100-20 COLLECTOR TP + MB

8324

CHAIN-OF-CUSTODY

No. 2173

Field Sample ID	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION				ANALYSES		FIELD NOTES
						HCl	HNO ₃	H ₂ SO ₄ ☐ NaOH ☐	ICE	UNPRESERVED		
S-3 10'		11/11/21	1415	S	1				X		X	
S-4 1'			1426								X	
S-4 3'			1427								X	
S-4 5'			1428								X	
S-4 10'			1429								X	
S-5 1'			1440								X	
S-5 3'			1441								X	
S-5 5'			1442								X	
S-5 10'			1443								X	
TOTAL 9												

RELINQUISHED BY (Signature) [Signature] DATE/TIME 11/15/21 11:07 RECEIVED BY (Signature) [Signature] DATE/TIME 11/15/21 11:07

RELINQUISHED BY (Signature) [Signature] DATE/TIME RECEIVED BY (Signature) [Signature] DATE/TIME

RELINQUISHED BY (Signature) [Signature] DATE/TIME RECEIVED BY (Signature) [Signature] DATE/TIME

LABORATORY Xenoco

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

LABORATORY USE ONLY:
RECEIVING TEMP 34/37 THERM# IEB
CUSTODY SEALS - ☐ BROKEN ☒ INTACT ☐ NOT USED
☒ CARRIER BILL #
☒ HAND DELIVERED

Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-8306-1

SDG Number: 21-0100-20

Login Number: 8306

List Number: 1

Creator: Teel, Brianna

List Source: Eurofins Xenco, Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	N/A	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	



Environment Testing America

ANALYTICAL REPORT

Eurofins Xenco, Midland
1211 W. Florida Ave
Midland, TX 79701
Tel: (432)704-5440

Laboratory Job ID: 880-8307-1
Laboratory Sample Delivery Group: 21-0100-20
Client Project/Site: SD 13 SWD

For:
Larson & Associates, Inc.
507 N Marienfeld
Suite 202
Midland, Texas 79701

Attn: Mr. Mark J Larson

Holly Taylor

Authorized for release by:
11/23/2021 10:52:42 AM

Holly Taylor, Project Manager
(806)794-1296
holly.taylor@eurofinset.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Laboratory Job ID: 880-8307-1
SDG: 21-0100-20

Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Client Sample Results	5
Surrogate Summary	16
QC Sample Results	18
QC Association Summary	24
Lab Chronicle	29
Certification Summary	34
Method Summary	35
Sample Summary	36
Chain of Custody	37
Receipt Checklists	38

1
2
3
4
5
6
7
8
9
10
11
12
13
14

Definitions/Glossary

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-8307-1
SDG: 21-0100-20

Qualifiers

GC VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-8307-1
SDG: 21-0100-20

Job ID: 880-8307-1**Laboratory: Eurofins Xenco, Midland****Narrative****Job Narrative
880-8307-1****Receipt**

The samples were received on 11/15/2021 11:07 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was -3.7°C

GC VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (MB 880-12340/1-A) and (890-1551-A-2-B). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: The laboratory control sample (LCS) associated with preparation batch 880-12411 and analytical batch 880-12396 was outside acceptance criteria. Re-extraction and/or re-analysis could not be performed; therefore, the data have been reported. The batch matrix spike/matrix spike duplicate (MS/MSD) was within acceptance limits and may be used to evaluate matrix performance.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC

Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-12491 and analytical batch 880-12845 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-12493 and analytical batch 880-12846 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-8307-1
SDG: 21-0100-20

Client Sample ID: S-6 1'

Lab Sample ID: 880-8307-1

Date Collected: 11/12/21 10:20

Matrix: Solid

Date Received: 11/15/21 11:07

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/16/21 15:46	11/17/21 14:10	1
Toluene	<0.00200	U	0.00200	mg/Kg		11/16/21 15:46	11/17/21 14:10	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/16/21 15:46	11/17/21 14:10	1
m,p-Xylenes	<0.00400	U	0.00400	mg/Kg		11/16/21 15:46	11/17/21 14:10	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/16/21 15:46	11/17/21 14:10	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		11/16/21 15:46	11/17/21 14:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	117		70 - 130	11/16/21 15:46	11/17/21 14:10	1
1,4-Difluorobenzene (Surr)	73		70 - 130	11/16/21 15:46	11/17/21 14:10	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/Kg			11/17/21 16:21	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			11/19/21 13:54	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		11/16/21 08:31	11/16/21 22:02	1
Diesel Range Organics (Over C10-C28)	<50.0	U *	50.0	mg/Kg		11/16/21 08:31	11/16/21 22:02	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		11/16/21 08:31	11/16/21 22:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane (Surr)	101		70 - 130	11/16/21 08:31	11/16/21 22:02	1
o-Terphenyl (Surr)	112		70 - 130	11/16/21 08:31	11/16/21 22:02	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	68.7		4.97	mg/Kg			11/21/21 16:09	1

Client Sample ID: S-6 3'

Lab Sample ID: 880-8307-2

Date Collected: 11/12/21 10:21

Matrix: Solid

Date Received: 11/15/21 11:07

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		11/16/21 15:46	11/17/21 14:30	1
Toluene	<0.00201	U	0.00201	mg/Kg		11/16/21 15:46	11/17/21 14:30	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		11/16/21 15:46	11/17/21 14:30	1
m,p-Xylenes	<0.00402	U	0.00402	mg/Kg		11/16/21 15:46	11/17/21 14:30	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		11/16/21 15:46	11/17/21 14:30	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		11/16/21 15:46	11/17/21 14:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	109		70 - 130	11/16/21 15:46	11/17/21 14:30	1
1,4-Difluorobenzene (Surr)	102		70 - 130	11/16/21 15:46	11/17/21 14:30	1

Eurofins Xenco, Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-8307-1
SDG: 21-0100-20

Client Sample ID: S-6 3'

Lab Sample ID: 880-8307-2

Date Collected: 11/12/21 10:21

Matrix: Solid

Date Received: 11/15/21 11:07

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			11/17/21 16:21	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			11/19/21 13:54	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		11/16/21 08:31	11/16/21 23:05	1
Diesel Range Organics (Over C10-C28)	<49.9	U *	49.9	mg/Kg		11/16/21 08:31	11/16/21 23:05	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		11/16/21 08:31	11/16/21 23:05	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane (Surr)	103		70 - 130			11/16/21 08:31	11/16/21 23:05	1
o-Terphenyl (Surr)	111		70 - 130			11/16/21 08:31	11/16/21 23:05	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2.44		0.0502	mg/Kg			11/21/21 16:14	1

Client Sample ID: S-6 5'

Lab Sample ID: 880-8307-3

Date Collected: 11/12/21 10:22

Matrix: Solid

Date Received: 11/15/21 11:07

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		11/16/21 15:46	11/17/21 14:51	1
Toluene	<0.00201	U	0.00201	mg/Kg		11/16/21 15:46	11/17/21 14:51	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		11/16/21 15:46	11/17/21 14:51	1
m,p-Xylenes	<0.00402	U	0.00402	mg/Kg		11/16/21 15:46	11/17/21 14:51	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		11/16/21 15:46	11/17/21 14:51	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		11/16/21 15:46	11/17/21 14:51	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	123		70 - 130			11/16/21 15:46	11/17/21 14:51	1
1,4-Difluorobenzene (Surr)	111		70 - 130			11/16/21 15:46	11/17/21 14:51	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			11/17/21 16:21	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8	mg/Kg			11/19/21 13:54	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8	mg/Kg		11/16/21 08:31	11/16/21 23:25	1
Diesel Range Organics (Over C10-C28)	<49.8	U *	49.8	mg/Kg		11/16/21 08:31	11/16/21 23:25	1

Eurofins Xenco, Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-8307-1
SDG: 21-0100-20

Client Sample ID: S-6 5'

Lab Sample ID: 880-8307-3

Date Collected: 11/12/21 10:22

Matrix: Solid

Date Received: 11/15/21 11:07

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Oil Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		11/16/21 08:31	11/16/21 23:25	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane (Surr)	92		70 - 130			11/16/21 08:31	11/16/21 23:25	1
o-Terphenyl (Surr)	98		70 - 130			11/16/21 08:31	11/16/21 23:25	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	237		4.99	mg/Kg			11/21/21 16:19	1

Client Sample ID: S-6 10'

Lab Sample ID: 880-8307-4

Date Collected: 11/12/21 10:23

Matrix: Solid

Date Received: 11/15/21 11:07

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		11/16/21 15:46	11/17/21 16:24	1
Toluene	<0.00199	U	0.00199	mg/Kg		11/16/21 15:46	11/17/21 16:24	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		11/16/21 15:46	11/17/21 16:24	1
m,p-Xylenes	<0.00398	U	0.00398	mg/Kg		11/16/21 15:46	11/17/21 16:24	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		11/16/21 15:46	11/17/21 16:24	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		11/16/21 15:46	11/17/21 16:24	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		70 - 130			11/16/21 15:46	11/17/21 16:24	1
1,4-Difluorobenzene (Surr)	101		70 - 130			11/16/21 15:46	11/17/21 16:24	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			11/22/21 13:36	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			11/19/21 13:54	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		11/16/21 08:31	11/16/21 23:46	1
Diesel Range Organics (Over C10-C28)	<50.0	U *	50.0	mg/Kg		11/16/21 08:31	11/16/21 23:46	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		11/16/21 08:31	11/16/21 23:46	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane (Surr)	100		70 - 130			11/16/21 08:31	11/16/21 23:46	1
o-Terphenyl (Surr)	109		70 - 130			11/16/21 08:31	11/16/21 23:46	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	114		4.99	mg/Kg			11/21/21 16:24	1

Eurofins Xenco, Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-8307-1
SDG: 21-0100-20

Client Sample ID: S-7 1'

Lab Sample ID: 880-8307-5

Date Collected: 11/12/21 10:40

Matrix: Solid

Date Received: 11/15/21 11:07

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		11/16/21 15:46	11/17/21 16:44	1
Toluene	<0.00199	U	0.00199	mg/Kg		11/16/21 15:46	11/17/21 16:44	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		11/16/21 15:46	11/17/21 16:44	1
m,p-Xylenes	<0.00398	U	0.00398	mg/Kg		11/16/21 15:46	11/17/21 16:44	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		11/16/21 15:46	11/17/21 16:44	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		11/16/21 15:46	11/17/21 16:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		70 - 130	11/16/21 15:46	11/17/21 16:44	1
1,4-Difluorobenzene (Surr)	101		70 - 130	11/16/21 15:46	11/17/21 16:44	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			11/22/21 13:36	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8	mg/Kg			11/19/21 13:54	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8	mg/Kg		11/16/21 08:31	11/17/21 00:07	1
Diesel Range Organics (Over C10-C28)	<49.8	U *	49.8	mg/Kg		11/16/21 08:31	11/17/21 00:07	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		11/16/21 08:31	11/17/21 00:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane (Surr)	99		70 - 130	11/16/21 08:31	11/17/21 00:07	1
o-Terphenyl (Surr)	105		70 - 130	11/16/21 08:31	11/17/21 00:07	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	723	F1	5.00	mg/Kg			11/21/21 17:03	1

Client Sample ID: S-7 3'

Lab Sample ID: 880-8307-6

Date Collected: 11/12/21 10:41

Matrix: Solid

Date Received: 11/15/21 11:07

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		11/16/21 15:46	11/17/21 17:05	1
Toluene	<0.00199	U	0.00199	mg/Kg		11/16/21 15:46	11/17/21 17:05	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		11/16/21 15:46	11/17/21 17:05	1
m,p-Xylenes	<0.00398	U	0.00398	mg/Kg		11/16/21 15:46	11/17/21 17:05	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		11/16/21 15:46	11/17/21 17:05	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		11/16/21 15:46	11/17/21 17:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	119		70 - 130	11/16/21 15:46	11/17/21 17:05	1
1,4-Difluorobenzene (Surr)	101		70 - 130	11/16/21 15:46	11/17/21 17:05	1

Eurofins Xenco, Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-8307-1
SDG: 21-0100-20

Client Sample ID: S-7 3'

Lab Sample ID: 880-8307-6

Date Collected: 11/12/21 10:41

Matrix: Solid

Date Received: 11/15/21 11:07

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			11/22/21 13:36	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.7	U	49.7	mg/Kg			11/19/21 13:54	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.7	U	49.7	mg/Kg		11/16/21 08:31	11/17/21 00:27	1
Diesel Range Organics (Over C10-C28)	<49.7	U *	49.7	mg/Kg		11/16/21 08:31	11/17/21 00:27	1
Oil Range Organics (Over C28-C36)	<49.7	U	49.7	mg/Kg		11/16/21 08:31	11/17/21 00:27	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane (Surr)	95		70 - 130			11/16/21 08:31	11/17/21 00:27	1
o-Terphenyl (Surr)	103		70 - 130			11/16/21 08:31	11/17/21 00:27	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	108		4.99	mg/Kg			11/21/21 17:18	1

Client Sample ID: S-7 5'

Lab Sample ID: 880-8307-7

Date Collected: 11/12/21 10:42

Matrix: Solid

Date Received: 11/15/21 11:07

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/16/21 15:46	11/17/21 18:27	1
Toluene	<0.00200	U	0.00200	mg/Kg		11/16/21 15:46	11/17/21 18:27	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/16/21 15:46	11/17/21 18:27	1
m,p-Xylenes	<0.00400	U	0.00400	mg/Kg		11/16/21 15:46	11/17/21 18:27	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/16/21 15:46	11/17/21 18:27	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		11/16/21 15:46	11/17/21 18:27	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	126		70 - 130			11/16/21 15:46	11/17/21 18:27	1
1,4-Difluorobenzene (Surr)	103		70 - 130			11/16/21 15:46	11/17/21 18:27	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/Kg			11/22/21 13:36	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8	mg/Kg			11/19/21 13:54	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8	mg/Kg		11/16/21 08:31	11/17/21 00:48	1
Diesel Range Organics (Over C10-C28)	<49.8	U *	49.8	mg/Kg		11/16/21 08:31	11/17/21 00:48	1

Eurofins Xenco, Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-8307-1
SDG: 21-0100-20

Client Sample ID: S-7 5'

Lab Sample ID: 880-8307-7

Date Collected: 11/12/21 10:42

Matrix: Solid

Date Received: 11/15/21 11:07

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Oil Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		11/16/21 08:31	11/17/21 00:48	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane (Surr)	90		70 - 130			11/16/21 08:31	11/17/21 00:48	1
o-Terphenyl (Surr)	95		70 - 130			11/16/21 08:31	11/17/21 00:48	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	113		4.98	mg/Kg			11/21/21 17:23	1

Client Sample ID: S-7 10'

Lab Sample ID: 880-8307-8

Date Collected: 11/12/21 10:43

Matrix: Solid

Date Received: 11/15/21 11:07

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/16/21 15:46	11/17/21 18:48	1
Toluene	<0.00200	U	0.00200	mg/Kg		11/16/21 15:46	11/17/21 18:48	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/16/21 15:46	11/17/21 18:48	1
m,p-Xylenes	<0.00399	U	0.00399	mg/Kg		11/16/21 15:46	11/17/21 18:48	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/16/21 15:46	11/17/21 18:48	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		11/16/21 15:46	11/17/21 18:48	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	118		70 - 130			11/16/21 15:46	11/17/21 18:48	1
1,4-Difluorobenzene (Surr)	100		70 - 130			11/16/21 15:46	11/17/21 18:48	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			11/22/21 13:36	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			11/19/21 13:54	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		11/16/21 08:31	11/17/21 01:09	1
Diesel Range Organics (Over C10-C28)	<49.9	U *	49.9	mg/Kg		11/16/21 08:31	11/17/21 01:09	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		11/16/21 08:31	11/17/21 01:09	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane (Surr)	94		70 - 130			11/16/21 08:31	11/17/21 01:09	1
o-Terphenyl (Surr)	96		70 - 130			11/16/21 08:31	11/17/21 01:09	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	41.6		4.95	mg/Kg			11/21/21 17:28	1

Eurofins Xenco, Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-8307-1
SDG: 21-0100-20

Client Sample ID: S-8 1'

Lab Sample ID: 880-8307-9

Date Collected: 11/12/21 11:00

Matrix: Solid

Date Received: 11/15/21 11:07

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198	mg/Kg		11/16/21 15:46	11/17/21 19:08	1
Toluene	<0.00198	U	0.00198	mg/Kg		11/16/21 15:46	11/17/21 19:08	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		11/16/21 15:46	11/17/21 19:08	1
m,p-Xylenes	<0.00396	U	0.00396	mg/Kg		11/16/21 15:46	11/17/21 19:08	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		11/16/21 15:46	11/17/21 19:08	1
Xylenes, Total	<0.00396	U	0.00396	mg/Kg		11/16/21 15:46	11/17/21 19:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	121		70 - 130	11/16/21 15:46	11/17/21 19:08	1
1,4-Difluorobenzene (Surr)	96		70 - 130	11/16/21 15:46	11/17/21 19:08	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396	mg/Kg			11/22/21 13:36	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			11/16/21 13:46	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		11/15/21 14:49	11/15/21 22:46	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		11/15/21 14:49	11/15/21 22:46	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		11/15/21 14:49	11/15/21 22:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane (Surr)	102		70 - 130	11/15/21 14:49	11/15/21 22:46	1
o-Terphenyl (Surr)	112		70 - 130	11/15/21 14:49	11/15/21 22:46	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	587		4.99	mg/Kg			11/21/21 17:32	1

Client Sample ID: S-8 3'

Lab Sample ID: 880-8307-10

Date Collected: 11/12/21 11:01

Matrix: Solid

Date Received: 11/15/21 11:07

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		11/16/21 15:46	11/17/21 19:28	1
Toluene	<0.00201	U	0.00201	mg/Kg		11/16/21 15:46	11/17/21 19:28	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		11/16/21 15:46	11/17/21 19:28	1
m,p-Xylenes	<0.00402	U	0.00402	mg/Kg		11/16/21 15:46	11/17/21 19:28	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		11/16/21 15:46	11/17/21 19:28	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		11/16/21 15:46	11/17/21 19:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	115		70 - 130	11/16/21 15:46	11/17/21 19:28	1
1,4-Difluorobenzene (Surr)	100		70 - 130	11/16/21 15:46	11/17/21 19:28	1

Eurofins Xenco, Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-8307-1
SDG: 21-0100-20

Client Sample ID: S-8 3'

Lab Sample ID: 880-8307-10

Date Collected: 11/12/21 11:01

Matrix: Solid

Date Received: 11/15/21 11:07

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			11/22/21 13:36	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8	mg/Kg			11/16/21 13:46	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8	mg/Kg		11/15/21 14:49	11/15/21 23:08	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8	mg/Kg		11/15/21 14:49	11/15/21 23:08	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		11/15/21 14:49	11/15/21 23:08	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane (Surr)	103		70 - 130			11/15/21 14:49	11/15/21 23:08	1
o-Terphenyl (Surr)	117		70 - 130			11/15/21 14:49	11/15/21 23:08	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	350		5.04	mg/Kg			11/21/21 17:47	1

Client Sample ID: S-8 5'

Lab Sample ID: 880-8307-11

Date Collected: 11/12/21 11:02

Matrix: Solid

Date Received: 11/15/21 11:07

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/16/21 15:46	11/17/21 19:49	1
Toluene	<0.00200	U	0.00200	mg/Kg		11/16/21 15:46	11/17/21 19:49	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/16/21 15:46	11/17/21 19:49	1
m,p-Xylenes	<0.00401	U	0.00401	mg/Kg		11/16/21 15:46	11/17/21 19:49	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/16/21 15:46	11/17/21 19:49	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		11/16/21 15:46	11/17/21 19:49	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	126		70 - 130			11/16/21 15:46	11/17/21 19:49	1
1,4-Difluorobenzene (Surr)	101		70 - 130			11/16/21 15:46	11/17/21 19:49	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401	mg/Kg			11/22/21 13:36	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			11/16/21 13:46	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		11/15/21 14:49	11/15/21 23:29	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		11/15/21 14:49	11/15/21 23:29	1

Eurofins Xenco, Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-8307-1
SDG: 21-0100-20

Client Sample ID: S-8 5'

Lab Sample ID: 880-8307-11

Date Collected: 11/12/21 11:02

Matrix: Solid

Date Received: 11/15/21 11:07

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		11/15/21 14:49	11/15/21 23:29	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane (Surr)	107		70 - 130			11/15/21 14:49	11/15/21 23:29	1
o-Terphenyl (Surr)	120		70 - 130			11/15/21 14:49	11/15/21 23:29	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	455		5.00	mg/Kg			11/21/21 17:52	1

Client Sample ID: S-8 10'

Lab Sample ID: 880-8307-12

Date Collected: 11/12/21 11:03

Matrix: Solid

Date Received: 11/15/21 11:07

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		11/16/21 15:46	11/17/21 20:09	1
Toluene	<0.00199	U	0.00199	mg/Kg		11/16/21 15:46	11/17/21 20:09	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		11/16/21 15:46	11/17/21 20:09	1
m,p-Xylenes	<0.00398	U	0.00398	mg/Kg		11/16/21 15:46	11/17/21 20:09	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		11/16/21 15:46	11/17/21 20:09	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		11/16/21 15:46	11/17/21 20:09	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	114		70 - 130			11/16/21 15:46	11/17/21 20:09	1
1,4-Difluorobenzene (Surr)	80		70 - 130			11/16/21 15:46	11/17/21 20:09	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			11/22/21 13:36	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			11/16/21 13:46	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		11/15/21 14:49	11/15/21 23:50	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		11/15/21 14:49	11/15/21 23:50	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		11/15/21 14:49	11/15/21 23:50	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane (Surr)	108		70 - 130			11/15/21 14:49	11/15/21 23:50	1
o-Terphenyl (Surr)	122		70 - 130			11/15/21 14:49	11/15/21 23:50	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	79.8		4.95	mg/Kg			11/21/21 17:57	1

Eurofins Xenco, Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-8307-1
SDG: 21-0100-20

Client Sample ID: S-13 .5'

Lab Sample ID: 880-8307-13

Date Collected: 11/12/21 11:18

Matrix: Solid

Date Received: 11/15/21 11:07

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202	mg/Kg		11/16/21 15:46	11/17/21 20:30	1
Toluene	<0.00202	U	0.00202	mg/Kg		11/16/21 15:46	11/17/21 20:30	1
Ethylbenzene	<0.00202	U	0.00202	mg/Kg		11/16/21 15:46	11/17/21 20:30	1
m,p-Xylenes	<0.00403	U	0.00403	mg/Kg		11/16/21 15:46	11/17/21 20:30	1
o-Xylene	<0.00202	U	0.00202	mg/Kg		11/16/21 15:46	11/17/21 20:30	1
Xylenes, Total	<0.00403	U	0.00403	mg/Kg		11/16/21 15:46	11/17/21 20:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	107		70 - 130	11/16/21 15:46	11/17/21 20:30	1
1,4-Difluorobenzene (Surr)	100		70 - 130	11/16/21 15:46	11/17/21 20:30	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00403	U	0.00403	mg/Kg			11/22/21 13:36	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			11/16/21 13:46	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		11/15/21 14:49	11/16/21 00:12	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		11/15/21 14:49	11/16/21 00:12	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		11/15/21 14:49	11/16/21 00:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane (Surr)	105		70 - 130	11/15/21 14:49	11/16/21 00:12	1
o-Terphenyl (Surr)	112		70 - 130	11/15/21 14:49	11/16/21 00:12	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.24		4.97	mg/Kg			11/21/21 18:02	1

Client Sample ID: S-13 1'

Lab Sample ID: 880-8307-14

Date Collected: 11/12/21 11:19

Matrix: Solid

Date Received: 11/15/21 11:07

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202	mg/Kg		11/16/21 15:46	11/17/21 20:50	1
Toluene	<0.00202	U	0.00202	mg/Kg		11/16/21 15:46	11/17/21 20:50	1
Ethylbenzene	<0.00202	U	0.00202	mg/Kg		11/16/21 15:46	11/17/21 20:50	1
m,p-Xylenes	<0.00404	U	0.00404	mg/Kg		11/16/21 15:46	11/17/21 20:50	1
o-Xylene	<0.00202	U	0.00202	mg/Kg		11/16/21 15:46	11/17/21 20:50	1
Xylenes, Total	<0.00404	U	0.00404	mg/Kg		11/16/21 15:46	11/17/21 20:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	121		70 - 130	11/16/21 15:46	11/17/21 20:50	1
1,4-Difluorobenzene (Surr)	80		70 - 130	11/16/21 15:46	11/17/21 20:50	1

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Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-8307-1
SDG: 21-0100-20

Client Sample ID: S-13 1'

Lab Sample ID: 880-8307-14

Date Collected: 11/12/21 11:19

Matrix: Solid

Date Received: 11/15/21 11:07

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00404	U	0.00404	mg/Kg			11/22/21 13:36	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8	mg/Kg			11/16/21 13:46	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8	mg/Kg		11/15/21 14:49	11/16/21 00:33	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8	mg/Kg		11/15/21 14:49	11/16/21 00:33	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		11/15/21 14:49	11/16/21 00:33	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane (Surr)	103		70 - 130			11/15/21 14:49	11/16/21 00:33	1
o-Terphenyl (Surr)	111		70 - 130			11/15/21 14:49	11/16/21 00:33	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	12.4		4.98	mg/Kg			11/21/21 18:07	1

Surrogate Summary

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-8307-1
SDG: 21-0100-20

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)					
Lab Sample ID	Client Sample ID	BFB1	DFBZ1				
		(70-130)	(70-130)				
880-8307-1	S-6 1'	117	73				
880-8307-2	S-6 3'	109	102				
880-8307-3	S-6 5'	123	111				
880-8307-4	S-6 10'	105	101				
880-8307-5	S-7 1'	96	101				
880-8307-6	S-7 3'	119	101				
880-8307-7	S-7 5'	126	103				
880-8307-8	S-7 10'	118	100				
880-8307-9	S-8 1'	121	96				
880-8307-10	S-8 3'	115	100				
880-8307-11	S-8 5'	126	101				
880-8307-12	S-8 10'	114	80				
880-8307-13	S-13 .5'	107	100				
880-8307-14	S-13 1'	121	80				
880-8351-A-1-A MS	Matrix Spike	123	105				
880-8351-A-1-B MSD	Matrix Spike Duplicate	116	97				
LCS 880-12348/1-A	Lab Control Sample	114	107				
LCSD 880-12348/2-A	Lab Control Sample Dup	113	109				
MB 880-12348/5-A	Method Blank	129	109				
Surrogate Legend							
BFB = 4-Bromofluorobenzene (Surr)							
DFBZ = 1,4-Difluorobenzene (Surr)							

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)					
Lab Sample ID	Client Sample ID	1CO1	OTPH1				
		(70-130)	(70-130)				
880-8307-1	S-6 1'	101	112				
880-8307-1 MS	S-6 1'	97	93				
880-8307-1 MSD	S-6 1'	98	93				
880-8307-2	S-6 3'	103	111				
880-8307-3	S-6 5'	92	98				
880-8307-4	S-6 10'	100	109				
880-8307-5	S-7 1'	99	105				
880-8307-6	S-7 3'	95	103				
880-8307-7	S-7 5'	90	95				
880-8307-8	S-7 10'	94	96				
880-8307-9	S-8 1'	102	112				
880-8307-10	S-8 3'	103	117				
880-8307-11	S-8 5'	107	120				
880-8307-12	S-8 10'	108	122				
880-8307-13	S-13 .5'	105	112				
880-8307-14	S-13 1'	103	111				
890-1551-A-2-C MS	Matrix Spike	129	125				
890-1551-A-2-D MSD	Matrix Spike Duplicate	108	106				
LCS 880-12340/2-A	Lab Control Sample	99	109				
LCS 880-12411/2-A	Lab Control Sample	91	90				

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Surrogate Summary

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-8307-1
SDG: 21-0100-20

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
LCSD 880-12340/3-A	Lab Control Sample Dup	100	110
LCSD 880-12411/3-A	Lab Control Sample Dup	81	84
MB 880-12340/1-A	Method Blank	129	146 S1+
MB 880-12411/1-A	Method Blank	95	105
Surrogate Legend			
1CO = 1-Chlorooctane (Surr)			
OTPH = o-Terphenyl (Surr)			

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-8307-1
SDG: 21-0100-20

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-12348/5-A

Matrix: Solid

Analysis Batch: 12497

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 12348

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/16/21 15:46	11/17/21 12:27	1
Toluene	<0.00200	U	0.00200	mg/Kg		11/16/21 15:46	11/17/21 12:27	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/16/21 15:46	11/17/21 12:27	1
m,p-Xylenes	<0.00400	U	0.00400	mg/Kg		11/16/21 15:46	11/17/21 12:27	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/16/21 15:46	11/17/21 12:27	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		11/16/21 15:46	11/17/21 12:27	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	129		70 - 130	11/16/21 15:46	11/17/21 12:27	1
1,4-Difluorobenzene (Surr)	109		70 - 130	11/16/21 15:46	11/17/21 12:27	1

Lab Sample ID: LCS 880-12348/1-A

Matrix: Solid

Analysis Batch: 12497

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 12348

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.100	0.08655		mg/Kg		87	70 - 130
Toluene	0.100	0.08181		mg/Kg		82	70 - 130
Ethylbenzene	0.100	0.08728		mg/Kg		87	70 - 130
m,p-Xylenes	0.200	0.1853		mg/Kg		93	70 - 130
o-Xylene	0.100	0.09289		mg/Kg		93	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	114		70 - 130
1,4-Difluorobenzene (Surr)	107		70 - 130

Lab Sample ID: LCSD 880-12348/2-A

Matrix: Solid

Analysis Batch: 12497

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 12348

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Benzene	0.100	0.08834		mg/Kg		88	70 - 130	2	35
Toluene	0.100	0.08343		mg/Kg		83	70 - 130	2	35
Ethylbenzene	0.100	0.09147		mg/Kg		91	70 - 130	5	35
m,p-Xylenes	0.200	0.1909		mg/Kg		95	70 - 130	3	35
o-Xylene	0.100	0.09414		mg/Kg		94	70 - 130	1	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	113		70 - 130
1,4-Difluorobenzene (Surr)	109		70 - 130

Lab Sample ID: 880-8351-A-1-A MS

Matrix: Solid

Analysis Batch: 12497

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 12348

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	<0.00199	U	0.101	0.08389		mg/Kg		83	70 - 130
Toluene	<0.00199	U	0.101	0.08273		mg/Kg		82	70 - 130

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QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-8307-1
SDG: 21-0100-20

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 880-8351-A-1-A MS

Matrix: Solid

Analysis Batch: 12497

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 12348

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	<0.00199	U	0.101	0.08920		mg/Kg		89	70 - 130
m,p-Xylenes	<0.00398	U	0.201	0.1883		mg/Kg		94	70 - 130
o-Xylene	<0.00199	U	0.101	0.09603		mg/Kg		95	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	123		70 - 130
1,4-Difluorobenzene (Surr)	105		70 - 130

Lab Sample ID: 880-8351-A-1-B MSD

Matrix: Solid

Analysis Batch: 12497

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 12348

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Benzene	<0.00199	U	0.100	0.07203		mg/Kg		72	70 - 130	15	35
Toluene	<0.00199	U	0.100	0.07147		mg/Kg		71	70 - 130	15	35
Ethylbenzene	<0.00199	U	0.100	0.07551		mg/Kg		76	70 - 130	17	35
m,p-Xylenes	<0.00398	U	0.200	0.1623		mg/Kg		81	70 - 130	15	35
o-Xylene	<0.00199	U	0.100	0.08291		mg/Kg		82	70 - 130	15	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	116		70 - 130
1,4-Difluorobenzene (Surr)	97		70 - 130

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 880-12340/1-A

Matrix: Solid

Analysis Batch: 12232

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 12340

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		11/15/21 14:49	11/15/21 15:28	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		11/15/21 14:49	11/15/21 15:28	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		11/15/21 14:49	11/15/21 15:28	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane (Surr)	129		70 - 130	11/15/21 14:49	11/15/21 15:28	1
o-Terphenyl (Surr)	146	S1+	70 - 130	11/15/21 14:49	11/15/21 15:28	1

Lab Sample ID: LCS 880-12340/2-A

Matrix: Solid

Analysis Batch: 12232

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 12340

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1048		mg/Kg		105	70 - 130
Diesel Range Organics (Over C10-C28)	1000	922.2		mg/Kg		92	70 - 130

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QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-8307-1
SDG: 21-0100-20

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: LCS 880-12340/2-A

Matrix: Solid

Analysis Batch: 12232

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 12340

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane (Surr)	99		70 - 130
o-Terphenyl (Surr)	109		70 - 130

Lab Sample ID: LCSD 880-12340/3-A

Matrix: Solid

Analysis Batch: 12232

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 12340

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	1092		mg/Kg		109	70 - 130	4	20
Diesel Range Organics (Over C10-C28)	1000	941.2		mg/Kg		94	70 - 130	2	20

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane (Surr)	100		70 - 130
o-Terphenyl (Surr)	110		70 - 130

Lab Sample ID: 890-1551-A-2-C MS

Matrix: Solid

Analysis Batch: 12232

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 12340

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	997	1182		mg/Kg		119	70 - 130		
Diesel Range Organics (Over C10-C28)	<50.0	U	997	1218		mg/Kg		120	70 - 130		

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane (Surr)	129		70 - 130
o-Terphenyl (Surr)	125		70 - 130

Lab Sample ID: 890-1551-A-2-D MSD

Matrix: Solid

Analysis Batch: 12232

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 12340

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	998	1118		mg/Kg		112	70 - 130	6	20
Diesel Range Organics (Over C10-C28)	<50.0	U	998	1036		mg/Kg		102	70 - 130	16	20

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane (Surr)	108		70 - 130
o-Terphenyl (Surr)	106		70 - 130

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QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-8307-1
SDG: 21-0100-20

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: MB 880-12411/1-A

Matrix: Solid

Analysis Batch: 12396

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 12411

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		11/16/21 08:31	11/16/21 21:00	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		11/16/21 08:31	11/16/21 21:00	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		11/16/21 08:31	11/16/21 21:00	1
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane (Surr)	95		70 - 130			11/16/21 08:31	11/16/21 21:00	1
o-Terphenyl (Surr)	105		70 - 130			11/16/21 08:31	11/16/21 21:00	1

Lab Sample ID: LCS 880-12411/2-A

Matrix: Solid

Analysis Batch: 12396

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 12411

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO)-C6-C10	1000	856.8		mg/Kg		86	70 - 130
Diesel Range Organics (Over C10-C28)	1000	689.5	*-	mg/Kg		69	70 - 130
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1-Chlorooctane (Surr)	91		70 - 130				
o-Terphenyl (Surr)	90		70 - 130				

Lab Sample ID: LCSD 880-12411/3-A

Matrix: Solid

Analysis Batch: 12396

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 12411

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	949.7		mg/Kg		95	70 - 130	10	20
Diesel Range Organics (Over C10-C28)	1000	748.4		mg/Kg		75	70 - 130	8	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
1-Chlorooctane (Surr)	81		70 - 130						
o-Terphenyl (Surr)	84		70 - 130						

Lab Sample ID: 880-8307-1 MS

Matrix: Solid

Analysis Batch: 12396

Client Sample ID: S-6 1'

Prep Type: Total/NA

Prep Batch: 12411

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	997	1176		mg/Kg		118	70 - 130
Diesel Range Organics (Over C10-C28)	<50.0	U *-	997	849.9		mg/Kg		85	70 - 130

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QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-8307-1
SDG: 21-0100-20

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: 880-8307-1 MS

Matrix: Solid

Analysis Batch: 12396

Client Sample ID: S-6 1'

Prep Type: Total/NA

Prep Batch: 12411

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane (Surr)	97		70 - 130
o-Terphenyl (Surr)	93		70 - 130

Lab Sample ID: 880-8307-1 MSD

Matrix: Solid

Analysis Batch: 12396

Client Sample ID: S-6 1'

Prep Type: Total/NA

Prep Batch: 12411

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	998	1186		mg/Kg		119	70 - 130	1	20
Diesel Range Organics (Over C10-C28)	<50.0	U *	998	858.4		mg/Kg		86	70 - 130	1	20

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane (Surr)	98		70 - 130
o-Terphenyl (Surr)	93		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-12491/1-A

Matrix: Solid

Analysis Batch: 12845

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			11/21/21 16:48	1

Lab Sample ID: LCS 880-12491/2-A

Matrix: Solid

Analysis Batch: 12845

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	250	264.7		mg/Kg		106	90 - 110

Lab Sample ID: LCSD 880-12491/3-A

Matrix: Solid

Analysis Batch: 12845

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	250	257.9		mg/Kg		103	90 - 110	3	20

Lab Sample ID: 880-8307-5 MS

Matrix: Solid

Analysis Batch: 12845

Client Sample ID: S-7 1'

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	723	F1	250	936.8	F1	mg/Kg		86	90 - 110

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QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-8307-1
SDG: 21-0100-20

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 880-8307-5 MSD

Matrix: Solid

Analysis Batch: 12845

Client Sample ID: S-7 1'

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	723	F1	250	960.7		mg/Kg		95	90 - 110	3	20

Lab Sample ID: MB 880-12493/1-A

Matrix: Solid

Analysis Batch: 12846

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			11/20/21 20:23	1

Lab Sample ID: LCS 880-12493/2-A

Matrix: Solid

Analysis Batch: 12846

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	250	257.0		mg/Kg		103	90 - 110

Lab Sample ID: LCSD 880-12493/3-A

Matrix: Solid

Analysis Batch: 12846

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	250	257.9		mg/Kg		103	90 - 110	0	20

Lab Sample ID: 880-8306-A-19-D MS

Matrix: Solid

Analysis Batch: 12846

Client Sample ID: Matrix Spike

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	784	F1	248	1057	F1	mg/Kg		111	90 - 110

Lab Sample ID: 880-8306-A-19-E MSD

Matrix: Solid

Analysis Batch: 12846

Client Sample ID: Matrix Spike Duplicate

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	784	F1	248	1079	F1	mg/Kg		119	90 - 110	2	20

Eurofins Xenco, Midland

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-8307-1
SDG: 21-0100-20

GC VOA

Prep Batch: 12348

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-8307-1	S-6 1'	Total/NA	Solid	5035	
880-8307-2	S-6 3'	Total/NA	Solid	5035	
880-8307-3	S-6 5'	Total/NA	Solid	5035	
880-8307-4	S-6 10'	Total/NA	Solid	5035	
880-8307-5	S-7 1'	Total/NA	Solid	5035	
880-8307-6	S-7 3'	Total/NA	Solid	5035	
880-8307-7	S-7 5'	Total/NA	Solid	5035	
880-8307-8	S-7 10'	Total/NA	Solid	5035	
880-8307-9	S-8 1'	Total/NA	Solid	5035	
880-8307-10	S-8 3'	Total/NA	Solid	5035	
880-8307-11	S-8 5'	Total/NA	Solid	5035	
880-8307-12	S-8 10'	Total/NA	Solid	5035	
880-8307-13	S-13 .5'	Total/NA	Solid	5035	
880-8307-14	S-13 1'	Total/NA	Solid	5035	
MB 880-12348/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-12348/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-12348/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-8351-A-1-A MS	Matrix Spike	Total/NA	Solid	5035	
880-8351-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 12497

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-8307-1	S-6 1'	Total/NA	Solid	8021B	12348
880-8307-2	S-6 3'	Total/NA	Solid	8021B	12348
880-8307-3	S-6 5'	Total/NA	Solid	8021B	12348
880-8307-4	S-6 10'	Total/NA	Solid	8021B	12348
880-8307-5	S-7 1'	Total/NA	Solid	8021B	12348
880-8307-6	S-7 3'	Total/NA	Solid	8021B	12348
880-8307-7	S-7 5'	Total/NA	Solid	8021B	12348
880-8307-8	S-7 10'	Total/NA	Solid	8021B	12348
880-8307-9	S-8 1'	Total/NA	Solid	8021B	12348
880-8307-10	S-8 3'	Total/NA	Solid	8021B	12348
880-8307-11	S-8 5'	Total/NA	Solid	8021B	12348
880-8307-12	S-8 10'	Total/NA	Solid	8021B	12348
880-8307-13	S-13 .5'	Total/NA	Solid	8021B	12348
880-8307-14	S-13 1'	Total/NA	Solid	8021B	12348
MB 880-12348/5-A	Method Blank	Total/NA	Solid	8021B	12348
LCS 880-12348/1-A	Lab Control Sample	Total/NA	Solid	8021B	12348
LCSD 880-12348/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	12348
880-8351-A-1-A MS	Matrix Spike	Total/NA	Solid	8021B	12348
880-8351-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	12348

Analysis Batch: 12593

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-8307-1	S-6 1'	Total/NA	Solid	Total BTEX	
880-8307-2	S-6 3'	Total/NA	Solid	Total BTEX	
880-8307-3	S-6 5'	Total/NA	Solid	Total BTEX	

Analysis Batch: 12945

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-8307-4	S-6 10'	Total/NA	Solid	Total BTEX	

Eurofins Xenco, Midland

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-8307-1
SDG: 21-0100-20

GC VOA (Continued)

Analysis Batch: 12945 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-8307-5	S-7 1'	Total/NA	Solid	Total BTEX	
880-8307-6	S-7 3'	Total/NA	Solid	Total BTEX	
880-8307-7	S-7 5'	Total/NA	Solid	Total BTEX	
880-8307-8	S-7 10'	Total/NA	Solid	Total BTEX	
880-8307-9	S-8 1'	Total/NA	Solid	Total BTEX	
880-8307-10	S-8 3'	Total/NA	Solid	Total BTEX	
880-8307-11	S-8 5'	Total/NA	Solid	Total BTEX	
880-8307-12	S-8 10'	Total/NA	Solid	Total BTEX	
880-8307-13	S-13 .5'	Total/NA	Solid	Total BTEX	
880-8307-14	S-13 1'	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 12232

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-8307-9	S-8 1'	Total/NA	Solid	8015B NM	12340
880-8307-10	S-8 3'	Total/NA	Solid	8015B NM	12340
880-8307-11	S-8 5'	Total/NA	Solid	8015B NM	12340
880-8307-12	S-8 10'	Total/NA	Solid	8015B NM	12340
880-8307-13	S-13 .5'	Total/NA	Solid	8015B NM	12340
880-8307-14	S-13 1'	Total/NA	Solid	8015B NM	12340
MB 880-12340/1-A	Method Blank	Total/NA	Solid	8015B NM	12340
LCS 880-12340/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	12340
LCSD 880-12340/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	12340
890-1551-A-2-C MS	Matrix Spike	Total/NA	Solid	8015B NM	12340
890-1551-A-2-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	12340

Prep Batch: 12340

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-8307-9	S-8 1'	Total/NA	Solid	8015NM Prep	
880-8307-10	S-8 3'	Total/NA	Solid	8015NM Prep	
880-8307-11	S-8 5'	Total/NA	Solid	8015NM Prep	
880-8307-12	S-8 10'	Total/NA	Solid	8015NM Prep	
880-8307-13	S-13 .5'	Total/NA	Solid	8015NM Prep	
880-8307-14	S-13 1'	Total/NA	Solid	8015NM Prep	
MB 880-12340/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-12340/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-12340/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-1551-A-2-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-1551-A-2-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 12396

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-8307-1	S-6 1'	Total/NA	Solid	8015B NM	12411
880-8307-2	S-6 3'	Total/NA	Solid	8015B NM	12411
880-8307-3	S-6 5'	Total/NA	Solid	8015B NM	12411
880-8307-4	S-6 10'	Total/NA	Solid	8015B NM	12411
880-8307-5	S-7 1'	Total/NA	Solid	8015B NM	12411
880-8307-6	S-7 3'	Total/NA	Solid	8015B NM	12411
880-8307-7	S-7 5'	Total/NA	Solid	8015B NM	12411
880-8307-8	S-7 10'	Total/NA	Solid	8015B NM	12411

Eurofins Xenco, Midland

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-8307-1
SDG: 21-0100-20

GC Semi VOA (Continued)

Analysis Batch: 12396 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-12411/1-A	Method Blank	Total/NA	Solid	8015B NM	12411
LCS 880-12411/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	12411
LCSD 880-12411/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	12411
880-8307-1 MS	S-6 1'	Total/NA	Solid	8015B NM	12411
880-8307-1 MSD	S-6 1'	Total/NA	Solid	8015B NM	12411

Prep Batch: 12411

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-8307-1	S-6 1'	Total/NA	Solid	8015NM Prep	
880-8307-2	S-6 3'	Total/NA	Solid	8015NM Prep	
880-8307-3	S-6 5'	Total/NA	Solid	8015NM Prep	
880-8307-4	S-6 10'	Total/NA	Solid	8015NM Prep	
880-8307-5	S-7 1'	Total/NA	Solid	8015NM Prep	
880-8307-6	S-7 3'	Total/NA	Solid	8015NM Prep	
880-8307-7	S-7 5'	Total/NA	Solid	8015NM Prep	
880-8307-8	S-7 10'	Total/NA	Solid	8015NM Prep	
MB 880-12411/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-12411/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-12411/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-8307-1 MS	S-6 1'	Total/NA	Solid	8015NM Prep	
880-8307-1 MSD	S-6 1'	Total/NA	Solid	8015NM Prep	

Analysis Batch: 12448

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-8307-9	S-8 1'	Total/NA	Solid	8015 NM	
880-8307-10	S-8 3'	Total/NA	Solid	8015 NM	
880-8307-11	S-8 5'	Total/NA	Solid	8015 NM	
880-8307-12	S-8 10'	Total/NA	Solid	8015 NM	
880-8307-13	S-13 .5'	Total/NA	Solid	8015 NM	
880-8307-14	S-13 1'	Total/NA	Solid	8015 NM	

Analysis Batch: 12781

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-8307-1	S-6 1'	Total/NA	Solid	8015 NM	
880-8307-2	S-6 3'	Total/NA	Solid	8015 NM	
880-8307-3	S-6 5'	Total/NA	Solid	8015 NM	
880-8307-4	S-6 10'	Total/NA	Solid	8015 NM	
880-8307-5	S-7 1'	Total/NA	Solid	8015 NM	
880-8307-6	S-7 3'	Total/NA	Solid	8015 NM	
880-8307-7	S-7 5'	Total/NA	Solid	8015 NM	
880-8307-8	S-7 10'	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 12491

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-8307-5	S-7 1'	Soluble	Solid	DI Leach	
880-8307-6	S-7 3'	Soluble	Solid	DI Leach	
880-8307-7	S-7 5'	Soluble	Solid	DI Leach	
880-8307-8	S-7 10'	Soluble	Solid	DI Leach	
880-8307-9	S-8 1'	Soluble	Solid	DI Leach	

Eurofins Xenco, Midland

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-8307-1
SDG: 21-0100-20

HPLC/IC (Continued)

Leach Batch: 12491 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-8307-10	S-8 3'	Soluble	Solid	DI Leach	
880-8307-11	S-8 5'	Soluble	Solid	DI Leach	
880-8307-12	S-8 10'	Soluble	Solid	DI Leach	
880-8307-13	S-13 .5'	Soluble	Solid	DI Leach	
880-8307-14	S-13 1'	Soluble	Solid	DI Leach	
MB 880-12491/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-12491/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-12491/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-8307-5 MS	S-7 1'	Soluble	Solid	DI Leach	
880-8307-5 MSD	S-7 1'	Soluble	Solid	DI Leach	

Leach Batch: 12493

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-8307-1	S-6 1'	Soluble	Solid	DI Leach	
880-8307-2	S-6 3'	Soluble	Solid	DI Leach	
880-8307-3	S-6 5'	Soluble	Solid	DI Leach	
880-8307-4	S-6 10'	Soluble	Solid	DI Leach	
MB 880-12493/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-12493/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-12493/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-8306-A-19-D MS	Matrix Spike	Soluble	Solid	DI Leach	
880-8306-A-19-E MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 12845

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-8307-5	S-7 1'	Soluble	Solid	300.0	12491
880-8307-6	S-7 3'	Soluble	Solid	300.0	12491
880-8307-7	S-7 5'	Soluble	Solid	300.0	12491
880-8307-8	S-7 10'	Soluble	Solid	300.0	12491
880-8307-9	S-8 1'	Soluble	Solid	300.0	12491
880-8307-10	S-8 3'	Soluble	Solid	300.0	12491
880-8307-11	S-8 5'	Soluble	Solid	300.0	12491
880-8307-12	S-8 10'	Soluble	Solid	300.0	12491
880-8307-13	S-13 .5'	Soluble	Solid	300.0	12491
880-8307-14	S-13 1'	Soluble	Solid	300.0	12491
MB 880-12491/1-A	Method Blank	Soluble	Solid	300.0	12491
LCS 880-12491/2-A	Lab Control Sample	Soluble	Solid	300.0	12491
LCSD 880-12491/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	12491
880-8307-5 MS	S-7 1'	Soluble	Solid	300.0	12491
880-8307-5 MSD	S-7 1'	Soluble	Solid	300.0	12491

Analysis Batch: 12846

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-8307-1	S-6 1'	Soluble	Solid	300.0	12493
880-8307-2	S-6 3'	Soluble	Solid	300.0	12493
880-8307-3	S-6 5'	Soluble	Solid	300.0	12493
880-8307-4	S-6 10'	Soluble	Solid	300.0	12493
MB 880-12493/1-A	Method Blank	Soluble	Solid	300.0	12493
LCS 880-12493/2-A	Lab Control Sample	Soluble	Solid	300.0	12493
LCSD 880-12493/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	12493
880-8306-A-19-D MS	Matrix Spike	Soluble	Solid	300.0	12493

Eurofins Xenco, Midland

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-8307-1
SDG: 21-0100-20

HPLC/IC (Continued)

Analysis Batch: 12846 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-8306-A-19-E MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	12493

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-8307-1
SDG: 21-0100-20

Client Sample ID: S-6 1'

Lab Sample ID: 880-8307-1

Date Collected: 11/12/21 10:20

Matrix: Solid

Date Received: 11/15/21 11:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	12348	11/16/21 15:46	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12497	11/17/21 14:10	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			12593	11/17/21 16:21	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			12781	11/19/21 13:54	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	12411	11/16/21 08:31	DM	XEN MID
Total/NA	Analysis	8015B NM		1			12396	11/16/21 22:02	AJ	XEN MID
Soluble	Leach	DI Leach			5.03 g	50 mL	12493	11/17/21 07:57	CA	XEN MID
Soluble	Analysis	300.0		1			12846	11/21/21 16:09	CH	XEN MID

Client Sample ID: S-6 3'

Lab Sample ID: 880-8307-2

Date Collected: 11/12/21 10:21

Matrix: Solid

Date Received: 11/15/21 11:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	12348	11/16/21 15:46	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12497	11/17/21 14:30	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			12593	11/17/21 16:21	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			12781	11/19/21 13:54	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	12411	11/16/21 08:31	DM	XEN MID
Total/NA	Analysis	8015B NM		1			12396	11/16/21 23:05	AJ	XEN MID
Soluble	Leach	DI Leach			498 g	50 mL	12493	11/17/21 07:57	CA	XEN MID
Soluble	Analysis	300.0		1			12846	11/21/21 16:14	CH	XEN MID

Client Sample ID: S-6 5'

Lab Sample ID: 880-8307-3

Date Collected: 11/12/21 10:22

Matrix: Solid

Date Received: 11/15/21 11:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	12348	11/16/21 15:46	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12497	11/17/21 14:51	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			12593	11/17/21 16:21	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			12781	11/19/21 13:54	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	12411	11/16/21 08:31	DM	XEN MID
Total/NA	Analysis	8015B NM		1			12396	11/16/21 23:25	AJ	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	12493	11/17/21 07:57	CA	XEN MID
Soluble	Analysis	300.0		1			12846	11/21/21 16:19	CH	XEN MID

Client Sample ID: S-6 10'

Lab Sample ID: 880-8307-4

Date Collected: 11/12/21 10:23

Matrix: Solid

Date Received: 11/15/21 11:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	12348	11/16/21 15:46	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12497	11/17/21 16:24	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			12945	11/22/21 13:36	AJ	XEN MID

Eurofins Xenco, Midland

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-8307-1
SDG: 21-0100-20

Client Sample ID: S-6 10'

Lab Sample ID: 880-8307-4

Date Collected: 11/12/21 10:23

Matrix: Solid

Date Received: 11/15/21 11:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			12781	11/19/21 13:54	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	12411	11/16/21 08:31	DM	XEN MID
Total/NA	Analysis	8015B NM		1			12396	11/16/21 23:46	AJ	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	12493	11/17/21 07:57	CA	XEN MID
Soluble	Analysis	300.0		1			12846	11/21/21 16:24	CH	XEN MID

Client Sample ID: S-7 1'

Lab Sample ID: 880-8307-5

Date Collected: 11/12/21 10:40

Matrix: Solid

Date Received: 11/15/21 11:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	12348	11/16/21 15:46	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12497	11/17/21 16:44	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			12945	11/22/21 13:36	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			12781	11/19/21 13:54	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	12411	11/16/21 08:31	DM	XEN MID
Total/NA	Analysis	8015B NM		1			12396	11/17/21 00:07	AJ	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	12491	11/17/21 07:47	CA	XEN MID
Soluble	Analysis	300.0		1			12845	11/21/21 17:03	CH	XEN MID

Client Sample ID: S-7 3'

Lab Sample ID: 880-8307-6

Date Collected: 11/12/21 10:41

Matrix: Solid

Date Received: 11/15/21 11:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	12348	11/16/21 15:46	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12497	11/17/21 17:05	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			12945	11/22/21 13:36	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			12781	11/19/21 13:54	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.06 g	10 mL	12411	11/16/21 08:31	DM	XEN MID
Total/NA	Analysis	8015B NM		1			12396	11/17/21 00:27	AJ	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	12491	11/17/21 07:47	CA	XEN MID
Soluble	Analysis	300.0		1			12845	11/21/21 17:18	CH	XEN MID

Client Sample ID: S-7 5'

Lab Sample ID: 880-8307-7

Date Collected: 11/12/21 10:42

Matrix: Solid

Date Received: 11/15/21 11:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	12348	11/16/21 15:46	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12497	11/17/21 18:27	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			12945	11/22/21 13:36	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			12781	11/19/21 13:54	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	12411	11/16/21 08:31	DM	XEN MID
Total/NA	Analysis	8015B NM		1			12396	11/17/21 00:48	AJ	XEN MID

Eurofins Xenco, Midland

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-8307-1
SDG: 21-0100-20

Client Sample ID: S-7 5'**Lab Sample ID: 880-8307-7****Date Collected: 11/12/21 10:42****Matrix: Solid****Date Received: 11/15/21 11:07**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.02 g	50 mL	12491	11/17/21 07:47	CA	XEN MID
Soluble	Analysis	300.0		1			12845	11/21/21 17:23	CH	XEN MID

Client Sample ID: S-7 10'**Lab Sample ID: 880-8307-8****Date Collected: 11/12/21 10:43****Matrix: Solid****Date Received: 11/15/21 11:07**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	12348	11/16/21 15:46	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12497	11/17/21 18:48	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			12945	11/22/21 13:36	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			12781	11/19/21 13:54	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	12411	11/16/21 08:31	DM	XEN MID
Total/NA	Analysis	8015B NM		1			12396	11/17/21 01:09	AJ	XEN MID
Soluble	Leach	DI Leach			5.05 g	50 mL	12491	11/17/21 07:47	CA	XEN MID
Soluble	Analysis	300.0		1			12845	11/21/21 17:28	CH	XEN MID

Client Sample ID: S-8 1'**Lab Sample ID: 880-8307-9****Date Collected: 11/12/21 11:00****Matrix: Solid****Date Received: 11/15/21 11:07**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	12348	11/16/21 15:46	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12497	11/17/21 19:08	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			12945	11/22/21 13:36	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			12448	11/16/21 13:46	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	12340	11/15/21 14:49	DM	XEN MID
Total/NA	Analysis	8015B NM		1			12232	11/15/21 22:46	AJ	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	12491	11/17/21 07:47	CA	XEN MID
Soluble	Analysis	300.0		1			12845	11/21/21 17:32	CH	XEN MID

Client Sample ID: S-8 3'**Lab Sample ID: 880-8307-10****Date Collected: 11/12/21 11:01****Matrix: Solid****Date Received: 11/15/21 11:07**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	12348	11/16/21 15:46	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12497	11/17/21 19:28	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			12945	11/22/21 13:36	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			12448	11/16/21 13:46	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	12340	11/15/21 14:49	DM	XEN MID
Total/NA	Analysis	8015B NM		1			12232	11/15/21 23:08	AJ	XEN MID
Soluble	Leach	DI Leach			4.96 g	50 mL	12491	11/17/21 07:47	CA	XEN MID
Soluble	Analysis	300.0		1			12845	11/21/21 17:47	CH	XEN MID

Eurofins Xenco, Midland

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-8307-1
SDG: 21-0100-20

Client Sample ID: S-8 5'

Lab Sample ID: 880-8307-11

Date Collected: 11/12/21 11:02

Matrix: Solid

Date Received: 11/15/21 11:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	12348	11/16/21 15:46	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12497	11/17/21 19:49	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			12945	11/22/21 13:36	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			12448	11/16/21 13:46	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	12340	11/15/21 14:49	DM	XEN MID
Total/NA	Analysis	8015B NM		1			12232	11/15/21 23:29	AJ	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	12491	11/17/21 07:47	CA	XEN MID
Soluble	Analysis	300.0		1			12845	11/21/21 17:52	CH	XEN MID

Client Sample ID: S-8 10'

Lab Sample ID: 880-8307-12

Date Collected: 11/12/21 11:03

Matrix: Solid

Date Received: 11/15/21 11:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	12348	11/16/21 15:46	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12497	11/17/21 20:09	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			12945	11/22/21 13:36	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			12448	11/16/21 13:46	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	12340	11/15/21 14:49	DM	XEN MID
Total/NA	Analysis	8015B NM		1			12232	11/15/21 23:50	AJ	XEN MID
Soluble	Leach	DI Leach			5.05 g	50 mL	12491	11/17/21 07:47	CA	XEN MID
Soluble	Analysis	300.0		1			12845	11/21/21 17:57	CH	XEN MID

Client Sample ID: S-13 .5'

Lab Sample ID: 880-8307-13

Date Collected: 11/12/21 11:18

Matrix: Solid

Date Received: 11/15/21 11:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	12348	11/16/21 15:46	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12497	11/17/21 20:30	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			12945	11/22/21 13:36	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			12448	11/16/21 13:46	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	12340	11/15/21 14:49	DM	XEN MID
Total/NA	Analysis	8015B NM		1			12232	11/16/21 00:12	AJ	XEN MID
Soluble	Leach	DI Leach			5.03 g	50 mL	12491	11/17/21 07:47	CA	XEN MID
Soluble	Analysis	300.0		1			12845	11/21/21 18:02	CH	XEN MID

Client Sample ID: S-13 1'

Lab Sample ID: 880-8307-14

Date Collected: 11/12/21 11:19

Matrix: Solid

Date Received: 11/15/21 11:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.95 g	5 mL	12348	11/16/21 15:46	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12497	11/17/21 20:50	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			12945	11/22/21 13:36	AJ	XEN MID

Eurofins Xenco, Midland

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-8307-1
SDG: 21-0100-20

Client Sample ID: S-13 1'
Date Collected: 11/12/21 11:19
Date Received: 11/15/21 11:07

Lab Sample ID: 880-8307-14
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			12448	11/16/21 13:46	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	12340	11/15/21 14:49	DM	XEN MID
Total/NA	Analysis	8015B NM		1			12232	11/16/21 00:33	AJ	XEN MID
Soluble	Leach	DI Leach			5.02 g	50 mL	12491	11/17/21 07:47	CA	XEN MID
Soluble	Analysis	300.0		1			12845	11/21/21 18:07	CH	XEN MID

Laboratory References:
XEN MID = Eurofins Xenco, Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-8307-1
SDG: 21-0100-20

Laboratory: Eurofins Xenco, Midland

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-21-22	06-30-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

Method Summary

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-8307-1
SDG: 21-0100-20

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	XEN MID
Total BTEX	Total BTEX Calculation	TAL SOP	XEN MID
8015 NM	Diesel Range Organics (DRO) (GC)	SW846	XEN MID
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	XEN MID
300.0	Anions, Ion Chromatography	MCAWW	XEN MID
5035	Closed System Purge and Trap	SW846	XEN MID
8015NM Prep	Microextraction	SW846	XEN MID
DI Leach	Deionized Water Leaching Procedure	ASTM	XEN MID

Protocol References:

ASTM = ASTM International

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

XEN MID = Eurofins Xenco, Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Eurofins Xenco, Midland

Sample Summary

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-8307-1
SDG: 21-0100-20

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-8307-1	S-6 1'	Solid	11/12/21 10:20	11/15/21 11:07
880-8307-2	S-6 3'	Solid	11/12/21 10:21	11/15/21 11:07
880-8307-3	S-6 5'	Solid	11/12/21 10:22	11/15/21 11:07
880-8307-4	S-6 10'	Solid	11/12/21 10:23	11/15/21 11:07
880-8307-5	S-7 1'	Solid	11/12/21 10:40	11/15/21 11:07
880-8307-6	S-7 3'	Solid	11/12/21 10:41	11/15/21 11:07
880-8307-7	S-7 5'	Solid	11/12/21 10:42	11/15/21 11:07
880-8307-8	S-7 10'	Solid	11/12/21 10:43	11/15/21 11:07
880-8307-9	S-8 1'	Solid	11/12/21 11:00	11/15/21 11:07
880-8307-10	S-8 3'	Solid	11/12/21 11:01	11/15/21 11:07
880-8307-11	S-8 5'	Solid	11/12/21 11:02	11/15/21 11:07
880-8307-12	S-8 10'	Solid	11/12/21 11:03	11/15/21 11:07
880-8307-13	S-13 .5'	Solid	11/12/21 11:18	11/15/21 11:07
880-8307-14	S-13 1'	Solid	11/12/21 11:19	11/15/21 11:07

Marson & Associates, Inc.
Environmental Consultants

880-8397 Chain of Custody



Data Reported to

DATE 11-12-21 PAGE 1 OF 1
PO# LAB WORK ORDER#
PROJECT LOCATION OR NAME SD 13 SWD
LAI PROJECT # 21-0100-20 COLLECTOR TP+MB

No. 2174
CHAIN-OF-CUSTODY

Field Sample ID	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION				ANALYSES		FIELD NOTES
						S=SOIL W=WATER A=AIR	P=PAINT SL=SLUDGE OT=OTHER	HCl	HNO ₃	H ₂ SO ₄ ☐ NaOH ☐	ICE	
S-6 1'		11/12/21	1020	S	1					X		
S-6 3'			1021							X		
S-6 5'			1022							X		
S-6 10'			1023							X		
S-7 1'			1040							X		
S-7 3'			1041							X		
S-7 5'			1042							X		
S-7 10'			1043							X		
S-8 1'			1100							X		
S-8 3'			1101							X		
S-8 5'			1102							X		
S-8 10'			1103							X		
S-13 5'			1118							X		
S-13 1'			1119							X		
TOTAL 14												

RELINQUISHED BY (Signature) <u>[Signature]</u>	DATE/TIME <u>11/15/21 11:07</u>	RECEIVED BY (Signature) <u>[Signature]</u>	DATE/TIME <u>11/15/21 11:07</u>
RELINQUISHED BY (Signature) <u>[Signature]</u>	DATE/TIME <u> </u>	RECEIVED BY (Signature) <u> </u>	DATE/TIME <u> </u>
RELINQUISHED BY (Signature) <u> </u>	DATE/TIME <u> </u>	RECEIVED BY (Signature) <u> </u>	DATE/TIME <u> </u>
LABORATORY <u>GENCO</u>	TURN AROUND TIME NORMAL ☒ 1 DAY ☐ 2 DAY ☐ OTHER ☐		

LABORATORY USE ONLY: RECEIVING TEMP <u>36.3</u> THERM# <u>IRB</u> CUSTODY SEALS - ☐ BROKEN ☒ INTACT ☐ NOT USED ☒ CARRIER BILL # <u> </u> ☒ HAND DELIVERED
--

Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-8307-1

SDG Number: 21-0100-20

Login Number: 8307

List Number: 1

Creator: Teel, Brianna

List Source: Eurofins Xenco, Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	



Environment Testing America

ANALYTICAL REPORT

Eurofins Midland
1211 W. Florida Ave
Midland, TX 79701
Tel: (432)704-5440

Laboratory Job ID: 880-14734-1
Laboratory Sample Delivery Group: 21-0100-20
Client Project/Site: SD 13 SWD

For:
Larson & Associates, Inc.
507 N Marienfeld
Suite 202
Midland, Texas 79701

Attn: Mr. Mark J Larson

A handwritten signature in cursive script that reads "Holly Taylor".

Authorized for release by:
5/20/2022 4:59:27 PM

Holly Taylor, Project Manager
(806)794-1296
Holly.Taylor@et.eurofinsus.com

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results through



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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Laboratory Job ID: 880-14734-1
SDG: 21-0100-20

Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Client Sample Results	5
Surrogate Summary	7
QC Sample Results	8
QC Association Summary	12
Lab Chronicle	14
Certification Summary	15
Method Summary	16
Sample Summary	17
Chain of Custody	18
Receipt Checklists	19

1

2

3

4

5

6

7

8

9

10

11

12

13

14

Definitions/Glossary

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-14734-1
SDG: 21-0100-20

Qualifiers

GC VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
SQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-14734-1
SDG: 21-0100-20

Job ID: 880-14734-1

Laboratory: Eurofins Midland

Narrative

Job Narrative
880-14734-1

Receipt

The samples were received on 5/12/2022 8:46 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.1°C

GC VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-14734-1
SDG: 21-0100-20

Client Sample ID: S-3 15'

Lab Sample ID: 880-14734-1

Date Collected: 05/10/22 16:04

Matrix: Solid

Date Received: 05/12/22 08:46

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		05/16/22 13:30	05/17/22 18:56	1
Toluene	<0.00200	U	0.00200	mg/Kg		05/16/22 13:30	05/17/22 18:56	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		05/16/22 13:30	05/17/22 18:56	1
m,p-Xylenes	<0.00399	U	0.00399	mg/Kg		05/16/22 13:30	05/17/22 18:56	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		05/16/22 13:30	05/17/22 18:56	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		05/16/22 13:30	05/17/22 18:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		70 - 130	05/16/22 13:30	05/17/22 18:56	1
1,4-Difluorobenzene (Surr)	101		70 - 130	05/16/22 13:30	05/17/22 18:56	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			05/18/22 09:03	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			05/16/22 11:36	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		05/12/22 13:37	05/14/22 05:00	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		05/12/22 13:37	05/14/22 05:00	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		05/12/22 13:37	05/14/22 05:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane (Surr)	94		70 - 130	05/12/22 13:37	05/14/22 05:00	1
o-Terphenyl (Surr)	89		70 - 130	05/12/22 13:37	05/14/22 05:00	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	90.2		4.97	mg/Kg			05/16/22 18:13	1

Client Sample ID: S-3 20'

Lab Sample ID: 880-14734-2

Date Collected: 05/10/22 16:10

Matrix: Solid

Date Received: 05/12/22 08:46

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		05/16/22 13:30	05/17/22 19:17	1
Toluene	<0.00200	U	0.00200	mg/Kg		05/16/22 13:30	05/17/22 19:17	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		05/16/22 13:30	05/17/22 19:17	1
m,p-Xylenes	<0.00401	U	0.00401	mg/Kg		05/16/22 13:30	05/17/22 19:17	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		05/16/22 13:30	05/17/22 19:17	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		05/16/22 13:30	05/17/22 19:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		70 - 130	05/16/22 13:30	05/17/22 19:17	1
1,4-Difluorobenzene (Surr)	100		70 - 130	05/16/22 13:30	05/17/22 19:17	1

Eurofins Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-14734-1
SDG: 21-0100-20

Client Sample ID: S-3 20'

Lab Sample ID: 880-14734-2

Date Collected: 05/10/22 16:10

Matrix: Solid

Date Received: 05/12/22 08:46

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401	mg/Kg			05/18/22 09:03	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			05/16/22 11:36	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		05/12/22 13:37	05/14/22 05:21	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		05/12/22 13:37	05/14/22 05:21	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		05/12/22 13:37	05/14/22 05:21	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane (Surr)	100		70 - 130			05/12/22 13:37	05/14/22 05:21	1
o-Terphenyl (Surr)	97		70 - 130			05/12/22 13:37	05/14/22 05:21	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	74.2		4.98	mg/Kg			05/16/22 18:19	1

Surrogate Summary

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-14734-1
SDG: 21-0100-20

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
880-14734-1	S-3 15'	104	101
880-14734-2	S-3 20'	103	100
890-2301-A-1-D MS	Matrix Spike	104	104
890-2301-A-1-E MSD	Matrix Spike Duplicate	103	102
LCS 880-25636/1-A	Lab Control Sample	98	96
LCSD 880-25636/2-A	Lab Control Sample Dup	102	102
MB 880-25636/5-A	Method Blank	97	98
Surrogate Legend			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
880-14734-1	S-3 15'	94	89
880-14734-2	S-3 20'	100	97
890-2298-A-1-B MS	Matrix Spike	109	95
890-2298-A-1-C MSD	Matrix Spike Duplicate	93	78
LCS 880-25433/2-A	Lab Control Sample	124	106
LCSD 880-25433/3-A	Lab Control Sample Dup	114	101
MB 880-25433/1-A	Method Blank	105	113
Surrogate Legend			
1CO = 1-Chlorooctane (Surr)			
OTPH = o-Terphenyl (Surr)			

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-14734-1
SDG: 21-0100-20

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-25636/5-A

Matrix: Solid

Analysis Batch: 25672

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 25636

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		05/16/22 13:30	05/17/22 11:48	1
Toluene	<0.00200	U	0.00200	mg/Kg		05/16/22 13:30	05/17/22 11:48	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		05/16/22 13:30	05/17/22 11:48	1
m,p-Xylenes	<0.00400	U	0.00400	mg/Kg		05/16/22 13:30	05/17/22 11:48	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		05/16/22 13:30	05/17/22 11:48	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		05/16/22 13:30	05/17/22 11:48	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		70 - 130	05/16/22 13:30	05/17/22 11:48	1
1,4-Difluorobenzene (Surr)	98		70 - 130	05/16/22 13:30	05/17/22 11:48	1

Lab Sample ID: LCS 880-25636/1-A

Matrix: Solid

Analysis Batch: 25672

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 25636

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.09524		mg/Kg		95	70 - 130
Toluene	0.100	0.09684		mg/Kg		97	70 - 130
Ethylbenzene	0.100	0.1120		mg/Kg		112	70 - 130
m,p-Xylenes	0.200	0.2019		mg/Kg		101	70 - 130
o-Xylene	0.100	0.09544		mg/Kg		95	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	98		70 - 130
1,4-Difluorobenzene (Surr)	96		70 - 130

Lab Sample ID: LCSD 880-25636/2-A

Matrix: Solid

Analysis Batch: 25672

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 25636

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1015		mg/Kg		101	70 - 130	6	35
Toluene	0.100	0.09620		mg/Kg		96	70 - 130	1	35
Ethylbenzene	0.100	0.1102		mg/Kg		110	70 - 130	2	35
m,p-Xylenes	0.200	0.1975		mg/Kg		99	70 - 130	2	35
o-Xylene	0.100	0.09391		mg/Kg		94	70 - 130	2	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	102		70 - 130
1,4-Difluorobenzene (Surr)	102		70 - 130

Lab Sample ID: 890-2301-A-1-D MS

Matrix: Solid

Analysis Batch: 25672

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 25636

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00199	U	0.0996	0.09146		mg/Kg		92	70 - 130
Toluene	<0.00199	U	0.0996	0.08637		mg/Kg		86	70 - 130

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QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-14734-1
SDG: 21-0100-20

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 890-2301-A-1-D MS

Matrix: Solid

Analysis Batch: 25672

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 25636

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00199	U	0.0996	0.09756		mg/Kg		98	70 - 130
m,p-Xylenes	<0.00398	U	0.199	0.1748		mg/Kg		88	70 - 130
o-Xylene	<0.00199	U	0.0996	0.08344		mg/Kg		83	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	104		70 - 130
1,4-Difluorobenzene (Surr)	104		70 - 130

Lab Sample ID: 890-2301-A-1-E MSD

Matrix: Solid

Analysis Batch: 25672

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 25636

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00199	U	0.0998	0.08543		mg/Kg		86	70 - 130	7	35
Toluene	<0.00199	U	0.0998	0.08179		mg/Kg		81	70 - 130	5	35
Ethylbenzene	<0.00199	U	0.0998	0.09262		mg/Kg		93	70 - 130	5	35
m,p-Xylenes	<0.00398	U	0.200	0.1656		mg/Kg		83	70 - 130	5	35
o-Xylene	<0.00199	U	0.0998	0.07884		mg/Kg		79	70 - 130	6	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	103		70 - 130
1,4-Difluorobenzene (Surr)	102		70 - 130

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 880-25433/1-A

Matrix: Solid

Analysis Batch: 25490

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 25433

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		05/12/22 13:37	05/13/22 21:51	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		05/12/22 13:37	05/13/22 21:51	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		05/12/22 13:37	05/13/22 21:51	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane (Surr)	105		70 - 130	05/12/22 13:37	05/13/22 21:51	1
o-Terphenyl (Surr)	113		70 - 130	05/12/22 13:37	05/13/22 21:51	1

Lab Sample ID: LCS 880-25433/2-A

Matrix: Solid

Analysis Batch: 25490

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 25433

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	983.1		mg/Kg		98	70 - 130
Diesel Range Organics (Over C10-C28)	1000	1215		mg/Kg		121	70 - 130

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QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-14734-1
SDG: 21-0100-20

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: LCS 880-25433/2-A
Matrix: Solid
Analysis Batch: 25490

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 25433

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane (Surr)	124		70 - 130
o-Terphenyl (Surr)	106		70 - 130

Lab Sample ID: LCSD 880-25433/3-A
Matrix: Solid
Analysis Batch: 25490

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 25433

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	877.0		mg/Kg		88	70 - 130	11	20
Diesel Range Organics (Over C10-C28)	1000	1062		mg/Kg		106	70 - 130	13	20

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane (Surr)	114		70 - 130
o-Terphenyl (Surr)	101		70 - 130

Lab Sample ID: 890-2298-A-1-B MS
Matrix: Solid
Analysis Batch: 25490

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 25433

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	1000	1070		mg/Kg		105	70 - 130		
Diesel Range Organics (Over C10-C28)	<50.0	U	1000	1102		mg/Kg		108	70 - 130		

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane (Surr)	109		70 - 130
o-Terphenyl (Surr)	95		70 - 130

Lab Sample ID: 890-2298-A-1-C MSD
Matrix: Solid
Analysis Batch: 25490

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 25433

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	998	914.6		mg/Kg		90	70 - 130	16	20
Diesel Range Organics (Over C10-C28)	<50.0	U	998	897.8		mg/Kg		88	70 - 130	20	20

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane (Surr)	93		70 - 130
o-Terphenyl (Surr)	78		70 - 130

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QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-14734-1
SDG: 21-0100-20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-25455/1-A

Matrix: Solid

Analysis Batch: 25619

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			05/16/22 16:50	1

Lab Sample ID: LCS 880-25455/2-A

Matrix: Solid

Analysis Batch: 25619

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	255.9		mg/Kg		102	90 - 110

Lab Sample ID: LCSD 880-25455/3-A

Matrix: Solid

Analysis Batch: 25619

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	271.5		mg/Kg		109	90 - 110	6	20

Lab Sample ID: 880-14731-A-1-C MS

Matrix: Solid

Analysis Batch: 25619

Client Sample ID: Matrix Spike

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	167		253	443.0		mg/Kg		109	90 - 110

Lab Sample ID: 880-14731-A-1-D MSD

Matrix: Solid

Analysis Batch: 25619

Client Sample ID: Matrix Spike Duplicate

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	167		253	432.4		mg/Kg		105	90 - 110	2	20

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-14734-1
SDG: 21-0100-20

GC VOA

Prep Batch: 25636

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-14734-1	S-3 15'	Total/NA	Solid	5035	
880-14734-2	S-3 20'	Total/NA	Solid	5035	
MB 880-25636/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-25636/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-25636/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2301-A-1-D MS	Matrix Spike	Total/NA	Solid	5035	
890-2301-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 25672

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-14734-1	S-3 15'	Total/NA	Solid	8021B	25636
880-14734-2	S-3 20'	Total/NA	Solid	8021B	25636
MB 880-25636/5-A	Method Blank	Total/NA	Solid	8021B	25636
LCS 880-25636/1-A	Lab Control Sample	Total/NA	Solid	8021B	25636
LCSD 880-25636/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	25636
890-2301-A-1-D MS	Matrix Spike	Total/NA	Solid	8021B	25636
890-2301-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	25636

Analysis Batch: 25794

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-14734-1	S-3 15'	Total/NA	Solid	Total BTEX	
880-14734-2	S-3 20'	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 25433

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-14734-1	S-3 15'	Total/NA	Solid	8015NM Prep	
880-14734-2	S-3 20'	Total/NA	Solid	8015NM Prep	
MB 880-25433/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-25433/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-25433/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2298-A-1-B MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-2298-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 25490

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-14734-1	S-3 15'	Total/NA	Solid	8015B NM	25433
880-14734-2	S-3 20'	Total/NA	Solid	8015B NM	25433
MB 880-25433/1-A	Method Blank	Total/NA	Solid	8015B NM	25433
LCS 880-25433/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	25433
LCSD 880-25433/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	25433
890-2298-A-1-B MS	Matrix Spike	Total/NA	Solid	8015B NM	25433
890-2298-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	25433

Analysis Batch: 25624

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-14734-1	S-3 15'	Total/NA	Solid	8015 NM	
880-14734-2	S-3 20'	Total/NA	Solid	8015 NM	

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QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-14734-1
SDG: 21-0100-20

HPLC/IC

Leach Batch: 25455

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-14734-1	S-3 15'	Soluble	Solid	DI Leach	
880-14734-2	S-3 20'	Soluble	Solid	DI Leach	
MB 880-25455/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-25455/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-25455/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-14731-A-1-C MS	Matrix Spike	Soluble	Solid	DI Leach	
880-14731-A-1-D MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 25619

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-14734-1	S-3 15'	Soluble	Solid	300.0	25455
880-14734-2	S-3 20'	Soluble	Solid	300.0	25455
MB 880-25455/1-A	Method Blank	Soluble	Solid	300.0	25455
LCS 880-25455/2-A	Lab Control Sample	Soluble	Solid	300.0	25455
LCSD 880-25455/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	25455
880-14731-A-1-C MS	Matrix Spike	Soluble	Solid	300.0	25455
880-14731-A-1-D MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	25455

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-14734-1
SDG: 21-0100-20

Client Sample ID: S-3 15'

Lab Sample ID: 880-14734-1

Date Collected: 05/10/22 16:04

Matrix: Solid

Date Received: 05/12/22 08:46

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	25636	05/16/22 13:30	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	25672	05/17/22 18:56	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			25794	05/18/22 09:03	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			25624	05/16/22 11:36	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	25433	05/12/22 13:37	DM	XEN MID
Total/NA	Analysis	8015B NM		1			25490	05/14/22 05:00	SM	XEN MID
Soluble	Leach	DI Leach			5.03 g	50 mL	25455	05/12/22 15:38	CH	XEN MID
Soluble	Analysis	300.0		1			25619	05/16/22 18:13	CH	XEN MID

Client Sample ID: S-3 20'

Lab Sample ID: 880-14734-2

Date Collected: 05/10/22 16:10

Matrix: Solid

Date Received: 05/12/22 08:46

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	25636	05/16/22 13:30	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	25672	05/17/22 19:17	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			25794	05/18/22 09:03	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			25624	05/16/22 11:36	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	25433	05/12/22 13:37	DM	XEN MID
Total/NA	Analysis	8015B NM		1			25490	05/14/22 05:21	SM	XEN MID
Soluble	Leach	DI Leach			5.02 g	50 mL	25455	05/12/22 15:38	CH	XEN MID
Soluble	Analysis	300.0		1			25619	05/16/22 18:19	CH	XEN MID

Laboratory References:

XEN MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-14734-1
SDG: 21-0100-20

Laboratory: Eurofins Midland

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-21-22	06-30-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Method Summary

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-14734-1
SDG: 21-0100-20

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	XEN MID
Total BTEX	Total BTEX Calculation	TAL SOP	XEN MID
8015 NM	Diesel Range Organics (DRO) (GC)	SW846	XEN MID
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	XEN MID
300.0	Anions, Ion Chromatography	MCAWW	XEN MID
5035	Closed System Purge and Trap	SW846	XEN MID
8015NM Prep	Microextraction	SW846	XEN MID
DI Leach	Deionized Water Leaching Procedure	ASTM	XEN MID

Protocol References:

ASTM = ASTM International

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

XEN MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Sample Summary

Client: Larson & Associates, Inc.
Project/Site: SD 13 SWD

Job ID: 880-14734-1
SDG: 21-0100-20

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-14734-1	S-3 15'	Solid	05/10/22 16:04	05/12/22 08:46
880-14734-2	S-3 20'	Solid	05/10/22 16:10	05/12/22 08:46

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Varson & Associates, Inc.

Environmental Consultants

507 N Warrenfield Ste 202
Midland TX 79701
432 687 0901

Data Reported to

DATE 5-12-22

PO#

PROJECT LOCATION OR NAME SD 13 SWD

LAI PROJECT # 21-0100-20

COLLECTOR JR

PAGE 1 OF 1

14734 CHAIN-OF-CUSTODY

No. 2238

5/20/2022

TRRP report?		S=SOIL W=WATER A=AIR		P=PAINT SL=SLUDGE OT=OTHER		PRESERVATION		ANALYSES		FIELD NOTES	
Field Sample ID	Lab #	Date	Time	Matrix	# of Containers	HCl	HNO ₃	H ₂ SO ₄ ☐ NaOH ☐	ICE	UNPRESERVED	FIELD NOTES
5-3 15'		5-10-22	16:34	S	1				X		
5-3 20'			16:10						X		
5-3 25'			16:20						X		
5-3 30'			16:20						X		
5-3 35'			16:30						X		
5-3 40'			16:30						X		
ANALYSES BTEX-MTBE ☐ 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 - METALS (RCRA) ☐ TCLP VOC ☐ TCLP - METALS (RCRA) ☐ TCLP VOC ☐ OTHER LIST ☐ TOTAL METALS (RCRA) ☐ DW 200 B ☐ TCLP ☐ LEAD - TOTAL ☐ TOX ☐ FLASHPOINT ☐ TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐ PH ☐ HEXAVALENT CHROMIUM ☐ PENTACHLORATE ☐ EXPLOSIVES ☐ CHLORIDES ☐ ANIONS ☐ ALKALINITY ☐											
HOLD Samples 5-3 25' 30' 35' 40'											



880-14734 Chain of Custody

TOTAL 6

RELINQUISHED BY (Signature)

DATE/TIME

RECEIVED BY (Signature)

TURN AROUND TIME

LABORATORY USE ONLY:

RECEIVING TEMP 31 THERM# -2

RELINQUISHED BY (Signature)

DATE/TIME

RECEIVED BY (Signature)

TURN AROUND TIME

LABORATORY USE ONLY:

RECEIVING TEMP 31 THERM# -2

RELINQUISHED BY (Signature)

DATE/TIME

RECEIVED BY (Signature)

TURN AROUND TIME

LABORATORY USE ONLY:

RECEIVING TEMP 31 THERM# -2

LABORATORY

XERO

RECEIVED BY (Signature)

TURN AROUND TIME

LABORATORY USE ONLY:

RECEIVING TEMP 31 THERM# -2

Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-14734-1

SDG Number: 21-0100-20

Login Number: 14734

List Number: 1

Creator: Rodriguez, Leticia

List Source: Eurofins Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

Appendix E
Photographs

Tracking Number: nAPP2109651124
Delineation Report and Remediation Plan
Salado Draw 13 SWD, Chevron USA, Inc.
Produced Water Release
June 6, 2022



Impacted area viewing southwest, May 20, 2021

Tracking Number: nAPP2109651124
Delineation Report and Remediation Plan
Salado Draw 13 SWD, Chevron USA, Inc.
Produced Water Release
June 6, 2022



Impacted area viewing northwest, May 20, 2021

Tracking Number: nAPP2109651124
Delineation Report and Remediation Plan
Salado Draw 13 SWD, Chevron USA, Inc.
Produced Water Release
June 6, 2022



Impacted area viewing southeast, May 20, 2021

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

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

CONDITIONS

Action 114489

CONDITIONS

Operator: CHEVRON U S A INC 6301 Deauville Blvd Midland, TX 79706	OGRID: 4323
	Action Number: 114489
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jnobui	Remediation Plan Approved.	6/7/2022