TECHNICAL MEMORANDUM

DATE February 23, 2022 **Reference No.** 20446521-009-TM-Rev1-1000

TO Mandalay Resources Corporation , Lupin Mines Incorporated

CC Karyn Lewis; Dionne Filiatrault

FROM Pamela Gascon, Arthur Cole and Ken Bocking **EMAIL** pgascon@golder.com

2020 AND 2021 CONTAMINATED SOILS REMEDIATION, 2021 FINANCIAL ASSURANCE RELEASE, LUPIN MINE, NU

1.0 INTRODUCTION

Golder Associates Ltd. (Golder) was engaged by Mandalay Resources Corporation (Mandalay) to provide regulatory support to Lupin Mine in 2021 as the project progresses towards final closure. The Mine is located on the west shore of Contwoyto Lake, Nunavut, approximately 300 km southeast of Kugluktuk and 80 km south of the Arctic Circle at a latitude of 65 degrees (°) 46 minutes (') N and longitude of 111°15' W (the Site; Figure 1).

The Mine included underground mining and production systems, and an ore handling system designed to manage up to 2,300 tonnes of ore per day. The Mine was a self-contained facility with on-site power generation and sewage facilities, and all materials and supplies were transported to the site by air or by seasonal ice road.

There were two principal clusters of buildings:

- a residential complex – consisting of accommodations, a kitchen, and recreation centre, and
- an industrial complex – consisting of the mine, mill, powerhouse, fuel tank farm, maintenance facility, warehouse, and offices

Ancillary features include a sewage lagoon immediately to the south of the industrial complex, a 1.9 km airstrip, and a Tailings Containment Area (TCA), which is located approximately 7 km south of the Mine.

The primary contaminants of concern at the Mine are arsenic (as a component of the solid phase waste rock/ore as arsenopyrite mineralization) and petroleum hydrocarbons (PHCs). Secondary contaminants have been identified (i.e., lead nitrate, cyanide); however, they are localized and coincide with the primary contaminants. The following summarizes the two primary sources of contaminated soils at the Mine:

- Approximately 1,000,000 m^3 of waste rock was historically placed on surface for the development of roadways, laydown yards, and building foundations (URS 2005). Historical analysis of waste rock identified elevated arsenic concentrations (i.e., median concentration of 1,140 mg/kg) exceeding the applicable criteria (Morrow 2006). The deposition/blending of this arsenic rich waste rock with surficial soils has resulted in shallow arsenic impairment across the developed portions of the Mine. Historical analysis has also confirmed

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that arsenic concentrations are naturally elevated at the Site. Background arsenic concentrations in soil range from 9 mg/kg to 189 mg/kg (Morrow 2006). Based on this dataset, a background total arsenic concentration was established at 179 mg/kg (Morrow 2006). Recent investigations have identified approximately 418,000 m^3 of arsenic impacted soil exceeding the background concentration within developed portions of the Mine (Golder 2017). A sub-set of this volume (approximately 16,300 m^3) has been classified as heavily arsenic impacted (i.e., arsenic concentrations greater than 4,000 mg/kg). This heavily arsenic impacted shallow (i.e., less than 2.0 m thick) soil is a result of placement of waste rock on the Mine and potentially the unintentional distribution of crushed ore as part of road construction.

- Approximately 35,200 m^3 of PHC impacted soil has been identified at 11 historical maintenance, fueling, and fuel storage locations across the Mine (Golder 2017a). Multiple above ground storage tanks were used in historical operations for fueling vehicles and machinery, heating buildings, and fuel storage. Historical spills have resulted in PHC impacts to surficial soils. Areas of PHC impacted surficial soils have been identified based upon historical investigations, including reviews of mine records relating to spills and storage.
- In addition, approximately 1,966 m^3 of PHC impacted soil was estimated at the Boneyard (Golder 2017a).

Mine closure activities commenced in 2018 in accordance with the approved Final Closure and Reclamation Plan[1] (FCRP). As outlined in the FCRP, PHC, heavily arsenic, lead nitrate, and cyanide impacted soil will be ex-situ remediated and disposed of underground.

The purpose of this technical memorandum is to provide documentation of the contaminated soils remediation program completed in 2020 and 2021. It is understood that this documentation is required by Mandalay to support the 2021 Financial Assurance Release.

2.0 AREAS OF ENVIRONMENTAL CONCERN

Eighteen areas of environmental concern (APECs) have been identified at the Mine based on previous investigations completed in 2006 and 2017 (Figures 1 and 2). A summary of the APECs including the contaminants of concern, associated test pit locations, and estimated volume is provided in the following table.

Table A: Areas of Potential Environmental Concern

Area of Potential Environmental Concern	COCs	Impacted Test Pit Location	Pre-Remediation Volume Estimate (m^3)
Heavily Arsenic Impacted Soil			
Crusher and Rebuild Area	Arsenic	TP05-56	16,700
Screening Plant Ramp	Arsenic	TP05-57	
Ore Loading Ramp	Arsenic	TP05-59	
Emergency Powerhouse	Arsenic	TP05-79	
North Storage Area	Arsenic	TP05-49	
		Subtotal	**16,700**

[1] Golder Associates Ltd. 2018. Lupin Mine Site, Final Closure and Reclamation Plan. Prepared for Lupin Mines Incorporated (A wholly owned indirect subsidiary of Mandalay Resources Corporation). Submitted to Nunavut Water Board. Dated July 2018. Report No. 1789942_003_Rpt_Rev0.

Table A: Areas of Potential Environmental Concern

Area of Potential Environmental Concern	COCs	Impacted Test Pit Location	Pre-Remediation Volume Estimate (m^3)
PHC Impacted Soil			
Satellite Tank Farm (STF) and Powerhouse	PHCs	TP17-26	7,625
		TP05-29	
		TP05-33	
		TP05-77	
		TP17-22	
		TP05-32	
Mill and Office	PHCs	TP05-23	8,200
		TP17-27	
		TP05-80	
		TP05-25	
	PHCs and Pb	TP05-26	
Main Tank Farm (MTF) Loaders	PHCs	TP05-36	1,600
MTF Bedding Sand		-	1,800
Emergency Powerhouse	PHCs	TP05-58	800
South Burn Pit	PHCs	TP17-32	4,725
		TP17-35	
		TP05-12	
	PHCs and Pb	TP17-34	
		TP17-33	
		TP05-14	
RTL Shop	PHCs	TP17-13	7,200
		TP17-14	
		TP17-17	
North Burn Pit and Incinerator	PHCs	TP17-01	1,600
Former Airport	PHCs	TP05-53	800
Former Ball Field	PHCs	TP17-15	50
Cold Storage #1	PHCs	-	800
		Subtotal	**35,200**
Boneyard	PHCs	TP 17-32	**1,966**
Cyanide Impacted Soil			
Recovery Plant (soil beneath storage tanks)	Cyanide	-	200
Cyanide Storage Area	Cyanide	-	200
		Subtotal	**400**
		Total	**54,266**

During the 2021 field season, the following additional area of concern was identified:

- An area of heavily arsenic impacted soil (referred to as the Arsenic Area) was identified in the vicinity of TP05-80 and TP05-56. This area was remediated during the 2021 field season.

3.0 SCOPE OF WORK AND FIELD METHODOLOGY

The 2020 and 2021 scope of work for contaminated soil remediation at the Mine included the following tasks:

- **Health, Security, Safety, and Environment (HSSE)**. The Prime Contractor for the Mine is JDS Energy & Mining Inc. (JDS). Prior to the commencement of field activities, Golder field staff reviewed the overarching HSSE plan for the Site. In addition, Golder prepared task-specific Work Method Statements (WMS) which included specific health and safety requirements to be implemented during the work and established procedures to be followed by Golder staff in the event of an emergency. The document was reviewed and signed by all Golder field staff prior to commencing the work. Golder also attended the tailgate meeting hosted by JDS at the beginning of each work shift.

- **Ground Disturbance Procedures and Utility Clearances**. Before commencing ground disturbance activities, Golder and JDS reviewed the excavation area to determine the locations of any aboveground utilities in the work area. Underground utilities were not present at the Mine.

- **Contaminated Soil Remediation and Field Screening.** Remedial activities were completed by JDS and supervised by Golder field personnel. Excavations completed in 2020 and 2021 are summarized in Table 1 and presented in Figures 2 and 3.

  Field screening activities included the collection of soil samples from the walls and base of each excavation on a maximum 10 m by 10 m grid pattern. Soil samples were logged by Golder field technicians and placed into a labelled polypropylene bag for subsequent field screening. Depending on the contaminant of concern, field screening consisted of the following: (i) combustible headspace gas concentration measured with an RKI Eagle 2 (methane exclusion) calibrated to 15% lower explosive limit hexane (PHC impacted soil); and/or (ii) estimated total metal concentrations using a Niton portable XRF analyzer (arsenic, lead, and cyanide impacted soil). Based on the results of the field screening activities, further excavation was completed as required.

- **Confirmatory Soil Sampling**. Selection of soil samples for confirmatory analysis was based on visual (i.e., staining, discolouration, or free product), and olfactory evidence and/or field screening results. Soil samples intended for PHC analysis were collected using TerraCore samplers and placed in laboratory-provided, precleaned containers with methanol preservative. Soil samples required for metals analysis were placed in laboratory-provided polypropylene bags. Soil samples were immediately placed in a cooler with ice for transport and chemical analysis.

  Confirmatory soil samples were collected from the walls and base of each excavation on a maximum 10 m by 10 m grid pattern. Samples were submitted to ALS Environmental (ALS) in Yellowknife, NWT under 1-day turnaround time for laboratory analysis of BTEX and PHC fractions F1 to F4 or total metals. Upon receipt of analytical results, further excavation was completed as required.

- **Contaminated Soil Disposal**. Transportation and disposal of contaminated soil in the crown pillar was completed by JDS. The excavated soil was temporarily stockpiled west of the crown pillar prior to underground disposal. Approximately 4,500 m^3 of contaminated soil will be temporarily stockpiled during the winter of 2021/2022. A berm, approximately 0.5 m in height, was constructed around the stockpiled material to control run-off and direct any surface water flow into the crown pillar.

- **Surveying**. The lateral and vertical extents of the excavations were surveyed by Stantec on-Site upon completion.
- **Quality Assurance Program**. Golder's quality assurance program for environmental investigations was implemented to ensure that analytical data obtained by the investigation were valid and representative. The quality assurance program included the following measures:
  - The use of standard operating procedures for all field investigation activities.
  - The collection of field duplicate samples at a minimum frequency of one duplicate for every ten samples.
  - Soil samples were handled and stored in accordance with the sample collection and preservation requirements of the Canadian Council of Ministers of the Environment (CCME) Guidance Manual for Environmental Site Characterization in Support of Environmental and Human Health Risk Assessment, Volume 4 Analytical Methods (CCME, 2016).
  - Dedicated sampling equipment and clean disposable Nitrile™ gloves were used at each sampling location to prevent cross-contamination. All non-dedicated sampling equipment was decontaminated between sampling locations. Sampling equipment in contact with soil was cleaned by mechanical means; washed with a laboratory-grade detergent (e.g., phosphate-free AlcoNox) and thoroughly rinsed with analyte-free water.
  - Detailed field records documenting the methods and circumstances of collection for each field sample were prepared at the time of sample collection. Each sample was assigned a unique sample identification number recorded in the field notes, along with the date and time of sample collection, the sample matrix, and the requested analyses.
  - The submission of samples to the analytical laboratory was in accordance with standard chain of custody procedures. Laboratory analyses were completed by an analytical laboratory accredited in accordance with the International Standard ISO/IEC 17025 *General Requirement for the Competence of Testing and Calibration Laboratories*, dated May 5, 2005 (as amended), and accredited in accordance with the applicable standards for proficiency testing developed by the Canadian Association for Laboratory Accreditation.

4.0 REGULATORY FRAMEWORK

In accordance with the approved FCRP (Golder 2020), PHC and cyanide contaminated soils which are ex-situ remediated will comply with industrial land use criteria for coarse-grained soil specified within the Nunavut Environmental Guideline for Contaminated Site Remediation (GN 2009). Heavily arsenic impacted soil will be remediated to the screening value of 4,000 mg/kg total arsenic.

5.0 REMEDIAL EXCAVATION RESULTS

Seventeen excavations were completed in 2020 and 2021 (Figure 2) and an additional nine excavations will be completed in 2022 (Figure 3). A summary of the excavations is provided in Table 1 and the analytical results for completed excavations are summarized in Tables 2 through 18. The final lateral extents for completed

excavations are also presented on Figures 3 to 15. Field communications, provided by Golder and Mandalay, documenting the completed excavations are also provided in Attachment B.

Results of the field screening and confirmatory soil sampling programs for the 17 completed excavations indicate that the lateral and vertical extents were below the applicable remedial guidelines with the exception of the following:

- Excavation 04 (TP05-79). The base sample (EX-04-25) exceeded the screening value of 4,000 mg/kg; however, further excavation was limited due to permafrost. As the extent of the residual heavily arsenic impacted material is anticipated to be limited and the excavation is located within the footprint of the “waste rock dome” which will be capped with at least 1 m of granular fill, this excavation was considered completed.
- Excavation 19 (TP05-58). Soil sample EX19-21-30 exceeded the applied guidelines for PHC fraction F1 and F2. This sample was collected from the southern extent adjacent to the concrete slab of the Emergency Powerhouse. Impacted soil is anticipated to extend under the concrete slab which will remain in place. As this excavation is located within the footprint of the “waste rock dome” and will be capped with at least 1 m of granular fill, this excavation was considered complete.
- Excavation 21 (TP05-36). The lateral extent of this excavation was limited due to the MTF located along the western boundary. As the MTF is still in use, field screening and confirmatory soil sampling could not be completed along the western lateral extent. As excavation of the bedding sand within the MTF and any encountered contaminated soil beneath will be completed in 2022, Excavation 21 is considered complete.

Based on the previous environmental investigations, approximately 400 m^3 of cyanide impacted soil was estimated within the Recovery Plant and in the vicinity cyanide storage. Both of these areas were developed with a concrete slab which will remain in place. Since the concrete slabs will be located within the footprint of the “waste rock dome” and capped with at least 1 m of granular fill, removal of the cyanide impacted soil will not be required.

6.0 QUALITY ASSURANCE AND QUALITY CONTROL

A Quality Assurance/Quality Control (QA/QC) program was implemented during the sampling programs to confirm that the sampling and analytical data is interpretable, meaningful, and reproducible. This program involved using QA/QC measures in the collection (field program) of the soil samples. The sampling methods used in the collection of the soil samples are consistent with industry standards as described in Section 3.

In addition, Golder also reviewed the summary of laboratory QA/QC data provided by ALS for surrogate spikes, matrix spikes and method blanks. The laboratory QA/QC data proved satisfactory and met all the QA/QC requirements, except for the following:

- Surrogate recovery exceedances were identified for two laboratory certificates of analysis (L2617215 and L2617242). These exceedances may represent a potential high bias; however, as all results were below the applied guidelines, there will not be a material effect on the interpretation of these results. As such, the data can be considered reliable.
- Eight laboratory certificates of analysis were identified as having an average temperature exceeding 10 degrees Celsius (°C) which may increase the analytical uncertainty and the data may be considered

suspect. All samples were packed on ice and placed in a sealed cooler; however, due to the remote location of the Mine, sample transportation typically required over 24 hours. Analytical results for these samples were generally below laboratory detection limits. Although these samples may be considered suspect, given that the results are significantly below the applied guidelines, Golder anticipates that this will have minimal impact on the interpretation of the results.

The laboratory certificates of analysis are provided in Attachment A. Golder's Data Quality Review (DQR) checklists for each laboratory certificate are provided in Attachment C.

7.0 CONCLUSIONS

Approximately 34,805 m^3 of contaminated soil has been excavated from 23 excavations in 2020 and 2021. Remedial activities have been completed at 18 excavations which include a combination of heavily arsenic impacted soil and PHC impacted soil. A summary of noteworthy findings is provided below.

- Approximately 1,635 m^3 of heavily arsenic impacted soil was remediated. Excavations were completed in the vicinity of TP05-56, TP05-57, TP05-59, TP05-79, TP05-48, TP05-80, and TP05-56. Remedial activities for heavily arsenic impacted soil are complete and no further remedial activities are required.
- Approximately 1,200 m^3 of PHC impacted soil was remediated in the Boneyard. Excavations were completed in the vicinity of TP17-32. Remedial activities for the Boneyard are complete and no further remedial activities are required.
- Aside from the Boneyard, approximately 31,204 m^3 of PHC impacted soil was remediated and approximately 26,704 m^3 was disposed in the Crown Pillar. (As discussed above, about 4,500 m^3 of contaminated soil has been stockpiled adjacent to the crown pillar and will be disposed in the crown pillar in 2022.)
- Based on field observations and remedial activities completed to date, the revised remedial volume estimate for PHC contaminated soils is 47,270 m^3 (comprised of 1,200 m^3 for the Boneyard and 46,070 m^3 for the remainder). As such, approximately 69% of PHC contaminated soils have been remediated and 59% has been disposed into the crown pillar
- Since the cleanup of heavily arsenic impacted soil has been completed, the associated financial assurance release based on the RECLAIM estimate is 16,700 m^3 @ \$2.22/m^3 = \$37,704.
- Since the cleanup of the Boneyard has been completed, the associated financial assurance release based on the RECLAIM estimate is 1,966 m^3 @ \$2.74/m^3 = \$5,387.
- Since 59% of the other PHC impacted soils have been disposed of into the crown pillar, the associated financial assurance release based on the RECLAIM estimate is 59% of 35,200 m^3 or 20,768 m^3 @ \$1.95/m^3 = \$40,498.

8.0 CLOSURE

We trust the above information meets your requirements. If you have any questions or require additional information, please contact the undersigned.

Golder Associates Ltd.

Pamela Gascon BSc
Environmental Scientist

Arthur Cole PEng
Principal - Senior Geotechnical Engineer

REGISTERED PROFESSIONAL ENGINEER
K. A. BOCKING
LICENSEE
NWT

Ken Bocking, P.Eng
Principal

PERMIT TO PRACTICE
GOLDER ASSOCIATES LTD.
Signature
Date 24 Feb 2022
PERMIT NUMBER: P 049
NT/NU Association of Professional Engineers and Geoscientists

PG/AC/KAB/hp

Attachments
Figure 1 – Site Plan
Figure 2 – Completed Excavations
Figure 3 – Excavations In-Progress
Figures 4 to 16 – Remedial Excavation Extents
Table 1 – Remedial Excavation Summary
Tables 2 to 18 – Soil Analytical Results
Attachment A – Laboratory Certificates of Analysis
Attachment B - Field Communications
Attachment C – Data Quality Review

https://golderassociates.sharepoint.com/sites/138836/project files/6 deliverables/02 issued/20446521-009-tm-rev1-1000-2021_tm contaminated soils remediation/20446521-009-tm-rev1-1000-2020 2021 css remediation 23feb_22.docx

REFERENCES

Golder (Golder Associates Ltd.). 2017. Updated Phase I and II Environmental Site Assessment, Lupin Mine, Nunavut; October 2017.

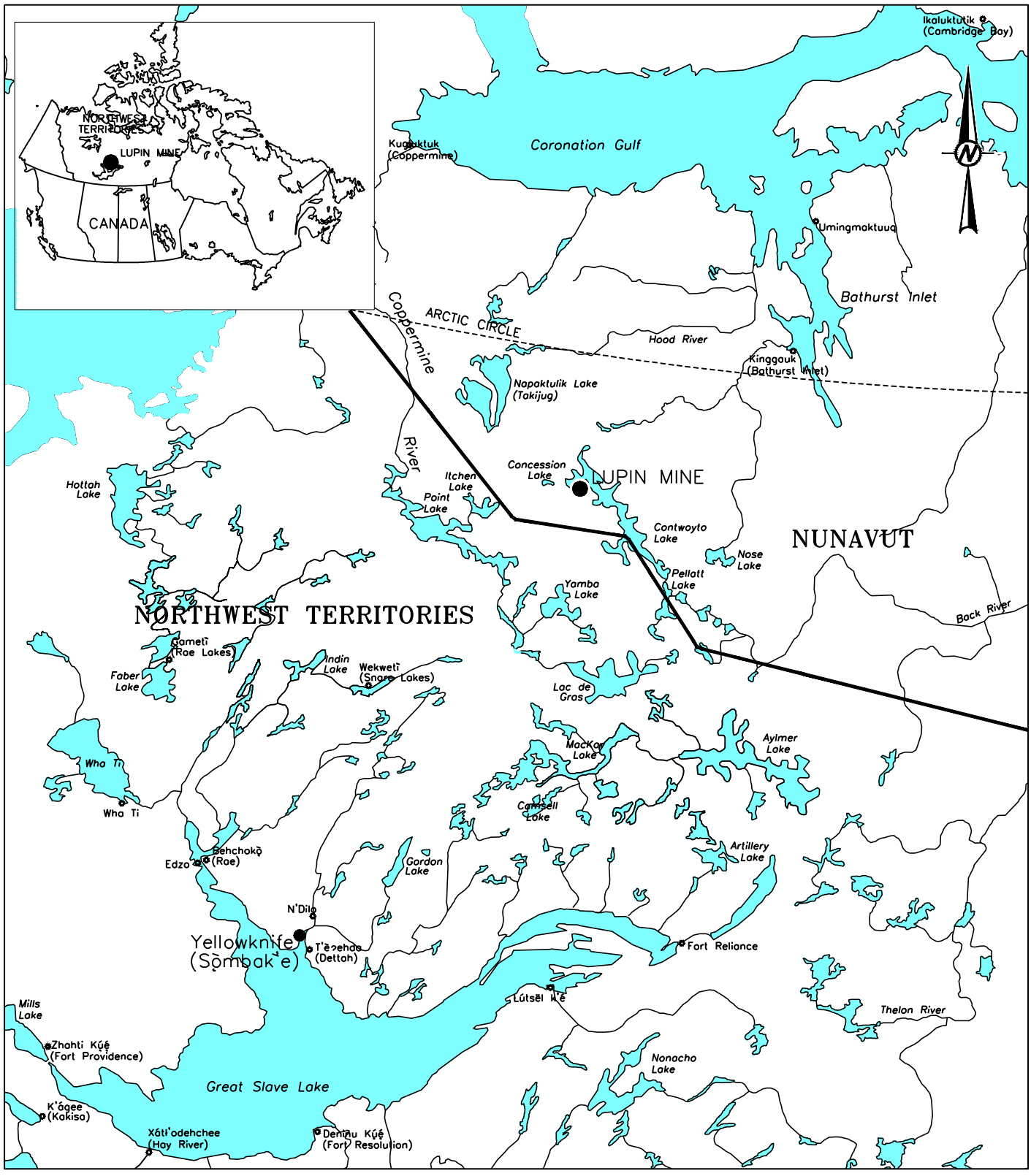
Golder. 2020. Final Closure and Reclamation Plan, REV1 (August 2020). August 2020.

GN (Government of Nunavut, Department of Environment). 2009. Guideline for Contaminated Site Remediation.

Morrow (Morrow Environmental). 2006. Environmental Site Assessment, Lupin Mine Site, Nunavut Territory; January 2006.

URS (URS Corporation). 2005. ARD/ML Assessment of Waste Rock at Lupin Mine; February 2005.

FIGURES



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PROJECT
LUPIN MINE 2020 AND 2021 CONTAMINATED SOIL REMEDIAL PROGRAM

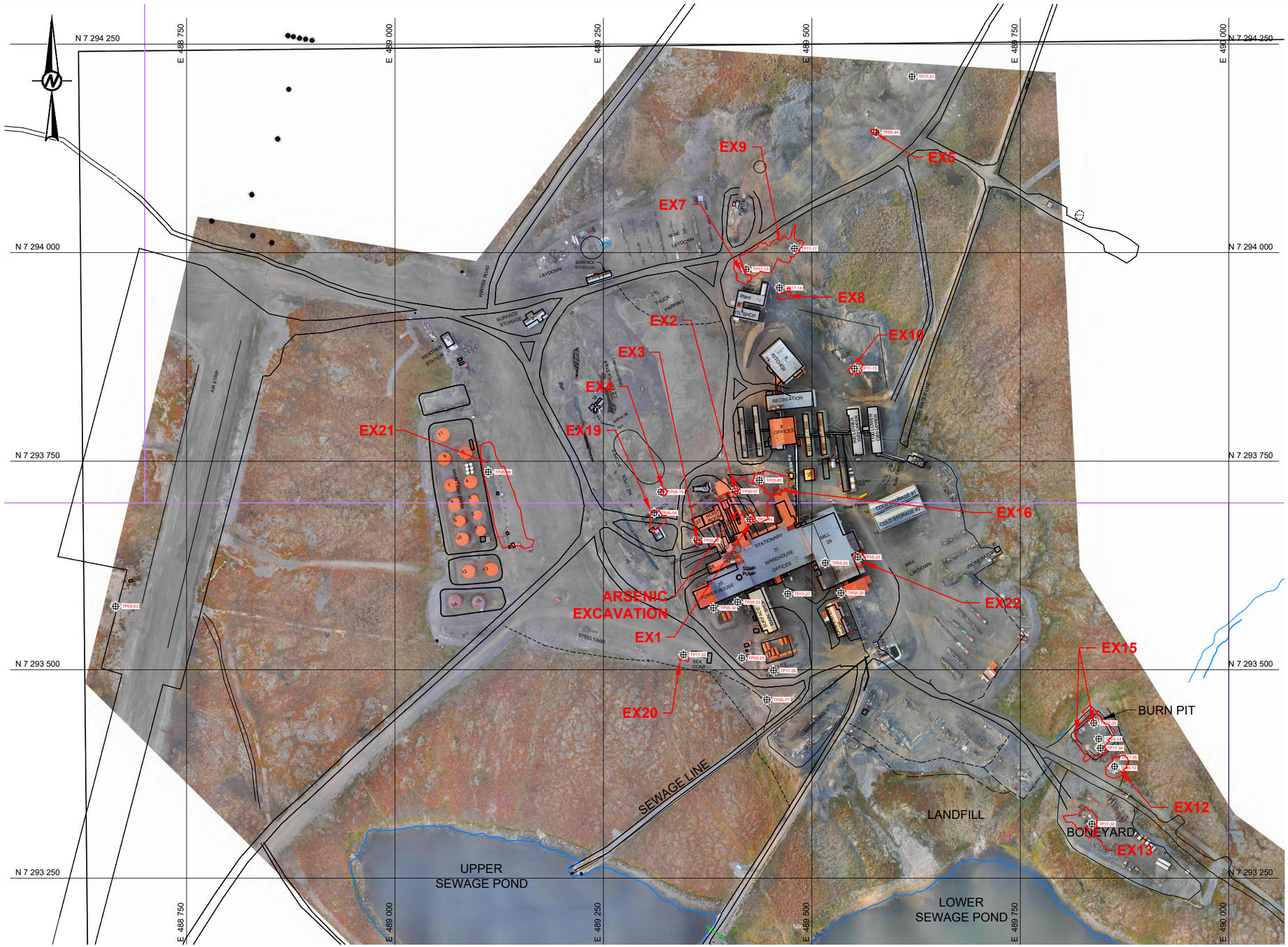
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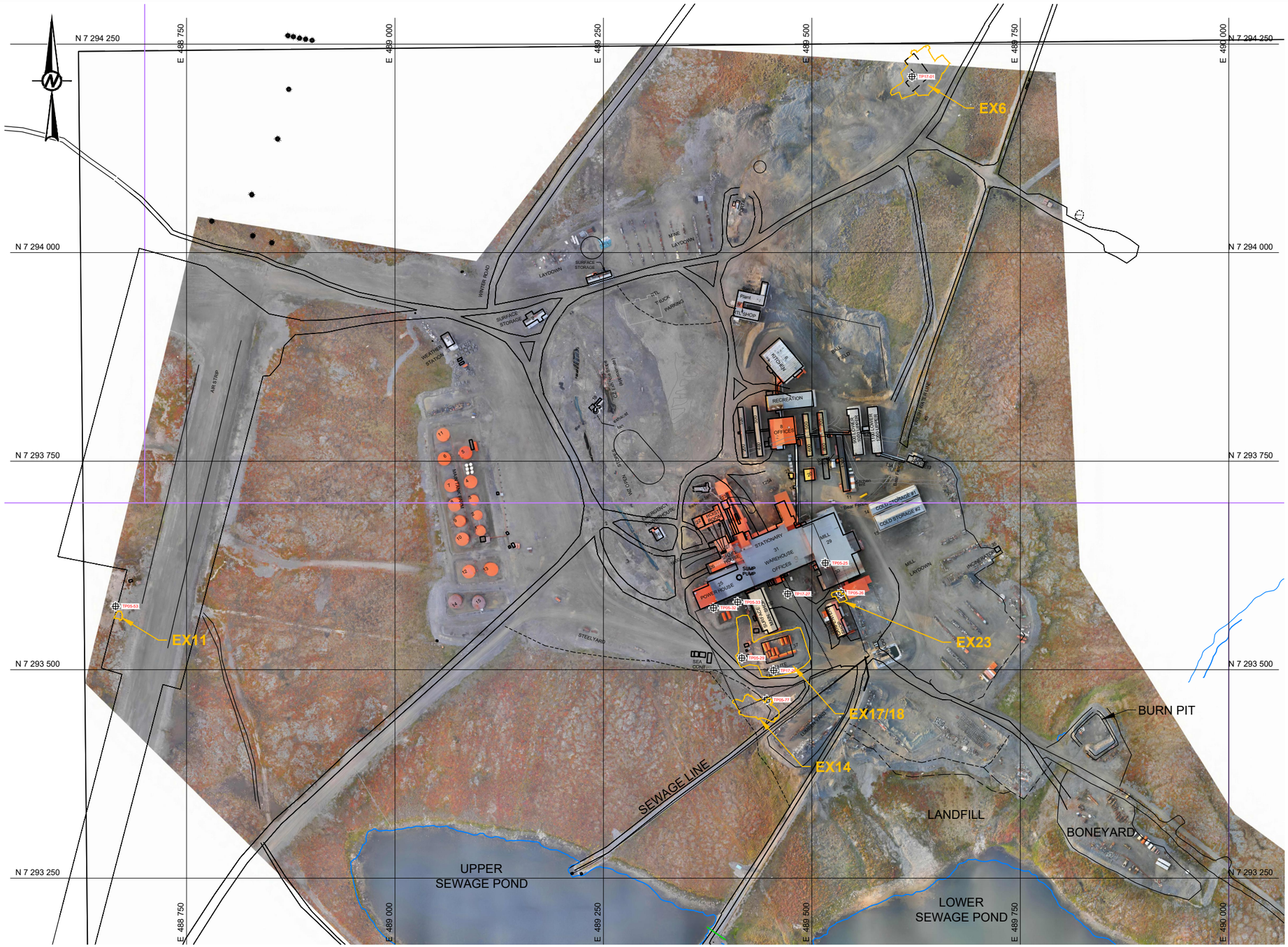
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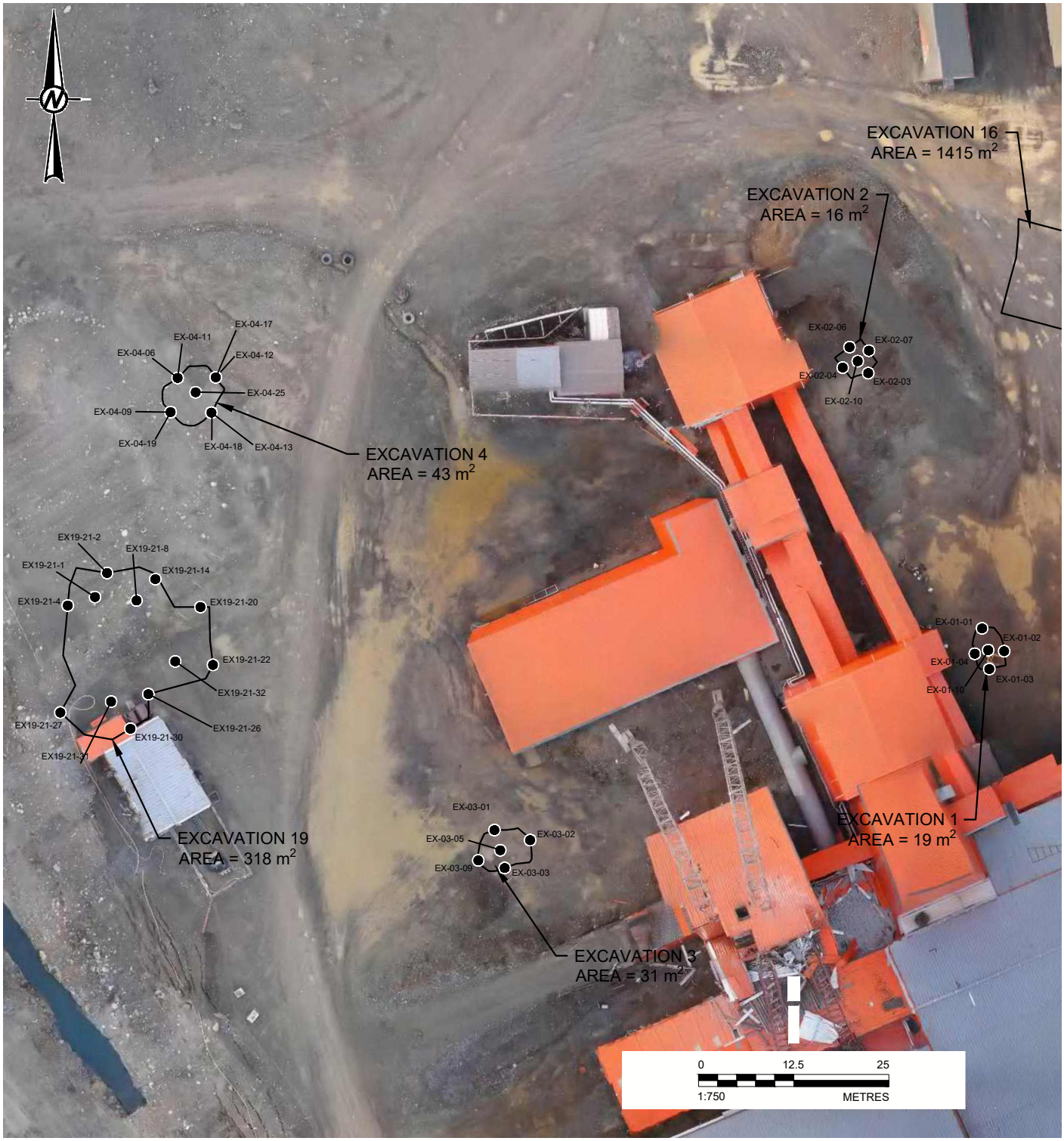
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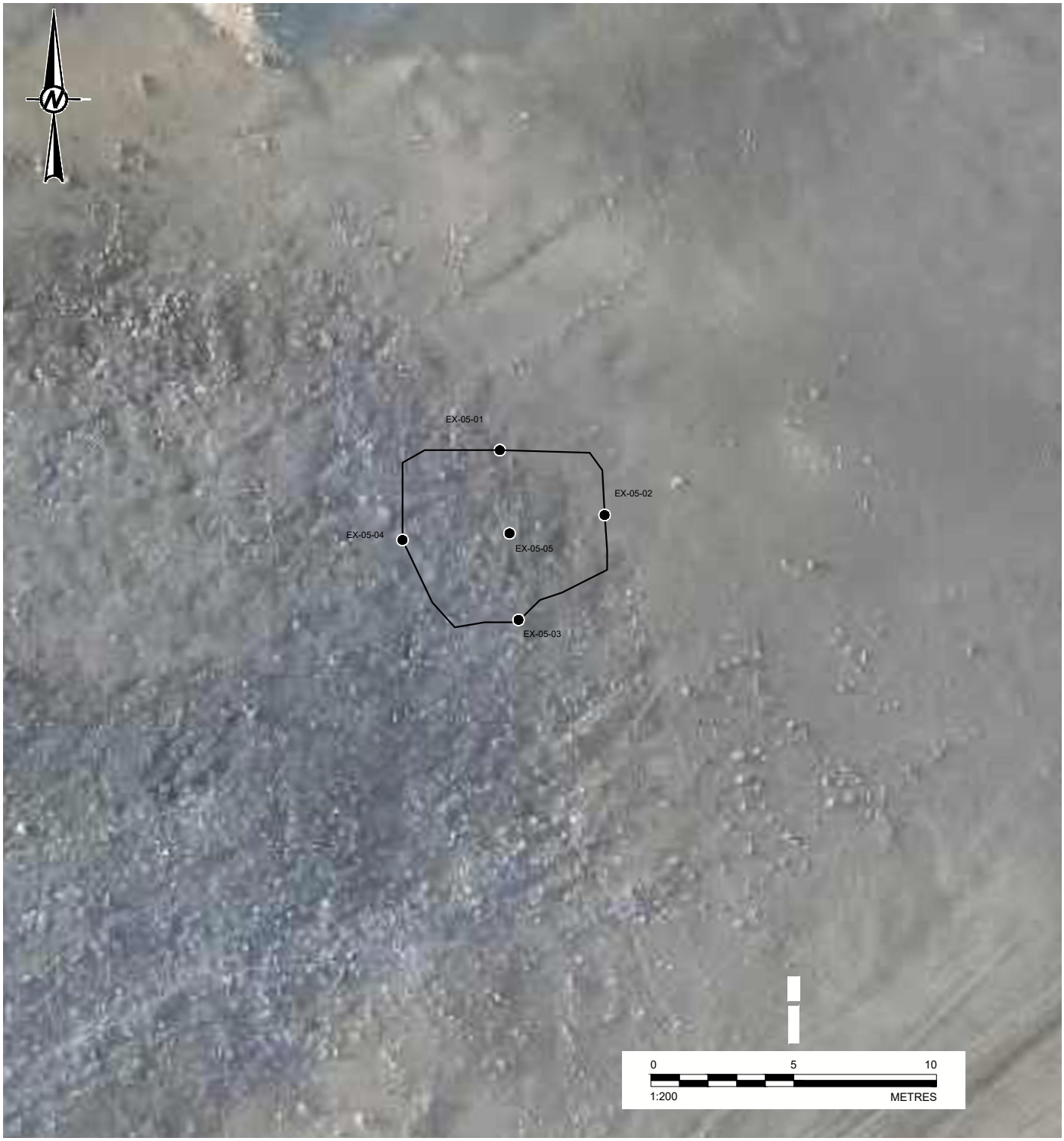
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EXCAVATION 1, 2, 3, 4 AND 19

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- SAMPLE LOCATION
- EXCAVATION COMPLETED
- 2020 EXCAVATION

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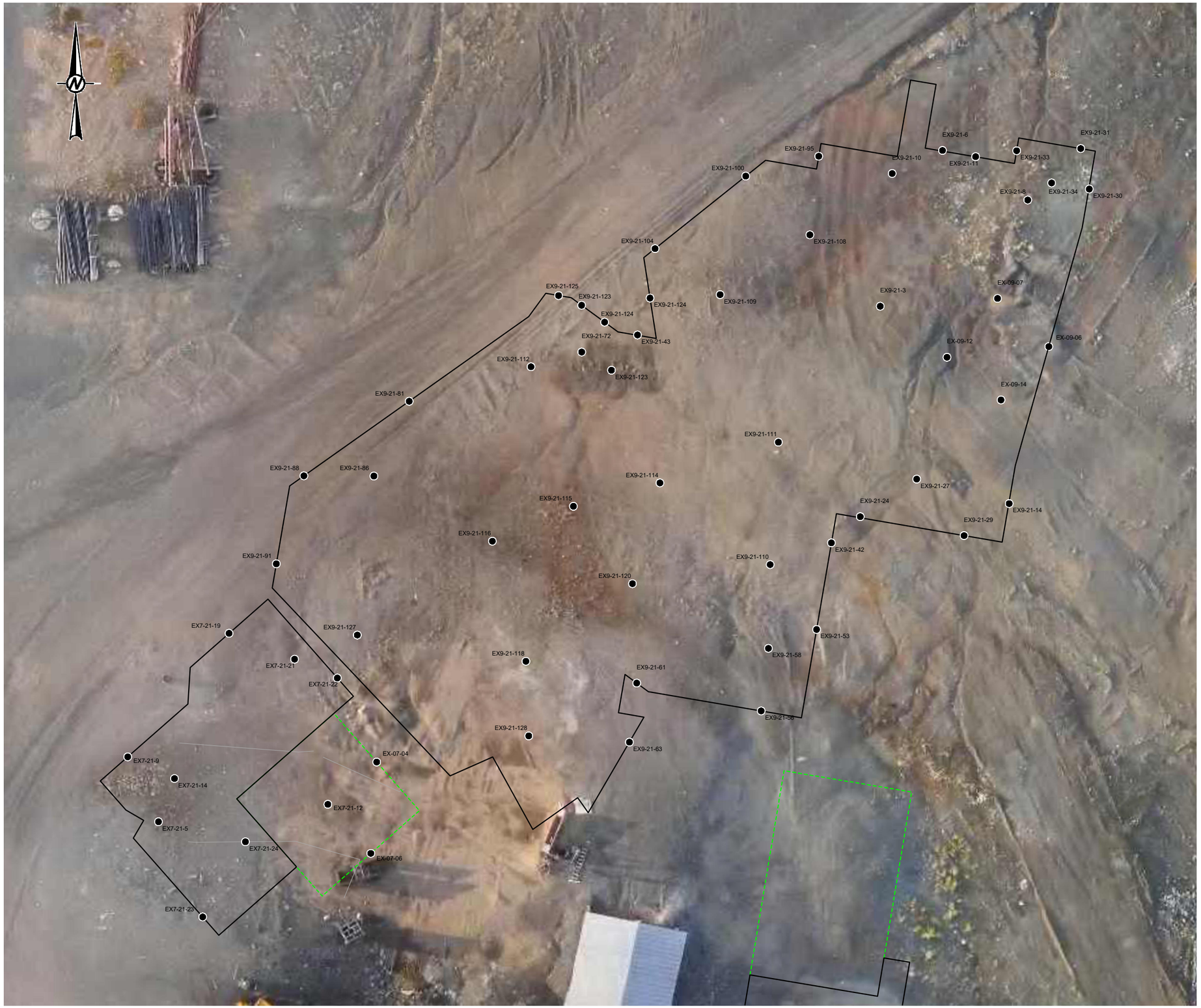
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EXCAVATION 5

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- SAMPLE LOCATION
- EXCAVATION COMPLETED
- 2020 EXCAVATION

REFERENCE(S)

1. BASE PLAN DATA PROVIDED BY NORTHWEST CORP., FILE NO. 180125 draft_Figure 6 Surface Projection of Underground Mine Workings.dwg, RECEIVED JANUARY 1, 2018.
2. AERIAL IMAGERY PROVIDED BY STANTEC IN SEPTEMBER 2021.
3. COORDINATES ARE IN METRES TO UTM NAD83, NRCS ZONE 12N.

0 5 10
1:300 METRES

CLIENT
MANDALAY RESOURCES CORPORATION

PROJECT
LUPIN MINE 2020 AND 2021 CONTAMINATED SOIL REMEDIAL PROGRAM

TITLE
EXCAVATIONS 7 AND 9

CONSULTANT
GOLDER
MEMBER OF WSP

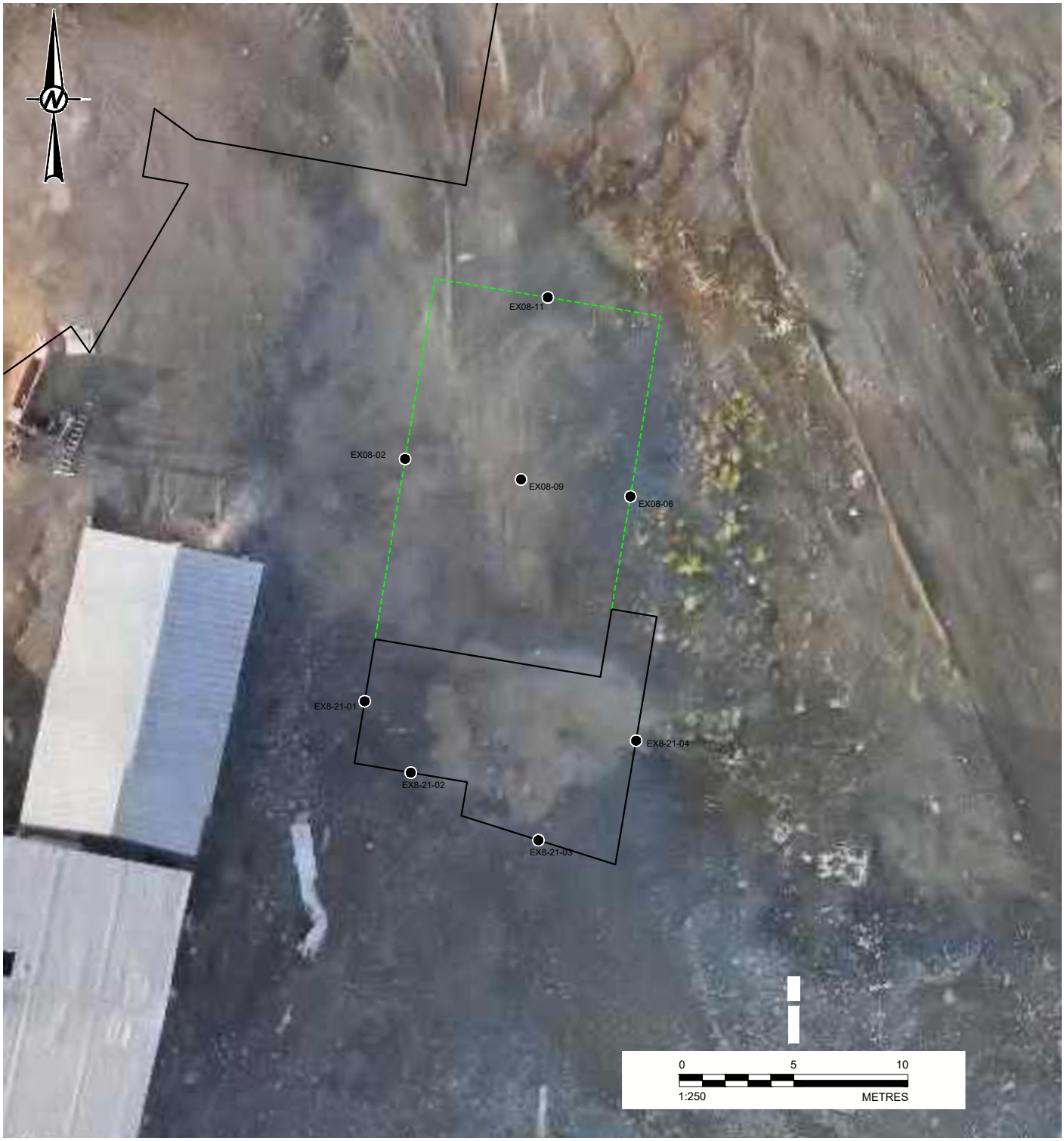
YYYY-MM-DD	2021-11-30
DESIGNED	JT
PREPARED	RFM
REVIEWED	AC
APPROVED	KB

PROJECT NO.	CONTROL	REV.	FIGURE
20446521	4000-CD-0001	0	6

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

0 25 mm

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LEGEND

- SAMPLE LOCATION
- EXCAVATION COMPLETED
- 2020 EXCAVATION

REFERENCE(S)

1. BASE PLAN DATA PROVIDED BY NORTHWEST CORP., FILE NO. 180125 draft_Figure 6 Surface Projection of Underground Mine Workings.dwg, RECEIVED JANUARY 1, 2018.
2. AERIAL IMAGERY PROVIDED BY STANTEC IN SEPTEMBER 2021.
3. COORDINATES ARE IN METRES TO UTM NAD83, NRCS ZONE 12N.

CLIENT
MANDALAY RESOURCES CORPORATION

PROJECT
LUPIN MINE 2020 AND 2021 CONTAMINATED SOIL REMEDIAL PROGRAM

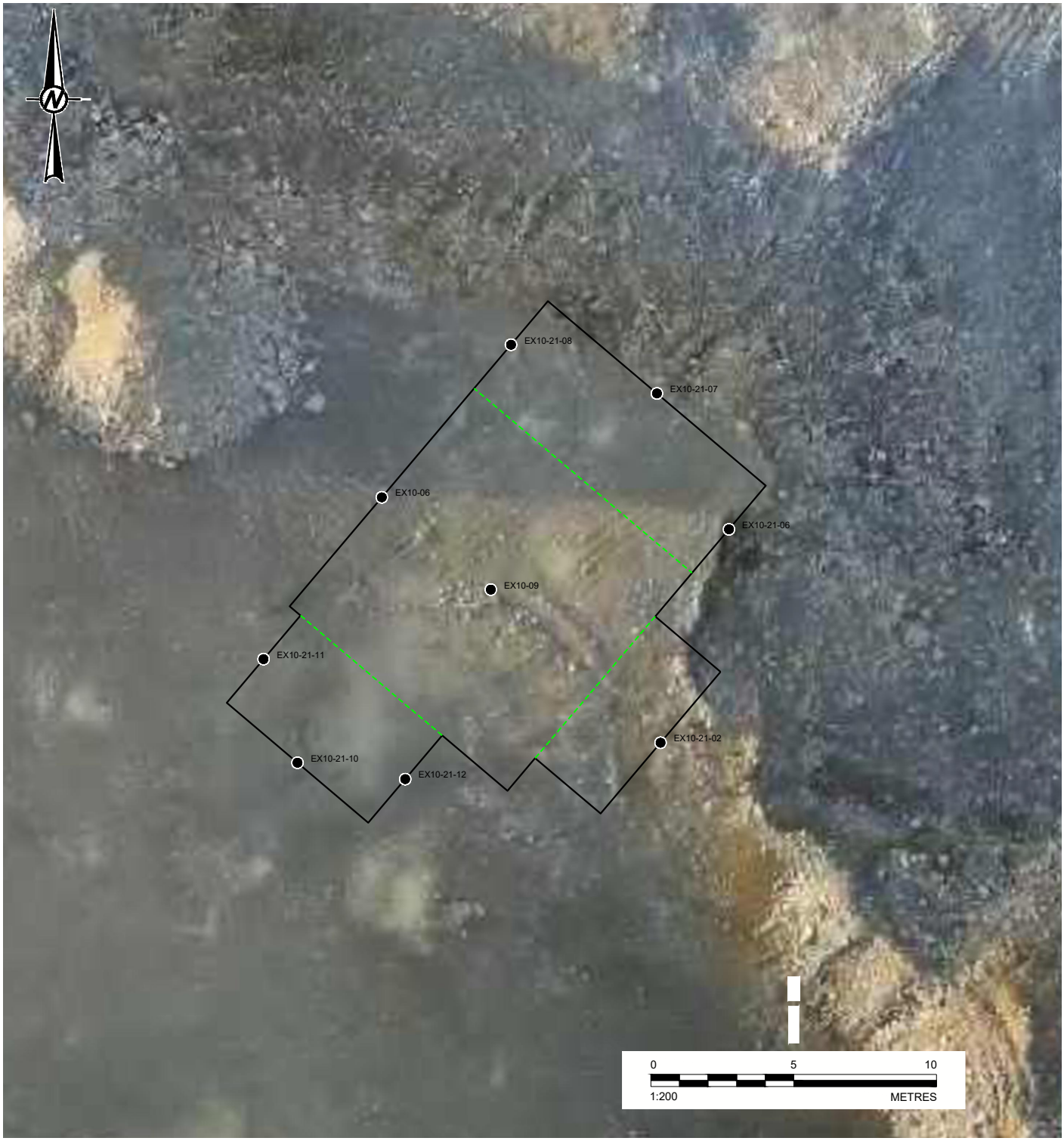
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2021-11-30
DESIGNED	JT
PREPARED	RFM
REVIEWED	AC
APPROVED	KB

TITLE
EXCAVATION 8

PROJECT NO.	CONTROL	REV.	FIGURE
20446521	4000-CD-0001	0	7

Last Edited By: bmcdonald Date: 2021-11-03 Time:4:47:07 PM | Printed By: bmcdonald Date: 2021-11-30 Time:2:09:19 PM
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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A
0 25 mm



LEGEND

- SAMPLE LOCATION
- EXCAVATION COMPLETED
- 2020 EXCAVATION

REFERENCE(S)

1. BASE PLAN DATA PROVIDED BY NORTHWEST CORP., FILE NO. 180125 draft_Figure 6 Surface Projection of Underground Mine Workings.dwg, RECEIVED JANUARY 1, 2018.
2. AERIAL IMAGERY PROVIDED BY STANTEC IN SEPTEMBER 2021.
3. COORDINATES ARE IN METRES TO UTM NAD83, NRCS ZONE 12N.

CLIENT
MANDALAY RESOURCES CORPORATION

PROJECT
LUPIN MINE 2020 AND 2021 CONTAMINATED SOIL REMEDIAL PROGRAM

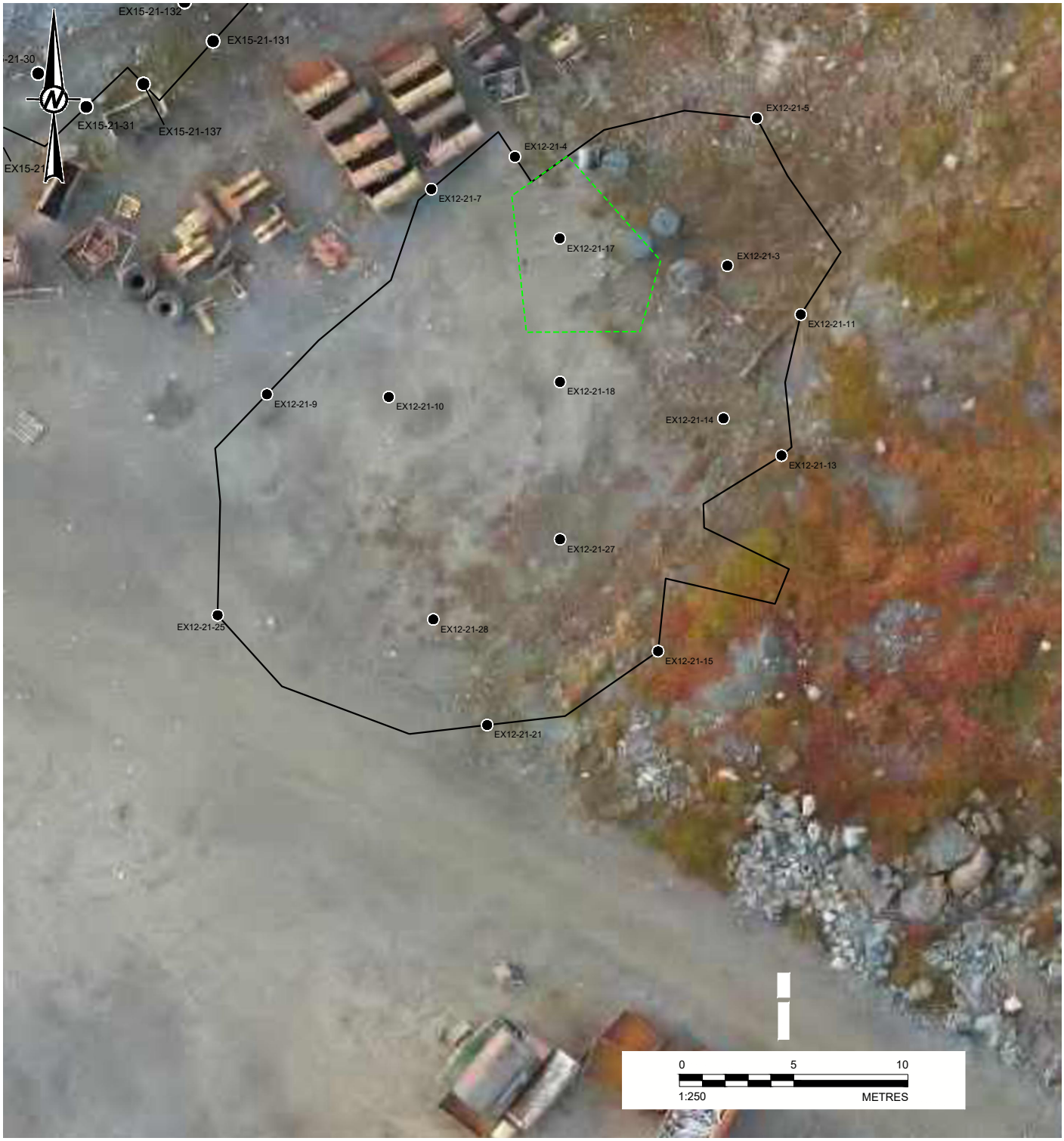
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2021-11-30
DESIGNED	JT
PREPARED	RFM
REVIEWED	AC
APPROVED	KB

TITLE
EXCAVATION 10

PROJECT NO.	CONTROL	REV.	FIGURE
20446521	4000-CD-0001	0	8

Last Edited By: bmcdonald Date: 2021-11-03 Time:4:47:07 PM | Printed By: bmcdonald Date: 2021-11-30 Time:2:10:13 PM
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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A
25 mm
0



LEGEND

- SAMPLE LOCATION
- EXCAVATION COMPLETED
- 2020 EXCAVATION

REFERENCE(S)

1. BASE PLAN DATA PROVIDED BY NORTHWEST CORP., FILE NO. 180125 draft_Figure 6 Surface Projection of Underground Mine Workings.dwg, RECEIVED JANUARY 1, 2018.
2. AERIAL IMAGERY PROVIDED BY STANTEC IN SEPTEMBER 2021.
3. COORDINATES ARE IN METRES TO UTM NAD83, NRCS ZONE 12N.
4. SITE SURVEY FOR EXCAVATION 12 HAS BEEN SHIFTED NORTH AND WEST TO ALIGN WITH THE ROAD

CLIENT
MANDALAY RESOURCES CORPORATION

PROJECT
LUPIN MINE 2020 AND 2021 CONTAMINATED SOIL REMEDIAL PROGRAM

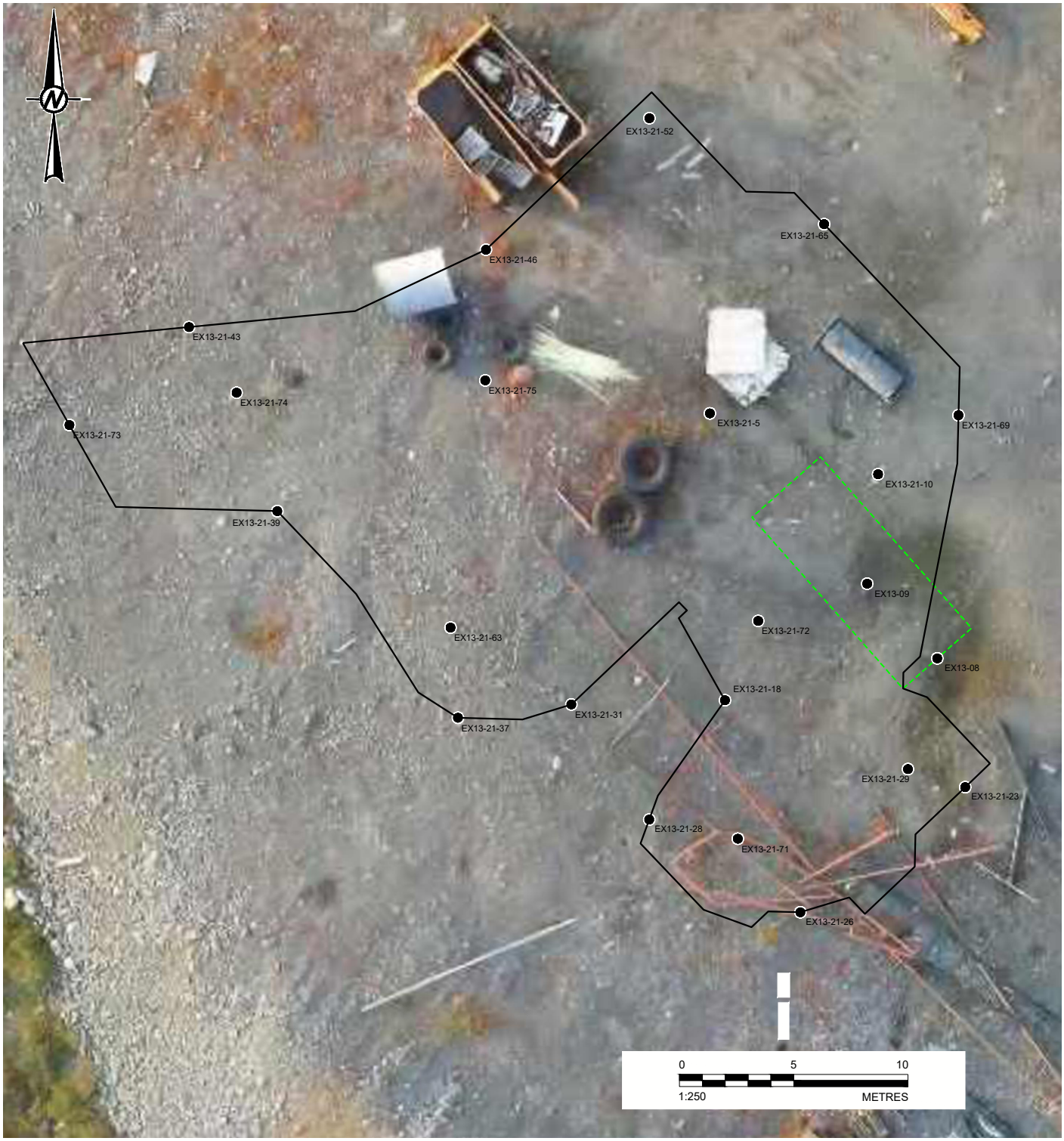
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2021-11-30
DESIGNED	JT
PREPARED	RFM
REVIEWED	AC
APPROVED	KB

TITLE
EXCAVATION 12

PROJECT NO.	CONTROL	REV.	FIGURE
20446521	4000-CD-0001	0	9

Last Edited By: bmcdonald Date: 2021-11-03 Time:4:47:07 PM | Printed By: bmcdonald Date: 2021-11-30 Time:2:10:53 PM
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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A
0 25 mm



LEGEND

- SAMPLE LOCATION
- EXCAVATION COMPLETED
- 2020 EXCAVATION

REFERENCE(S)

1. BASE PLAN DATA PROVIDED BY NORTHWEST CORP., FILE NO. 180125 draft_Figure 6 Surface Projection of Underground Mine Workings.dwg, RECEIVED JANUARY 1, 2018.
2. AERIAL IMAGERY PROVIDED BY STANTEC IN SEPTEMBER 2021.
3. COORDINATES ARE IN METRES TO UTM NAD83, NRCS ZONE 12N.

CLIENT
MANDALAY RESOURCES CORPORATION

PROJECT
LUPIN MINE 2020 AND 2021 CONTAMINATED SOIL REMEDIAL PROGRAM

CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2021-11-30
DESIGNED	JT
PREPARED	RFM
REVIEWED	AC
APPROVED	KB

TITLE
EXCAVATION 13

PROJECT NO.	CONTROL	REV.	FIGURE
20446521	4000-CD-0001	0	10

Last Edited By: bmcdonald Date: 2021-11-03 Time:4:47:07 PM | Printed By: bmcdonald Date: 2021-11-30 Time:2:11:25 PM
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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A
0 25 mm



LEGEND

- SAMPLE LOCATION
- EXCAVATION COMPLETED
- 2020 EXCAVATION

REFERENCE(S)

1. BASE PLAN DATA PROVIDED BY NORTHWEST CORP., FILE NO. 180125 draft_Figure 6 Surface Projection of Underground Mine Workings.dwg, RECEIVED JANUARY 1, 2018.
2. AERIAL IMAGERY PROVIDED BY STANTEC IN SEPTEMBER 2021.
3. COORDINATES ARE IN METRES TO UTM NAD83, NRCS ZONE 12N.

0 5 10
1:300 METRES

CLIENT
MANDALAY RESOURCES CORPORATION

PROJECT
LUPIN MINE 2020 AND 2021 CONTAMINATED SOIL REMEDIAL PROGRAM

TITLE
EXCAVATION 15

CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2021-11-30
DESIGNED	JT
PREPARED	RFM
REVIEWED	AC
APPROVED	KB

PROJECT NO.	CONTROL	REV.	FIGURE
20446521	4000-CD-0001	0	11

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

25 mm

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LEGEND

- SAMPLE LOCATION
- EXCAVATION COMPLETED
- 2020 EXCAVATION

REFERENCE(S)

1. BASE PLAN DATA PROVIDED BY NORTHWEST CORP., FILE NO. 180125 draft_Figure 6 Surface Projection of Underground Mine Workings.dwg, RECEIVED JANUARY 1, 2018.
2. AERIAL IMAGERY PROVIDED BY STANTEC IN SEPTEMBER 2021.
3. COORDINATES ARE IN METRES TO UTM NAD83, NRCS ZONE 12N.

0 5 10
1:200 METRES

CLIENT
MANDALAY RESOURCES CORPORATION

PROJECT
LUPIN MINE 2020 AND 2021 CONTAMINATED SOIL REMEDIAL PROGRAM

TITLE
EXCAVATION 16

CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2021-11-30
DESIGNED	JT
PREPARED	RFM
REVIEWED	AC
APPROVED	KB

PROJECT NO.	CONTROL	REV.	FIGURE
20446521	4000-CD-0001	0	12

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

25 mm

0

Path: \\golder.gds\gal\calgary\CAL\MCAD\mandalayresourcescorporation\nunavut_lupinmine\99_projects\20446521\02_PRODUCTION\4000\DWG\ | File Name: 20446521-4000-CD-0001.dwg | Last Edited By: bmcdonald Date: 2021-11-03 Time:4:47:07 PM | Printed By: bmcdonald Date: 2021-11-30 Time:2:12:54 PM



LEGEND

- SAMPLE LOCATION
- EXCAVATION COMPLETED
- 2020 EXCAVATION

REFERENCE(S)

1. BASE PLAN DATA PROVIDED BY NORTHWEST CORP., FILE NO. 180125 draft_Figure 6 Surface Projection of Underground Mine Workings.dwg, RECEIVED JANUARY 1, 2018.
2. AERIAL IMAGERY PROVIDED BY STANTEC IN SEPTEMBER 2021.
3. COORDINATES ARE IN METRES TO UTM NAD83, NRCS ZONE 12N.

CLIENT
MANDALAY RESOURCES CORPORATION

CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2021-11-30
DESIGNED	JT
PREPARED	RFM
REVIEWED	AC
APPROVED	KB

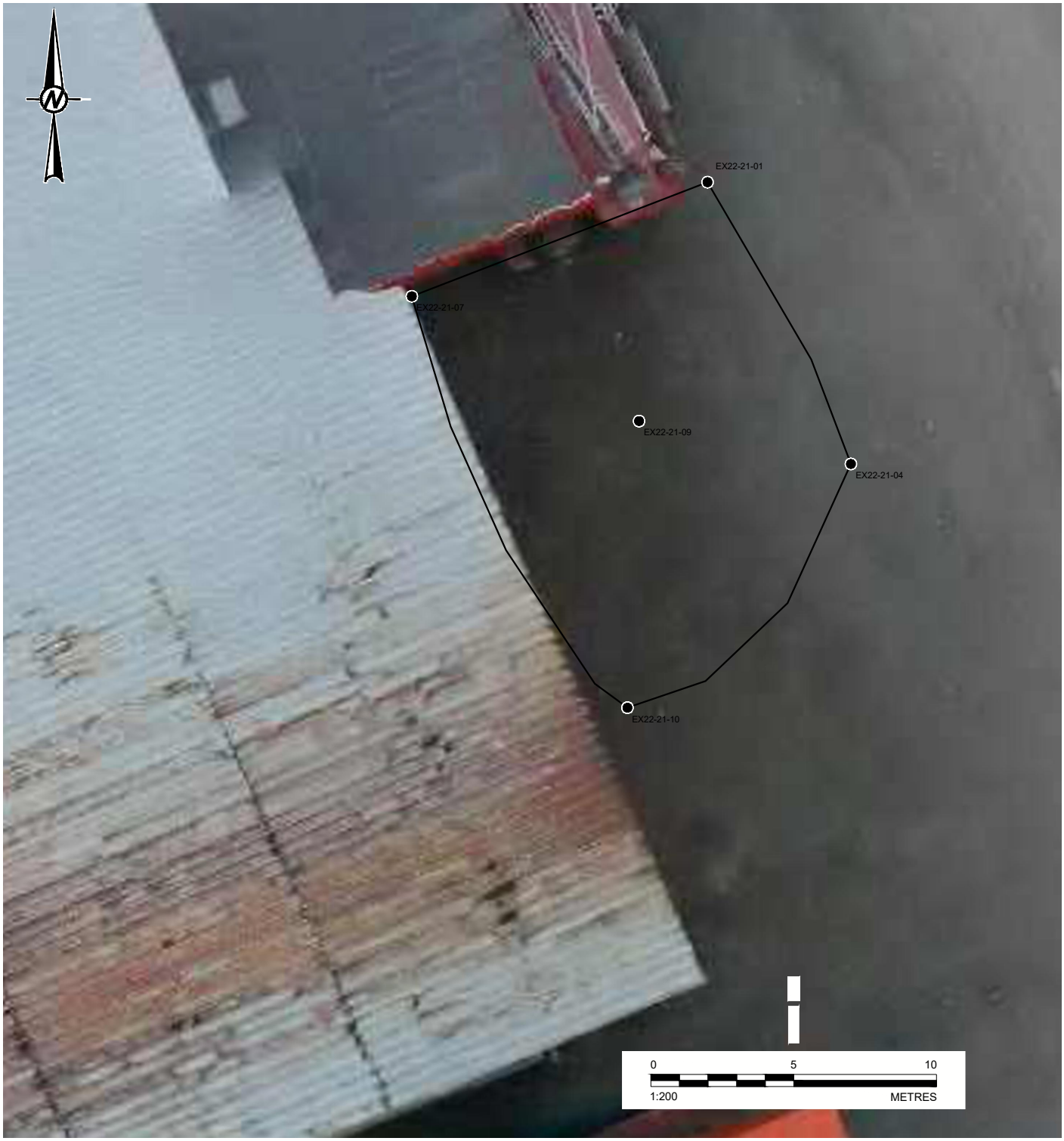
PROJECT
LUPIN MINE 2020 AND 2021 CONTAMINATED SOIL REMEDIAL PROGRAM

TITLE
EXCAVATION 21

PROJECT NO.	CONTROL	REV.	FIGURE
20446521	4000-CD-0001	0	14

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

0 25 mm



LEGEND

- SAMPLE LOCATION
- EXCAVATION COMPLETED
- 2020 EXCAVATION

REFERENCE(S)

1. BASE PLAN DATA PROVIDED BY NORTHWEST CORP., FILE NO. 180125 draft_Figure 6 Surface Projection of Underground Mine Workings.dwg, RECEIVED JANUARY 1, 2018.
2. AERIAL IMAGERY PROVIDED BY STANTEC IN SEPTEMBER 2021.
3. COORDINATES ARE IN METRES TO UTM NAD83, NRCS ZONE 12N.

CLIENT
MANDALAY RESOURCES CORPORATION

PROJECT
LUPIN MINE 2020 AND 2021 CONTAMINATED SOIL REMEDIAL PROGRAM

CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2021-11-30
DESIGNED	JT
PREPARED	RFM
REVIEWED	AC
APPROVED	KB

TITLE
EXCAVATION 22

PROJECT NO.	CONTROL	REV.	FIGURE
20446521	4000-CD-0001	0	15

Last Edited By: bmcdonald Date: 2021-11-03 Time:4:47:07 PM | Printed By: bmcdonald Date: 2021-11-30 Time:2:14:47 PM
Path: \\golder.gds\gal\calgary\CAL\MCAD\mandalayresourcescorporate\nunavut_lupinmine\09_projects\20446521\02_PRODUCTION\4000\DWG\ | File Name: 20446521-4000-CD-0001.dwg
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A
25 mm
0



LEGEND

- SAMPLE LOCATION
- SURFACE SAMPLE LOCATION
- EXCAVATION COMPLETED
- 2020 EXCAVATION

REFERENCE(S)

1. BASE PLAN DATA PROVIDED BY NORTHWEST CORP., FILE NO. 180125 draft_Figure 6 Surface Projection of Underground Mine Workings.dwg, RECEIVED JANUARY 1, 2018.
2. AERIAL IMAGERY PROVIDED BY STANTEC IN SEPTEMBER 2021.
3. COORDINATES ARE IN METRES TO UTM NAD83, NRCS ZONE 12N.

0 5 10
1:300 METRES

CLIENT
MANDALAY RESOURCES CORPORATION

PROJECT
LUPIN MINE 2020 AND 2021 CONTAMINATED SOIL REMEDIAL PROGRAM

TITLE
ARSENIC EXCAVATION

CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2021-11-30
DESIGNED	JT
PREPARED	RFM
REVIEWED	AC
APPROVED	KB

PROJECT NO.	CONTROL	REV.	FIGURE
20446521	4000-CD-0001	0	16

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

0 25 mm

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TABLES

Table 1: Remedial Excavation Summary
2020 and 2021 Contaminated Soils Remediation
Lupin Mine, NU

Test Pit	APEC	Excavation ID	CoC	Completion Date	Final Excavation Extents		No. Field Screening Samples	No. Confirmatory Soil Samples	RECLAIM Volume Estimate (m^3)	Revised Remedial Volume Estimate (m^3)	2020/2021 Excavated Volume (m^3)	Comments
					Area (m^2)	Depth (m)[1]						
Heavily Arsenic Impacted Soil												
TP05-56	Crusher and Rebuild Area	EX01	As	10-Aug-20	19	1.6	10	5	16,700	15	15	Refer to: Tables 2 to 6; Figures 4 and 5; and FC-GOL-011
TP05-57	Screening Plant Ramp	EX02	As	10-Aug-20	16	1.7	10	5		10	10	
TP05-59	Ore Loading Ramp	EX03	As	10-Aug-20	31	1.1	9	5		15	15	
TP05-79	Emergency Powerhouse	EX04	As	10-Aug-20	43	2.7	25	9		30	30	
TP05-49	North Storage Area	EX05	As	10-Aug-20	37	1.0	9	5		15	15	
-	Arsenic Area	AA	As	05-Oct-21	2,065	1.5	134	57	-	1,550	1,550	Refer to: Table 19; Figure 16; and FC-GOL-036
								Subtotal	**16,700**	**1,635**	**1,635**	
Petroleum Hydrocarbon Impacted Soil												
TP17-22	STF and Power House	EX20	PHCs	13-Sep-21	81	2.8	14	9	7,625	220	220	Refer to: Table 16; Figure 13; and FC-GOL-029
TP17-26		EX17	PHCs	In progress	-	-	-	-		21,300	6,450	
TP05-29		EX18	PHCs	In progress	-	-	-	-				
TP05-33			PHCs		-	-	-	-				
TP05-32			PHCs		-	-	-	-				
TP17-27		-	PHCs	Not started	-	-	-	-			-	
TP05-77		EX14	PHCs	In progress	-	-	-	-			1,050	
TP05-23	Mill and Office	EX22	PHCs	31-Aug-21	176	2.7	10	5	8,200	250	250	Refer to: Table 18; Figure 15; and FC-GOL-028
TP05-80		EX16	PHCs	10-Aug-21	1,415	2.6	96	30		2,200	2,200	Refer to: Table 14; Figure 12; and FC-GOL-025
TP05-26		EX23	PHCs, Pb	In progress	-	-	-	-		200	200	
TP05-25		-	PHCs	Not started	-	-	-	-		800	-	
TP05-36	Main Tank Farm Loaders	EX21	PHCs	13-Sep-21	3,629	4.3	131	49	1,600	8,300	8,300	Refer to: Table 17; Figure 14; and FC-GOL-031
-	Main Tank Farm Bedding Sand	-	PHCs	Not started	-	-	-	-	1,800	1,800	-	
TP05-58	Emergency Powerhouse	EX19	PHCs	13-Sep-21	318	1.6	32	13	800	400	400	Refer to: Table 15; Figure 4; and FC-GOL-031
TP17-32	Boneyard	EX13	PHCs	03-Aug-21	738	2.2	84	23	1,966	1,200	1,200	Refer to: Table 12; Figure 10; and FC-GOL-024
TP17-33	South Burn Pit	EX15	PHCs, Pb	20-Sep-21	1,778	2.8	140	89	4,725	4,300	4,300	Refer to: Table 13; Figure 11; and FC-GOL-033
TP17-34												
TP05-14												
TP17-35		EX12	PHCs	28-Jul-21	485	2.2	28	16		750	750	Refer to: Table 11; Figure 9; and FC-GOL-022
TP05-12												
TP17-13	RTL Shop	EX07	PHCs	03-Aug-21	229	2.5	31	11	7,200	450	450	Refer to: Table 7; Figure 6; and FC-GOL-024
TP17-14		EX08	PHCs	21-Jul-21	86	1.8	31	8		450	450	Refer to: Table 8; Figure 7; and FC-GOL-021
TP17-17		EX09	PHCs	13-Sep-21	1,831	2.7	141	8		3,100	3,100	Refer to: Table 9; Figure 6; and FC-GOL-029
TP17-15	Former Ball Field	EX10	PHCs	28-Jul-21	186	1.5	22	10	50	400	400	Refer to: Table 10; Figure 8; and FC-GOL-022
TP17-42	Cold Storage #1	-	PHCs	Not started	-	-	-	-	800			
TP17-01	North Burn Pit & Incinerator	EX06	PHCs	In progress	-	-	-	-	1,600	350	3,400	
TP05-53	Former Airport Fuelling Area	EX11	PHCs	In progress	-	-	-	-	800	800	50	
								Subtotal	**37,166**	**47,270**	**33,170**	
								Total	**53,866**	**48,905**	**34,805**	

Notes:
1 Represents maximum depth
APEC - Area of Potential Environmental Concern
CoC - Contaminant of Concern
STF - Satellite Tank Farm
As - Arsenic
PHCs - Petroleum Hydrocarbons
Pb - Lead
m bgs - metres below ground surface
m^2 - square meters
m3 - cubic meters
CN- Cyanide
All provided volumes are approximate

Table 2: Soil Analytical Results - Excavation 01
2020 and 2021 Contaminated Soils Remedation
Lupin Mine, NU

			Sample Name	EX-01-01	EX-01-02	EX-01-03	EX-01-04	EX-01-10
			Sample Date	2020-08-01	2020-08-01	2020-08-01	2020-08-01	2020-08-01
			Depth (m bgs)	0.5	0.5	0.5	0.5	1.6
			Field Screening (ppm)	323	9	41	20	6
Parameter	**Guidelines[1]**	**RDL**	**Unit**					
Arsenic	4000	0.10	mg/kg	290	14	43	47	6

Notes

[1] Heavily arsenic impacted soil will be remediated to the screening value of 4,000 mg/kg.

m bgs - metres below ground surface

ppm - parts per million

RDL - Reportable Detection Limit

mg/kg - milligram per kilograms

Bold - Exceeds targeted guidelines

Table 3: Soil Analytical Results - Excavation 02
2020 and 2021 Contaminated Soils Remedation
Lupin Mine, NU

Sample Name				EX-02-03	EX-02-04	EX-02-06	EX-02-07	EX-02-10
Sample Date				2020-08-01	2020-08-01	2020-08-01	2020-08-01	2020-08-01
Depth (m bgs)				0.5	0.5	1.0	1.0	1.7
Field Screening (ppm)				32	213	778	440	86
Parameter	**Guidelines[1]**	**RDL**	**Unit**					
Arsenic	4000	0.1	mg/kg	194	406	754	677	55

Notes

[1] Heavily arsenic impacted soil will be remediated to the screening value of 4,000 mg/kg.

m bgs - metres below ground surface

ppm - parts per million

RDL - Reportable Detection Limit

mg/kg - milligram per kilograms

Bold - Exceeds targeted guidelines

Table 4: Soil Analytical Results - Excavation 03
2020 and 2021 Contaminated Soils Remedation
Lupin Mine, NU

Sample Name				EX-03-01	EX-03-02	EX-03-03	EX-03-05	EX-03-09
Sample Date				2020-08-01	2020-08-01	2020-08-01	2020-08-01	2020-08-01
Depth (m bgs)				0.5	0.5	0.5	1.1	1.1
Field Screening (ppm)				234	448	38	7	162
Parameter	**Guidelines[1]**	**RDL**	**Unit**					
Arsenic	4000	0.10	mg/kg	160	419	11	16	307

Notes

[1] Heavily arsenic impacted soil will be remediated to the screening value of 4,000 mg/kg.
m bgs - metres below ground surface
ppm - parts per million
RDL - Reportable Detection Limit
mg/kg - Milligram per kilograms
Bold - Exceeds targeted guidelines

Table 5: Soil Analytical Results - Excavation 04
2020 and 2021 Contaminated Soils Remedation
Lupin Mine, NU

Sample Name				EX-04-06	EX-04-09	EX-04-11	EX-04-12	EX-04-13	EX-04-17	EX-04-18	EX-04-19	EX-04-25
Sample Date				2020-08-02	2020-08-02	2020-08-02	2020-08-02	2020-08-02	2020-08-02	2020-08-02	2020-08-02	2020-08-02
Depth (m bgs)				1.0	1.0	1.5	1.5	1.5	2.0	2.0	2.0	2.7
Field Screening (ppm)				1,048	719	953	1,060	1,282	2,200	1,246	893	6,075
Parameter	**Guidelines[1]**	**RDL**	**Unit**									
Arsenic	4,000	0.1	mg/kg	3,280	1,310	1,230	2,970	2,020	2,570	1,660	2,920	**11,600**

Notes
[1] Heavily arsenic impacted soil will be remediated to the screening value of 4,000 mg/kg.
m bgs - metres below ground surface
ppm - parts per million
RDL - Reportable Detection Limit
mg/kg - Milligram per kilograms
Bold - Exceeds targeted guidelines

Table 6: Soil Analytical Results - Excavation 05
2020 and 2021 Contaminated Soils Remediation
Lupin Mine, NU

Sample Name				EX-05-01	EX-05-02	EX-05-03	EX-05-04	EX-05-05
Sample Date				2020-08-02	2020-08-02	2020-08-02	2020-08-02	2020-08-02
Depth (m bgs)				0.5	0.5	0.5	0.5	1.0
Field Screening (ppm)				1,401	1,293	1,116	1,966	1,171
Parameter	**Guidelines[1]**	**RDL**	**Unit**					
Arsenic	4,000	0.1	mg/kg	2,980	3,510	2,210	2,490	2,050

Notes

[1] Heavily arsenic impacted soil will be remediated to the screening value of 4,000 mg/kg.

m bgs - metres below ground surface

ppm - parts per million

RDL - Reportable Detection Limit

mg/kg - Milligram per kilograms

Bold - Exceeds targeted guidelines

Table 7: Soil Analytical Results - Excavation 07
2020 and 2021 Contaminated Soils Remedation
Lupin Mine, NU

			Sample Name	EX-07-06	EX-07-04	EX7-21-5	EX7-21-9	EX7-21-12	EX7-21-14	EX7-21-19	EX7-21-21	EX7-21-22	EX7-21-23	EX7-21-24
			Sample Date	2020-08-17	2020-08-09	2021-07-20	2021-07-20	2021-07-20	2021-07-20	2021-07-20	2021-07-20	2021-07-20	2021-07-26	2021-07-26
			Depth (m bgs)	1.5	1.4	2.0	2.0	2.5	2.2	1.5	1.9	1.6	2.0	2.5
			Field Screening (ppm)	75	85	10	10	5	10	5	0	5	0	0
Parameter	**Guidelines[1]**	**RDL**	**Unit**											
Benzene	0.03	0.005	mg/kg	<0.0050	<0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0078	< 0.0050
Toluene	0.37	0.05	mg/kg	0.239	0.072	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.022	< 0.014
Ethylbenzene	0.082	0.01	mg/kg	<0.010	<0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.059	0.033	< 0.010	< 0.023	< 0.015
Xylenes	11	0.1	mg/kg	<0.10	<0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.14	< 0.10	< 0.10	< 0.11	< 0.071
F1-BTEX	240	10	mg/kg	<10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 16	< 10
F2 (C10-C16)	260	20	mg/kg	28	51	< 20	< 20	< 20	< 20	< 20	< 20	< 20	73	< 25
F3 (C16-C34)	1700	20	mg/kg	97	61	< 20	< 20	< 20	< 20	< 20	< 20	< 20	63	< 50
F4 (C34-C50)	3300	20	mg/kg	<20	<20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 50	< 50

Notes

[1] Nunavut Environmental Guideline for Contaminated Soil Remediation for coarse-grained soil and industrial land use (2009)

m bgs - metres below ground surface

ppm - parts per million

RDL - Reportable Detection Limit

mg/kg - Milligram per kilograms

Bold - Exceeds targeted guidelines

< Indicates parameter was below laboratory equipment detection limit.

Table 8: Soil Analytical Results - Excavation 08
2020 and 2021 Contaminated Soils Remedation
Lupin Mine, NU

			Sample Name	EX-08-02	EX-08-06	EX-08-09	EX-08-11	EX8-21-1	EX8-21-2	EX8-21-3	EX8-21-4
			Sample Date	2020-08-10	2020-08-10	2020-08-10	2020-08-16	2021-07-12	2021-07-12	2021-07-12	2021-07-12
			Depth (m bgs)	1.5	1.5	1.8	1.5	0.9	1.1	0.9	0.9
			Field Screening (ppm)	5	10	10	10	5	10	10	35
Parameter	**Guidelines[1]**	**RDL**	**Unit**								
Benzene	0.03	0.005	mg/kg	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Toluene	0.37	0.05	mg/kg	0.2	0.115	0.129	0.184	< 0.050	< 0.050	< 0.050	< 0.050
Ethylbenzene	0.082	0.01	mg/kg	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.014
Xylenes, Total	11	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
F1 (C6-C10) - BTEX	240	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
F2 (C10-C16)	260	20	mg/kg	< 20	< 20	< 20	< 20	31	< 20	< 20	78
F3 (C16-C34)	1,700	20	mg/kg	< 20	< 20	< 20	32	< 20	< 20	< 20	96
F4 (C34-C50)	3,300	20	mg/kg	< 20	< 20	< 20	< 20	< 20	< 20	< 20	27

Notes

[1] Nunavut Environmental Guideline for Contaminated Soil Remediation for coarse-grained soil and industrial land use (2009)
m bgs - metres below ground surface
ppm - parts per million
RDL - Reportable Detection Limit
mg/kg - Milligram per kilograms
Bold - Exceeds targeted guidelines
< Indicates parameter was below laboratory equipment detection limit.

Table 9: Soil Analytical Results - Excavation 09
2020 and 2021 Contaminated Soils Remedation
Lupin Mine, NU

			Sample Name	EX-09-06	EX-09-07	EX-09-12	EX-09-14	EX9-21-3	EX9-21-6	EX9-21-8	EX9-21-10	EX9-21-11	EX9-21-14	EX9-21-24	EX9-21-27	EX9-21-29	EX9-21-30	EX9-21-31	EX9-21-33	EX9-21-34
			Sample Date	2020-08-16	2020-08-16	2020-08-16	2020-08-16	2021-07-14	2021-07-14	2021-07-14	2021-07-27	2021-07-13	2021-07-14	2021-07-14	2021-07-14	2021-07-14	2021-07-22	2021-07-22	2021-07-22	2021-07-22
			Depth (m bgs)	1.5	1.9	0.7	1.8	0.8	0.9	1.0	1.7	1.6	1.6	1.8	2.0	1.4	1.1	1.0	1.1	1.5
			Field Screening (ppm)	10	5	5	5	20	20	10	0	0	10	5	0	0	0	0	0	0
Parameter	Guidelines[1]	RDL	Unit																	
Benzene	0.03	0.005	mg/kg	< 0.0050	0.0117	< 0.0050	< 0.0050	< 0.0050	0.0075	0.0307	< 0.0050	0.0105	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0086
Toluene	0.37	0.05	mg/kg	0.364	0.301	0.187	0.196	< 0.050	< 0.050	< 0.050	< 0.014	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.014	< 0.014	< 0.014	< 0.024
Ethylbenzene	0.082	0.01	mg/kg	< 0.010	0.025	< 0.010	< 0.010	0.014	0.028	0.084	< 0.015	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.015	< 0.015	< 0.015	< 0.026
Xylenes, Total	11	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.071	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.071	< 0.071	< 0.071	< 0.12
F1 (C6-C10) - BTEX	240	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 17
F2 (C10-C16)	260	20	mg/kg	< 20	< 20	< 20	< 20	230	< 20	< 20	< 25	< 20	< 20	< 20	< 20	< 20	< 25	< 25	< 25	< 25
F3 (C16-C34)	1,700	20	mg/kg	63	< 20	< 20	< 20	60	73	26	< 50	< 20	< 20	< 20	< 20	< 20	< 50	105	< 50	< 50
F4 (C34-C50)	3,300	20	mg/kg	23	< 20	< 20	< 20	< 20	20	< 20	< 50	< 20	< 20	< 20	< 20	< 20	< 50	< 50	56	< 50

			Sample Name	EX9-21-42	EX9-21-43	EX9-21-53	EX9-21-56	EX9-21-58	EX9-21-61	EX9-21-63	EX9-21-81	EX9-21-86	EX9-21-88	EX9-21-91	EX9-21-95	EX9-21-100	EX9-21-104	EX9-21-108	
			Sample Date	2021-07-22	2021-07-22	2021-07-22	2021-07-22	2021-07-27	2021-07-22	2021-07-22	2021-07-22	2021-07-27	2021-07-22	2021-07-22	2021-07-23	2021-07-23	2021-07-23	2021-07-27	
			Depth (m bgs)	1.5	1.0	1.5	0.8	1.6	1.0	1.4	1.0	1.5	1.4	0.9	1.0	1.0	1.0	1.5	
			Field Screening (ppm)	5	5	5	10	35	5	10	5	25	5	0	0	5	0	20	
Parameter	Guidelines[1]	RDL	Unit																
Benzene	0.03	0.005	mg/kg	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	
Toluene	0.37	0.05	mg/kg	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	
Ethylbenzene	0.082	0.01	mg/kg	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	
Xylenes, Total	11	0.1	mg/kg	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	
F1 (C6-C10) - BTEX	240	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	
F2 (C10-C16)	260	20	mg/kg	< 25	150	91	40	< 25	82	< 25	33	< 25	< 25	< 25	< 25	128	76	< 25	
F3 (C16-C34)	1,700	20	mg/kg	< 50	224	101	132	< 50	258	65	134	< 50	88	52	< 50	124	80	< 50	
F4 (C34-C50)	3,300	20	mg/kg	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	

			Sample Name	EX9-21-109	EX9-21-110	EX9-21-111	EX9-21-112	EX9-21-114	EX9-21-115	EX9-21-116	EX9-21-118	EX9-21-120	EX9-21-123	EX9-21-124	EX9-21-125	EX9-21-127	EX9-21-128	
			Sample Date	2021-07-27	2021-07-27	2021-07-27	2021-07-27	2021-08-04	2021-08-03	2021-08-04	2021-07-27	2021-08-04	2021-08-03	2021-08-03	2021-08-03	2021-08-19	2021-08-27	
			Depth (m bgs)	1.5	1.6	1.8	2.0	2.3	2.3	2.2	2.3	2.5	1.5	1.3	1.0	2.5	2.7	
			Field Screening (ppm)	25	10	5	0	0	0	0	0	0	0	0	0	0	0	
Parameter	Guidelines[1]	RDL	Unit															
Benzene	0.03	0.005	mg/kg	< 0.0050	< 0.0050	< 0.0050	0.0143	< 0.0050	< 0.0050	< 0.0050	0.0172	0.0052	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	
Toluene	0.37	0.05	mg/kg	< 0.014	< 0.014	< 0.014	< 0.014	< 0.050	0.124	0.247	0.056	0.052	0.062	0.095	< 0.050	< 0.014	< 0.014	
Ethylbenzene	0.082	0.01	mg/kg	< 0.015	< 0.015	< 0.015	< 0.015	< 0.010	< 0.010	< 0.010	0.018	< 0.010	< 0.010	< 0.010	< 0.010	< 0.015	< 0.015	
Xylenes, Total	11	0.1	mg/kg	< 0.071	< 0.071	< 0.071	< 0.071	< 0.10	< 0.10	< 0.10	0.094	< 0.10	< 0.10	< 0.10	< 0.10	< 0.071	< 0.071	
F1 (C6-C10) - BTEX	240	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	11	< 10	
F2 (C10-C16)	260	20	mg/kg	< 25	< 25	< 25	< 25	22	< 20	< 20	< 25	22	36	39	< 20	84	40	
F3 (C16-C34)	1,700	20	mg/kg	< 50	< 50	< 50	61	< 20	< 20	< 20	< 50	< 20	30	115	< 20	< 50	< 50	
F4 (C34-C50)	3,300	20	mg/kg	< 50	< 50	< 50	< 50	< 20	< 20	< 20	< 50	< 20	< 20	49	< 20	< 50	< 50	

Notes

[1] Nunavut Environmental Guideline for Contaminated Soil Remediation for coarse-grained soil and industrial land use (2009)

m bgs - metres below ground surface

ppm - parts per million

RDL - Reportable Detection Limit

mg/kg - Milligram per kilograms

Bold - Exceeds targeted guidelines

< Indicates parameter was below laboratory equipment detection limit.

Table 10: Soil Analytical Results - Excavation 10
2020 and 2021 Contaminated Soils Remediation
Lupin Mine, NU

			Sample Name	EX-10-06	EX-10-09	EX10-21-2	EX10-21-6	EX10-21-7	EX10-21-8	EX10-21-10	EX10-21-11	EX10-21-12
			Sample Date	2020-08-16	2020-08-16	2021-07-20	2021-07-20	2021-07-20	2021-07-20	2021-07-20	2021-07-20	2021-07-20
			Depth (m bgs)	1.2	1.5	1.5	1.2	1.3	1.2	1.2	1.2	1.2
			Field Screening (ppm)	15	5	0	0	0	0	0	5	0
Parameter	**Guidelines[1]**	**RDL**	**Unit**									
Benzene	0.03	0.005	mg/kg	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Toluene	0.37	0.05	mg/kg	0.249	0.214	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
Ethylbenzene	0.082	0.01	mg/kg	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Xylenes, Total	11	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
F1 (C6-C10) - BTEX	240	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
F2 (C10-C16)	260	20	mg/kg	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
F3 (C16-C34)	1,700	20	mg/kg	80	< 20	< 20	380	477	191	< 20	156	< 20
F4 (C34-C50)	3,300	20	mg/kg	25	< 20	< 20	60	65	34	< 20	82	< 20

Notes

[1] Nunavut Environmental Guideline for Contaminated Soil Remediation for coarse-grained soil and industrial land use (2009)
m bgs - metres below ground surface
ppm - parts per million
RDL - Reportable Detection Limit
mg/kg - Milligram per kilograms
Bold - Exceeds targeted guidelines
< Indicates parameter was below laboratory equipment detection limit.

Table 11: Soil Analytical Results - Excavation 12
2020 and 2021 Contaminated Soils Remedation
Lupin Mine, NU

Sample Name				EX12-21-3	EX12-21-4	EX12-21-5	EX12-21-7	EX12-21-9	EX12-21-10	EX12-21-11	EX12-21-13	EX12-21-14	EX12-21-15	EX12-21-17	EX12-21-18
Sample Date				2021-07-19	2021-07-19	2021-07-19	2021-07-19	2021-07-19	2021-07-19	2021-07-19	2021-07-19	2021-07-19	2021-07-19	2021-07-19	2021-07-19
Depth (m bgs)				1.2	1.2	0.9	0.9	0.8	1.6	1.0	1.8	2.2	1.3	2.0	2.0
Field Screening (ppm)				10	10	10	0	20	5	5	5	5	5	0	0
Parameter	**Guidelines[1]**	**RDL**	**Unit**												
Benzene	0.03	0.005	mg/kg	0.0061	0.0186	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Toluene	0.37	0.05	mg/kg	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
Ethylbenzene	0.082	0.01	mg/kg	< 0.010	0.012	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Xylenes, Total	11	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
F1 (C6-C10) - BTEX	240	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
F2 (C10-C16)	260	20	mg/kg	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
F3 (C16-C34)	1,700	20	mg/kg	63	79	110	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
F4 (C34-C50)	3,300	20	mg/kg	26	31	45	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20

Sample Name				EX12-21-21	EX12-21-25	EX12-21-27	EX12-21-28
Sample Date				2021-07-19	2021-07-19	2021-07-19	2021-07-19
Depth (m bgs)				0.8	0.8	1.7	1.7
Field Screening (ppm)				5	0	0	5
Parameter	**Guidelines[1]**	**RDL**	**Unit**				
Benzene	0.03	0.005	mg/kg	0.0051	< 0.0050	0.0234	< 0.0050
Toluene	0.37	0.05	mg/kg	< 0.050	< 0.050	< 0.050	< 0.050
Ethylbenzene	0.082	0.01	mg/kg	< 0.010	< 0.010	0.012	< 0.010
Xylenes, Total	11	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10
F1 (C6-C10) - BTEX	240	10	mg/kg	< 10	< 10	< 10	< 10
F2 (C10-C16)	260	20	mg/kg	34	< 20	56	< 20
F3 (C16-C34)	1,700	20	mg/kg	493	< 20	205	39
F4 (C34-C50)	3,300	20	mg/kg	222	< 20	81	< 20

Notes

[1] Nunavut Environmental Guideline for Contaminated Soil Remediation for coarse-grained soil and industrial land use (2009)

m bgs - metres below ground surface

ppm - parts per million

RDL - Reportable Detection Limit

mg/kg - Milligram per kilograms

Bold - Exceeds targeted guidelines

< Indicates parameter was below laboratory equipment detection limit.

Table 12: Soil Analytical Results - Excavation 13
2020 and 2021 Contaminated Soils Remedation
Lupin Mine, NU

			Sample Name	EX-13-08	EX-13-09	EX13-21-5	EX13-21-10	EX13-21-18	EX13-21-23	EX13-21-26	EX13-21-28	EX13-21-29	EX13-21-31	EX13-21-37	EX13-21-39
			Sample Date	2020-08-17	2020-08-17	2021-07-19	2021-07-19	2021-07-19	2021-07-19	2021-07-19	2021-07-19	2021-07-19	2021-07-19	2021-07-19	2021-07-19
			Depth (m bgs)	1.6	2.0	1.7	1.7	1.0	1.1	1.1	1.0	1.7	1.1	0.9	0.6
			Field Screening (ppm)	5	0	0	0	15	0	10	10	0	0	5	10
Parameter	Guidelines[1]	RDL	Unit												
Benzene	0.03	0.005	mg/kg	< 0.0050	< 0.0050	< 0.0050	0.0262	0.0141	0.0069	0.0065	< 0.0050	0.0153	< 0.0050	< 0.0050	< 0.0050
Toluene	0.37	0.05	mg/kg	0.206	0.14	< 0.050	0.061	< 0.050	< 0.050	< 0.050	< 0.050	0.072	< 0.050	< 0.050	< 0.050
Ethylbenzene	0.082	0.01	mg/kg	< 0.010	< 0.010	< 0.010	0.019	0.01	< 0.010	< 0.010	< 0.010	0.03	< 0.010	< 0.010	< 0.010
Xylenes, Total	11	0.1	mg/kg	0.11	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.19	< 0.10	< 0.10	< 0.10
F1 (C6-C10) - BTEX	240	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
F2 (C10-C16)	260	20	mg/kg	25	< 20	< 20	< 20	< 20	< 20	< 20	< 20	36	< 20	< 20	< 20
F3 (C16-C34)	1,700	20	mg/kg	404	30	< 20	112	182	236	104	123	348	147	142	76
F4 (C34-C50)	3,300	20	mg/kg	239	< 20	< 20	35	59	49	34	44	60	55	29	39

			Sample Name	EX13-21-43	EX13-21-46	EX13-21-52	EX13-21-63	EX13-21-65	EX13-21-69	EX13-21-71	EX13-21-72	EX13-21-73	EX13-21-74	EX13-21-75
			Sample Date	2021-07-19	2021-07-19	2021-07-19	2021-07-19	2021-07-19	2021-07-19	2021-07-26	2021-07-26	2021-07-26	2021-07-26	2021-07-26
			Depth (m bgs)	1.1	0.8	1.7	1.7	1.9	1.0	2.1	2.1	1.1	2.1	2.2
			Field Screening (ppm)	5	0	0	0	0	5	0	0	0	0	0
Parameter	Guidelines[1]	RDL	Unit											
Benzene	0.03	0.005	mg/kg	< 0.0050	< 0.0050	0.0105	0.025	< 0.0050	0.0166	< 0.0050	0.0203	< 0.0050	0.0084	0.0057
Toluene	0.37	0.05	mg/kg	< 0.050	< 0.050	< 0.050	0.102	< 0.050	0.121	< 0.014	0.135	< 0.014	0.02	< 0.014
Ethylbenzene	0.082	0.01	mg/kg	< 0.010	< 0.010	0.013	0.03	< 0.010	0.032	< 0.015	0.028	< 0.015	< 0.015	< 0.015
Xylenes, Total	11	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.071	0.116	< 0.071	< 0.071	< 0.071
F1 (C6-C10) - BTEX	240	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
F2 (C10-C16)	260	20	mg/kg	< 20	< 20	< 20	110	< 20	< 20	112	< 25	< 25	< 25	< 25
F3 (C16-C34)	1,700	20	mg/kg	< 20	< 20	282	1,140	36	206	1,390	128	< 50	< 50	< 50
F4 (C34-C50)	3,300	20	mg/kg	< 20	< 20	77	279	< 20	86	324	< 50	< 50	< 50	< 50

Notes

[1] Nunavut Environmental Guideline for Contaminated Soil Remediation for coarse-grained soil and industrial land use (2009)
m bgs - metres below ground surface
ppm - parts per million
RDL - Reportable Detection Limit
mg/kg - Milligram per kilograms
Bold - Exceeds targeted guidelines
< Indicates parameter was below laboratory equipment detection limit.
> Indicates parameter detected above equipment analytical range.
- Chemical not analyzed or criteria not defined.

			Sample Name	EX15-21-9	EX15-21-10	EX15-21-11	EX15-21-12	EX15-21-13	EX15-21-18	EX-15-22	EX-15-24	EX15-21-23	EX15-21-29	EX15-21-30	EX15-21-31	EX15-21-32	EX-15-34	EX-15-36
			Sample Date	2021-08-04	2021-08-04	2021-09-07	2021-08-04	2021-08-04	2021-08-04	2020-08-26	2020-08-26	2021-08-04	2021-09-07	2021-09-07	2021-08-04	2021-08-04	2020-08-26	2020-08-26
			Depth (m bgs)	0.7	0.7	1.0	0.6	0.6	1.0	1.5	1.5	1.0	1.8	1.8	1.5	1.5	1.8	1.3
			Field Screening Headspace/Lead (ppm)	0/-	70/45	100/42	5/50	0/-	150/-	0/32	5/-	0/11	0/8	0/9	0/10	0/12	0/8	20/17
Parameter	Guidelines[1]	RDL	Unit															
Benzene	0.03	0.005	mg/kg	< 0.0050	< 0.0050	< 0.0050	0.0176	0.0124	0.0091	< 0.0050	0.0179	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.0088
Toluene	0.37	0.05	mg/kg	< 0.014	< 0.014	< 0.014	0.067	0.031	0.052	< 0.050	< 0.050	< 0.014	< 0.014	< 0.014	< 0.014	0.025	< 0.050	0.109
Ethylbenzene	0.082	0.01	mg/kg	< 0.015	< 0.015	< 0.015	0.019	< 0.015	< 0.015	< 0.010	< 0.010	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.010	0.014
Xylenes, Total	11	0.1	mg/kg	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.10	< 0.10	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.10	< 0.10
F1 (C6-C10) - BTEX	240	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
F2 (C10-C16)	260	20	mg/kg	< 25	< 25	< 25	< 25	< 25	117	< 20	< 20	< 25	< 25	< 25	< 25	< 25	< 20	< 20
F3 (C16-C34)	1,700	20	mg/kg	< 50	< 50	< 50	502	269	406	27	23	< 50	< 50	< 50	< 50	< 50	28	22
F4 (C34-C50)	3,300	20	mg/kg	< 50	< 50	< 50	178	74	52	20	< 20	< 50	< 50	< 50	< 50	< 50	23	< 20
Lead	600	0.1	mg/kg	5	2	5	52	26	70	-	-	2	6	4	4	3	-	-

			Sample Name	EX15-21-39	EX15-21-41	EX-15-42	EX15-21-45	EX15-21-46	EX15-21-47	EX15-21-48	EX15-21-50	EX15-21-52	EX15-21-54	EX15-21-55	EX15-21-57	EX15-21-58	EX15-21-59	EX15-21-61
			Sample Date	2021-08-04	2021-08-04	2020-08-26	2021-09-07	2021-09-07	2021-09-07	2021-08-04	2021-08-04	2021-09-07	2021-08-04	2021-09-07	2021-09-07	2021-08-04	2021-08-04	2021-08-04
			Depth (m bgs)	0.8	1.0	1.7	1.7	1.7	1.7	1.5	1.3	1.2	0.8	0.5	1.2	0.4	1.0	1.0
			Field Screening Headspace/Lead (ppm)	0/10	5/9	0/7	0/8	0/12	0/10	5/6	0/10	5/13	5/19	0/21	0/11	0/25	0/16	0/11
Parameter	Guidelines[1]	RDL	Unit															
Benzene	0.03	0.005	mg/kg	< 0.0050	< 0.0050	0.0236	< 0.0050	< 0.0050	< 0.0050	0.0083	0.0065	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Toluene	0.37	0.05	mg/kg	< 0.014	< 0.014	0.098	< 0.014	< 0.014	0.09	0.237	< 0.014	< 0.014	< 0.014	0.026	0.028	< 0.014	< 0.014	< 0.014
Ethylbenzene	0.082	0.01	mg/kg	< 0.015	< 0.015	0.037	< 0.015	< 0.015	< 0.015	0.029	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015
Xylenes, Total	11	0.1	mg/kg	< 0.071	< 0.071	0.26	< 0.071	< 0.071	< 0.071	0.085	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071
F1 (C6-C10) - BTEX	240	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
F2 (C10-C16)	260	20	mg/kg	< 25	< 25	< 20	< 25	< 25	< 25	26	< 25	< 25	< 25	< 25	< 25	75	< 25	< 25
F3 (C16-C34)	1,700	20	mg/kg	< 50	< 50	< 20	< 50	< 50	< 50	98	70	53	< 50	< 50	< 50	82	< 50	< 50
F4 (C34-C50)	3,300	20	mg/kg	< 50	< 50	< 20	< 50	< 50	< 50	52	55	53	< 50	< 50	< 50	< 50	< 50	< 50
Lead	600	0.1	mg/kg	2	2	-	2	3	2	8	4	3	3	4	3	2	10	4

			Sample Name	EX15-21-63	EX15-21-65	EX15-21-69	EX15-21-71	EX15-21-72	EX15-21-73	EX15-21-74	EX15-21-75	EX15-21-76	EX15-21-77	EX15-21-78	EX15-21-79	EX15-21-80	EX15-21-81	EX15-21-83
			Sample Date	2021-08-04	2021-09-07	2021-09-07	2021-09-07	2021-09-07	2021-09-07	2021-09-07	2021-09-07	2021-09-07	2021-09-07	2021-09-07	2021-09-07	2021-09-07	2021-09-07	2021-09-07
			Depth (m bgs)	1.0	1.8	2.0	2.2	2.2	2.2	2.0	2.1	2.8	2.8	2.6	2.8	2.8	2.6	2.4
			Field Screening Headspace/Lead (ppm)	10/12	25/10	35/-	0/9	0/9	0/11	0/12	0/12	0/8	0/8	0/7	0/9	0/10	0/11	0/12
Parameter	Guidelines[1]	RDL	Unit															
Benzene	0.03	0.005	mg/kg	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Toluene	0.37	0.05	mg/kg	0.032	< 0.014	< 0.014	0.027	< 0.014	< 0.014	< 0.014	0.066	0.15	0.061	0.045	0.022	0.032	< 0.014	0.15
Ethylbenzene	0.082	0.01	mg/kg	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015
Xylenes, Total	11	0.1	mg/kg	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071
F1 (C6-C10) - BTEX	240	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
F2 (C10-C16)	260	20	mg/kg	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25
F3 (C16-C34)	1,700	20	mg/kg	< 50	< 50	< 50	< 50	< 50	< 50	< 50	64	< 50	< 50	< 50	< 50	< 50	< 50	< 50
F4 (C34-C50)	3,300	20	mg/kg	< 50	< 50	< 50	< 50	< 50	< 50	< 50	51	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Lead	600	0.1	mg/kg	3	3	2	3	2	2	3	2	3	2	2	3	3	2	5

			Sample Name	EX15-21-84	EX15-21-85	EX15-21-86	EX15-21-87	EX15-21-88	EX15-21-89	EX15-21-91	EX15-21-92	EX15-21-93	EX15-21-94	EX15-21-95	EX15-21-96	EX15-21-97	EX15-21-98	EX15-21-99
			Sample Date	2021-09-07	2021-09-07	2021-09-07	2021-09-07	2021-09-07	2021-09-07	2021-09-07	2021-09-07	2021-09-07	2021-09-07	2021-09-07	2021-09-07	2021-09-07	2021-09-07	2021-09-07
			Depth (m bgs)	2.4	2.1	2.1	2.6	2.5	2.4	2.3	2.1	2.6	2.4	2.4	2.3	2.0	2.0	2.2
			Field Screening Headspace/Lead (ppm)	0/11	5/15	5/16	0/10	0/11	5/15	0/11	0/16	5/14	0/11	0/12	0/9	0/14	0/15	0/15
Parameter	Guidelines[1]	RDL	Unit															
Benzene	0.03	0.005	mg/kg	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.008	< 0.0050
Toluene	0.37	0.05	mg/kg	0.028	0.334	0.093	0.205	0.029	0.028	0.239	0.116	0.044	0.043	0.051	0.216	< 0.014	0.041	< 0.014
Ethylbenzene	0.082	0.01	mg/kg	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015
Xylenes, Total	11	0.1	mg/kg	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071
F1 (C6-C10) - BTEX	240	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
F2 (C10-C16)	260	20	mg/kg	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25
F3 (C16-C34)	1,700	20	mg/kg	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	68	95
F4 (C34-C50)	3,300	20	mg/kg	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	57
Lead	600	0.1	mg/kg	4	2	4	7	4	7	3	4	3	7	7	4	4	4	3

			Sample Name	EX15-21-100	EX15-21-102	EX15-21-104	EX15-21-106	EX15-21-108	EX15-21-110	EX15-21-111	EX15-21-112	EX15-21-113	EX15-21-114	EX15-21-115	EX15-21-116	EX15-21-118	EX15-21-119	EX15-21-120
			Sample Date	2021-09-07	2021-09-07	2021-09-07	2021-09-07	2021-09-07	2021-09-07	2021-09-07	2021-09-07	2021-09-09	2021-09-09	2021-09-09	2021-09-09	2021-09-10	2021-09-10	2021-09-10
			Depth (m bgs)	1.0	1.0	1.0	1.0	1.0	2.2	2.2	2.6	1.0	1.0	1.0	1.0	1.0	1.0	1.0
			Field Screening Headspace/Lead (ppm)	0/16	0/12	5/11	10/15	5/9	5/7	5/8	-/-	5/18	0/15	0/12	0/15	0/12	0/16	0/21
Parameter	Guidelines[1]	RDL	Unit															
Benzene	0.03	0.005	mg/kg	< 0.0050	< 0.0050	0.0093	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.0155	< 0.0050	< 0.0050	< 0.0050
Toluene	0.37	0.05	mg/kg	< 0.014	< 0.014	0.033	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	0.046	0.247	0.116	0.045	0.076	0.025
Ethylbenzene	0.082	0.01	mg/kg	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	0.03	< 0.015	< 0.015	< 0.015
Xylenes, Total	11	0.1	mg/kg	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	0.193	< 0.071	< 0.071	< 0.071
F1 (C6-C10) - BTEX	240	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
F2 (C10-C16)	260	20	mg/kg	< 25	< 25	< 25	< 25	35	< 25	< 25	< 25	< 25	34	< 25	< 25	< 25	< 25	< 25
F3 (C16-C34)	1,700	20	mg/kg	< 50	< 50	< 50	< 50	62	< 50	< 50	< 50	128	258	100	229	< 50	< 50	< 50
F4 (C34-C50)	3,300	20	mg/kg	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	126	214	83	208	< 50	< 50	< 50
Lead	600	0.1	mg/kg	3	12	13	89	6	3	3	9	5	7	2	10	4	24	24

Table 13: Soil Analytical Results - Excavation 15
2020 and 2021 Contaminated Soils Remediation
Lupin Mine, NU

Sample Name				EX15-21-125	EX15-21-126	EX15-21-127	EX15-21-128	EX15-21-129	EX15-21-130	EX15-21-131	EX15-21-132	EX15-21-134	EX15-21-137	EX15-21-139	EX15-21-140
Sample Date				2021-09-10	2021-09-10	2021-09-10	2021-09-10	2021-09-10	2021-09-10	2021-09-15	2021-09-15	2021-09-15	2021-09-15	2021-09-15	2021-09-15
Depth (m bgs)				1.8	1.8	1.8	1.8	1.8	1.8	1.0	1.8	1.0	1.0	1.8	1.8
Field Screening Headspace/Lead (ppm)				5/9	0/9	0/8	0/10	5/9	5/11	0/20	0/15	0/18	0/26	0/8	0/9
Parameter	**Guidelines[1]**	**RDL**	**Unit**												
Benzene	0.03	0.005	mg/kg	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Toluene	0.37	0.05	mg/kg	< 0.014	0.169	0.069	0.062	0.041	< 0.014	0.018	< 0.014	< 0.014	< 0.014	0.022	0.015
Ethylbenzene	0.082	0.01	mg/kg	< 0.015	0.016	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015
Xylenes, Total	11	0.1	mg/kg	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071
F1 (C6-C10) - BTEX	240	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
F2 (C10-C16)	260	20	mg/kg	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25
F3 (C16-C34)	1700	20	mg/kg	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	77	< 50
F4 (C34-C50)	3300	20	mg/kg	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Lead	600	0.1	mg/kg	3	2	3	2	2	2	6	2	3	3	2	2

Notes
[1] Nunavut Environmental Guideline for Contaminated Soil Remediation for coarse-grained soil and industrial land use (2009)
m bgs - metres below ground surface
ppm - parts per million
RDL - Reportable Detection Limit
mg/kg - Milligram per kilograms
Bold - Exceeds targeted guidelines
< Indicates parameter was below laboratory equipment detection limit.
- Chemical not analyzed or criteria not defined.

Table 14: Soil Analytical Results - Excavation 16
2020 and 2021 Contaminated Soils Remediation
Lupin Mine, NU

			Sample Name	EX16-21-2	EX16-21-5	EX16-21-18	EX16-21-19	EX16-21-23	EX16-21-25	EX16-21-30	EX16-21-36	EX16-21-38	EX16-21-42	EX16-21-45
			Sample Date	23-Jul-2021	23-Jul-2021	23-Jul-2021	23-Jul-2021	23-Jul-2021	23-Jul-2021	23-Jul-2021	23-Jul-2021	23-Jul-2021	23-Jul-2021	23-Jul-2021
			Depth (m bgs)	1.1	0.6	1.8	1.4	1.8	1.5	1.7	1.8	1.8	1.7	1.6
			Field Screening (ppm)	5	10	5	0	5	0	10	5	5	10	5
Parameter	**Guidelines[1]**	**RDL**	**Unit**											
Benzene	0.03	0.005	mg/kg	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Toluene	0.37	0.05	mg/kg	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014
Ethylbenzene	0.082	0.01	mg/kg	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015
Xylenes, Total	11	0.1	mg/kg	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071
F1 (C6-C10) - BTEX	240	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
F2 (C10-C16)	260	20	mg/kg	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25
F3 (C16-C34)	1,700	20	mg/kg	< 50	< 50	< 50	< 50	< 50	< 50	< 50	171	< 50	< 50	< 50
F4 (C34-C50)	3,300	20	mg/kg	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50

			Sample Name	EX16-21-49	EX16-21-52	EX16-21-56	EX16-21-59	EX16-21-60	EX16-21-63	EX16-21-67	EX16-21-69	EX16-21-70	EX16-21-74	EX16-21-75
			Sample Date	23-Jul-2021	23-Jul-2021	23-Jul-2021	26-Jul-2021	23-Jul-2021	23-Jul-2021	23-Jul-2021	23-Jul-2021	27-Jul-2021	27-Jul-2021	27-Jul-2021
			Depth (m bgs)	1.5	1.7	1.7	1.8	1.6	1.6	1.8	1.9	1.8	2.6	2.6
			Field Screening (ppm)	10	5	5	20	0	15	10	20	0	0	0
Parameter	**Guidelines[1]**	**RDL**	**Unit**											
Benzene	0.03	0.005	mg/kg	< 0.0050	< 0.0092	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Toluene	0.37	0.05	mg/kg	< 0.014	< 0.026	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014
Ethylbenzene	0.082	0.01	mg/kg	< 0.015	< 0.028	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015
Xylenes, Total	11	0.1	mg/kg	< 0.071	< 0.13	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071
F1 (C6-C10) - BTEX	240	10	mg/kg	< 10	< 18	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
F2 (C10-C16)	260	20	mg/kg	< 25	40	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25
F3 (C16-C34)	1,700	20	mg/kg	< 50	< 50	< 50	< 50	169	< 50	< 50	< 50	< 50	< 50	< 50
F4 (C34-C50)	3,300	20	mg/kg	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50

			Sample Name	EX16-21-78	EX16-21-81	EX16-21-83	EX16-21-85	EX16-21-87	EX16-21-89	EX16-21-93	EX16-21-95
			Sample Date	04-Aug-2021	04-Aug-2021	04-Aug-2021	04-Aug-2021	04-Aug-2021	04-Aug-2021	04-Aug-2021	04-Aug-2021
			Depth (m bgs)	2.5	2.6	2.6	2.6	2.6	2.6	2.6	2.4
			Field Screening (ppm)	5	0	0	10	5	25	10	0
Parameter	**Guidelines[1]**	**RDL**	**Unit**								
Benzene	0.03	0.005	mg/kg	< 0.0050	< 0.0050	0.0095	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Toluene	0.37	0.05	mg/kg	< 0.014	0.1	0.033	0.056	< 0.014	0.049	0.037	< 0.014
Ethylbenzene	0.082	0.01	mg/kg	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015
Xylenes, Total	11	0.1	mg/kg	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071
F1 (C6-C10) - BTEX	240	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
F2 (C10-C16)	260	20	mg/kg	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25
F3 (C16-C34)	1,700	20	mg/kg	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
F4 (C34-C50)	3,300	20	mg/kg	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50

Notes
[1] Nunavut Environmental Guideline for Contaminated Soil Remediation for coarse-grained soil and industrial land use (2009)
m bgs - metres below ground surface
ppm - parts per million
RDL - Reportable Detection Limit
mg/kg - Milligram per kilograms
Bold - Exceeds targeted guidelines
< Indicates parameter was below laboratory equipment detection limit.

Table 15: Soil Analytical Results - Excavation 19
2020 and 2021 Contaminated Soils Remedation
Lupin Mine, NU

			Sample Name	EX19-21-1	EX19-21-2	EX19-21-4	EX19-21-8	EX19-21-13	EX19-21-14	EX19-21-20
			Sample Date	30-Jul-2021	30-Jul-2021	30-Jul-2021	30-Jul-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021
			Depth (m bgs)	1.3	1.0	1.0	0.9	1.3	1.0	1.0
			Field Screening (ppm)	0	0	0	0	5	0	0
Parameter	**Guidelines[1]**	**RDL**	**Unit**							
Benzene	0.03	0.005	mg/kg	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Toluene	0.37	0.05	mg/kg	< 0.050	0.1	0.13	< 0.050	0.059	< 0.014	< 0.014
Ethylbenzene	0.082	0.01	mg/kg	< 0.010	< 0.010	< 0.010	< 0.010	< 0.015	< 0.015	< 0.015
Xylenes, Total	11	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.071	< 0.071	< 0.071
F1 (C6-C10) - BTEX	240	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10
F2 (C10-C16)	260	20	mg/kg	< 20	< 20	< 20	< 20	< 25	< 25	< 25
F3 (C16-C34)	1700	20	mg/kg	< 20	< 20	< 20	< 20	< 50	69	< 50
F4 (C34-C50)	3300	20	mg/kg	< 20	< 20	< 20	< 20	< 50	< 50	< 50

			Sample Name	EX19-21-22	EX19-21-26	EX19-21-27	EX19-21-30	EX19-21-31	EX19-21-32
			Sample Date	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021	07-Sep-2021
			Depth (m bgs)	1.0	1.0	1.0	1.0	1.5	1.6
			Field Screening (ppm)	0	0	0	15	0	5
Parameter	**Guidelines[1]**	**RDL**	**Unit**						
Benzene	0.03	0.005	mg/kg	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Toluene	0.37	0.05	mg/kg	0.028	< 0.014	< 0.014	0.022	0.015	0.017
Ethylbenzene	0.082	0.01	mg/kg	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015
Xylenes, Total	11	0.1	mg/kg	< 0.071	< 0.071	< 0.071	0.364	< 0.071	< 0.071
F1 (C6-C10) - BTEX	240	10	mg/kg	< 10	< 10	< 10	**303**	< 10	< 10
F2 (C10-C16)	260	20	mg/kg	< 25	< 25	< 25	**7840**	< 25	< 25
F3 (C16-C34)	1700	20	mg/kg	< 50	< 50	196	1570	< 50	< 50
F4 (C34-C50)	3300	20	mg/kg	< 50	< 50	95	< 50	< 50	< 50

Notes
[1] Nunavut Environmental Guideline for Contaminated Soil Remediation for coarse-grained soil and industrial land use (2009)
m bgs - metres below ground surface
ppm - parts per million
RDL - Reportable Detection Limit
mg/kg - Milligram per kilograms
Bold - Exceeds targeted guidelines
< Indicates parameter was below laboratory equipment detection limit.

Table 16: Soil Analytical Results - Excavation 20
2020 and 2021 Contaminated Soils Remedation
Lupin Mine, NU

			Sample Name	EX 20-21-02	EX 20-21-04	EX 20-21-05	EX20-21-06	EX20-21-08	EX20-21-12	EX20-21-14	EX20-21-15
			Sample Date	2021-08-08	2021-08-08	2021-08-08	19-Aug-2021	19-Aug-2021	19-Aug-2021	19-Aug-2021	27-Aug-2021
			Depth (m bgs)	1.8	1.9	2.0	1.5	1.5	1.5	2.8	1.5
			Field Screening (ppm)	0	0	0	5	25	5	0	-
Parameter	**Guidelines[1]**	**RDL**	**Unit**								
Benzene	0.03	0.005	mg/kg	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Toluene	0.37	0.05	mg/kg	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	0.088
Ethylbenzene	0.082	0.01	mg/kg	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015
Xylenes, Total	11	0.1	mg/kg	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071
F1 (C6-C10) - BTEX	240	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
F2 (C10-C16)	260	20	mg/kg	< 25	33	< 25	< 25	< 25	< 25	< 25	< 25
F3 (C16-C34)	1700	20	mg/kg	< 50	1130	55	< 50	< 50	< 50	< 50	872
F4 (C34-C50)	3300	20	mg/kg	< 50	867	70	< 50	< 50	< 50	< 50	2250

Notes
[1] Nunavut Environmental Guideline for Contaminated Soil Remediation for coarse-grained soil and industrial land use (2009)
m bgs - metres below ground surface
ppm - parts per million
RDL - Reportable Detection Limit
mg/kg - Milligram per kilograms
Bold - Exceeds targeted guidelines
< Indicates parameter was below laboratory equipment detection limit.

Table 17: Soil Analytical Results - Excavation 21
2020 and 2021 Contaminated Soils Remedation
Lupin Mine, NU

			Sample Name	EX21-21-09	EX21-21-11	EX21-21-13	EX21-21-15	EX21-21-17	EX21-21-20	EX21-21-21	EX21-21-38	EX21-21-64	EX21-21-70	EX21-21-74	EX21-21-75	EX21-21-77	EX21-21-79	EX21-21-80	EX21-21-81	EX21-21-84
			Sample Date	2021-08-24	2021-08-24	2021-08-24	2021-08-27	2021-08-24	2021-08-27	2021-08-27	2021-08-24	2021-08-27	2021-08-27	2021-08-24	2021-08-24	2021-08-24	2021-08-24	2021-08-24	2021-08-27	2021-08-27
			Depth (m bgs)	1.1	1.2	1.1	1.3	1.3	2.5	1.4	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	1.5	3.0
			Field Screening (ppm)	5	20	5	5	5	10	5	0	0	0	0	0	0	0	5	0	10
Parameter	Guidelines[1]	RDL	Unit																	
Benzene	0.03	0.005	mg/kg	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.0098	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Toluene	0.37	0.05	mg/kg	0.047	0.046	0.037	0.088	0.036	< 0.014	< 0.014	0.029	< 0.014	0.017	0.025	0.085	0.019	< 0.014	< 0.014	< 0.014	< 0.014
Ethylbenzene	0.082	0.01	mg/kg	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	0.069	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015
Xylenes, Total	11	0.1	mg/kg	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	0.189	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071
F1 (C6-C10) - BTEX	240	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
F2 (C10-C16)	260	20	mg/kg	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	49	81	< 25	< 25	140
F3 (C16-C34)	1,700	20	mg/kg	< 50	< 50	< 50	872	< 50	< 50	96	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	64	108
F4 (C34-C50)	3,300	20	mg/kg	< 50	< 50	< 50	2250	< 50	< 50	76	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	50	< 50

			Sample Name	EX21-21-86	EX21-21-87	EX21-21-89	EX21-21-91	EX21-21-93	EX21-21-95	EX21-21-98	EX21-21-102	EX21-21-103	EX21-21-105	EX21-21-109	EX21-21-110	EX21-21-111	EX21-21-112	EX21-21-113	EX21-21-114	EX21-21-115
			Sample Date	2021-08-27	2021-08-27	2021-08-27	2021-08-27	2021-08-27	2021-08-27	2021-08-27	2021-08-27	2021-08-27	2021-08-27	2021-08-27	2021-08-27	2021-08-27	2021-08-27	2021-08-27	2021-08-27	2021-08-27
			Depth (m bgs)	3.0	1.5	1.5	1.5	1.5	1.5	3.0	3.0	1.5	1.5	3.0	3.0	3.0	3.0	3.0	3.0	4.0
			Field Screening (ppm)	10	5	0	0	0	0	35	10	0	0	0	0	0	0	0	0	5
Parameter	Guidelines[1]	RDL	Unit																	
Benzene	0.03	0.005	mg/kg	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Toluene	0.37	0.05	mg/kg	< 0.014	< 0.014	< 0.014	< 0.014	0.018	0.016	< 0.014	< 0.014	< 0.014	0.038	0.203	< 0.014	0.016	< 0.014	< 0.014	< 0.014	< 0.014
Ethylbenzene	0.082	0.01	mg/kg	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	0.027
Xylenes, Total	11	0.1	mg/kg	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	0.089	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	0.172
F1 (C6-C10) - BTEX	240	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	61	< 10	< 10	< 10	< 10	< 10	< 10	< 10
F2 (C10-C16)	260	20	mg/kg	< 25	39	< 25	< 25	37	< 25	< 25	59	35	89	< 25	< 25	< 25	< 25	54	61	< 25
F3 (C16-C34)	1,700	20	mg/kg	< 50	88	211	< 50	157	< 50	< 50	< 50	58	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
F4 (C34-C50)	3,300	20	mg/kg	< 50	< 50	57	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50

			Sample Name	EX21-21-116	EX21-21-118	EX21-21-119	EX21-21-120	EX21-21-121	EX21-21-122	EX21-21-123	EX21-21-124	EX21-21-126	EX21-21-127	EX21-21-128	EX21-21-129	EX21-21-130	EX21-21-131
			Sample Date	2021-08-27	2021-08-27	2021-08-27	2021-08-27	2021-08-27	2021-08-27	2021-08-27	2021-08-27	2021-09-05	2021-09-05	2021-09-07	2021-09-07	2021-09-07	2021-09-07
			Depth (m bgs)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	1.5	3.4	4.3	3.4	3.4	3.5	3.5
			Field Screening (ppm)	0	0	5	0	20	0	0	0	0	0	0	0	0	5
Parameter	Guidelines[1]	RDL	Unit														
Benzene	0.03	0.005	mg/kg	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Toluene	0.37	0.05	mg/kg	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	0.177	0.079	< 0.014	0.092	0.038	0.063
Ethylbenzene	0.082	0.01	mg/kg	< 0.015	< 0.015	< 0.015	< 0.015	0.021	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015
Xylenes, Total	11	0.1	mg/kg	< 0.071	< 0.071	< 0.071	< 0.071	0.156	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071
F1 (C6-C10) - BTEX	240	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
F2 (C10-C16)	260	20	mg/kg	< 25	< 25	< 25	174	177	43	182	< 25	< 25	< 25	< 25	< 25	< 25	< 25
F3 (C16-C34)	1,700	20	mg/kg	< 50	< 50	< 50	55	55	< 50	60	109	< 50	< 50	< 50	< 50	68	< 50
F4 (C34-C50)	3,300	20	mg/kg	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50

Notes
[1] Nunavut Environmental Guideline for Contaminated Soil Remediation for coarse-grained soil and industrial land use (2009)
m bgs - metres below ground surface
ppm - parts per million
RDL - Reportable Detection Limit
mg/kg - Milligram per kilograms
Bold - Exceeds targeted guidelines
< Indicates parameter was below laboratory equipment detection limit.
> Indicates parameter detected above equipment analytical range.
- Chemical not analyzed or criteria not defined.

Table 18: Soil Analytical Results - Excavation 22
2020 and 2021 Contaminated Soils Remedation
Lupin Mine, NU

Sample Name				EX22-21-01	EX22-21-04	EX22-21-07	EX22-21-09	EX22-21-10
Sample Date				20-Aug-2021	20-Aug-2021	20-Aug-2021	20-Aug-2021	20-Aug-2021
Depth (m bgs)				1.5	2.5	1.5	2.5	2.7
Field Screening (ppm)				5	20	10	15	0
Parameter	**Guidelines[1]**	**RDL**	**Unit**					
Benzene	0.03	0.005	mg/kg	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Toluene	0.37	0.05	mg/kg	< 0.014	< 0.014	< 0.014	< 0.014	0.021
Ethylbenzene	0.082	0.01	mg/kg	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015
Xylenes, Total	11	0.1	mg/kg	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071
F1 (C6-C10) - BTEX	240	10	mg/kg	< 10	< 10	< 10	< 10	< 10
F2 (C10-C16)	260	20	mg/kg	< 25	41	< 25	< 25	< 25
F3 (C16-C34)	1,700	20	mg/kg	83	144	< 50	< 50	231
F4 (C34-C50)	3,300	20	mg/kg	< 50	55	< 50	< 50	< 50

Notes

[1] Nunavut Environmental Guideline for Contaminated Soil Remediation for coarse-grained soil and industrial land use (2009)
m bgs - metres below ground surface
ppm - parts per million
RDL - Reportable Detection Limit
mg/kg - Milligram per kilograms
Bold - Exceeds targeted guidelines
< Indicates parameter was below laboratory equipment detection limit.

Table 19: Soil Analytical Results - Arsenic Area
2020 and 2021 Contaminated Soils Remedation
Lupin Mine, NU

			Sample Name	AA-1	AA-2	AA-3	AA-5	AA-7	AA-8	AA-9	AA-10	AA-12
			Sample Date	2021-09-16	2021-09-16	2021-09-16	2021-09-16	2021-09-16	2021-09-16	2021-09-16	2021-09-16	2021-09-16
			Depth (m bgs)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
			Field Screening (ppm)	1,912	1,792	73	19	-	14	-	22	35
Parameter	Guidelines[1]	RDL	Unit									
Arsenic	4,000	0.1	mg/kg	1,190	1,500	182	23	25	11	12	51	937

			Sample Name	AA-14	AA-16	AA-18	AA-19	AA-21	AA-23	AA-24	AA-25	AA-26
			Sample Date	2021-09-16	2021-09-17	2021-09-17	2021-09-17	2021-09-17	2021-09-17	2021-09-17	2021-09-17	2021-09-16
			Depth (m bgs)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
			Field Screening (ppm)	38	6	307	256	350	6	363	180	16
Parameter	Guidelines[1]	RDL	Unit									
Arsenic	4,000	0.1	mg/kg	42	10	318	228	343	5	2,440	912	83

			Sample Name	AA-27	AA-28	AA-29	AA-30	AA-31	AA-32	AA-33	AA-35	AA-38
			Sample Date	2021-09-16	2021-09-16	2021-09-16	2021-09-16	2021-09-17	2021-09-17	2021-09-16	2021-09-16	2021-09-16
			Depth (m bgs)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
			Field Screening (ppm)	311	77	85	5	230	1,543	28	136	17
Parameter	Guidelines[1]	RDL	Unit									
Arsenic	4,000	0.1	mg/kg	39	43	364	9	19	1,270	45	312	54

			Sample Name	AA-39	AA-40	AA-41	AA-43	AA-44	AA-45	AA-46	AA-47	AA-50
			Sample Date	2021-09-17	2021-09-17	2021-09-17	2021-09-16	2021-09-16	2021-09-16	2021-09-17	2021-09-17	2021-09-16
			Depth (m bgs)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
			Field Screening (ppm)	720	1,127	118	43	150	740	7	6	237
Parameter	Guidelines[1]	RDL	Unit									
Arsenic	4,000	0.1	mg/kg	1,000	176	131	48	1,760	482	21	8	361

			Sample Name	AA-51	AA-52	AA-55	AA-56	AA-57	AA-58	AA-60	AA-61	AA-62
			Sample Date	2021-09-17	2021-09-16	2021-09-17	2021-09-17	2021-09-16	2021-09-17	2021-09-17	2021-09-17	2021-09-17
			Depth (m bgs)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
			Field Screening (ppm)	24	833	10	31	10	104	200	7	25
Parameter	Guidelines[1]	RDL	Unit									
Arsenic	4,000	0.1	mg/kg	7	1,570	5	37	10	53	366	51	230

			Sample Name	AA-65	AA-66	AA-68	AA-70	AA-72	AA-73	AA-74	AA-75	AA-77
			Sample Date	2021-09-17	2021-09-17	2021-09-17	2021-09-16	2021-09-16	2021-09-16	2021-09-16	2021-09-16	2021-09-16
			Depth (m bgs)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
			Field Screening (ppm)	160	704	110	35	22	215	186	23	12
Parameter	Guidelines[1]	RDL	Unit									
Arsenic	4,000	0.1	mg/kg	25	130	50	3,820	79	305	97	222	293

			Sample Name	AA-79	AA-80	AA-81
			Sample Date	2021-09-16	2021-09-16	2021-09-16
			Depth (m bgs)	0.5	0.5	0.5
			Field Screening (ppm)	22	19	110
Parameter	Guidelines[1]	RDL	Unit			
Arsenic	4,000	0.1	mg/kg	472	434	38

Notes

[1] Heavily arsenic impacted soil will be remediated to the screening value of 4,000 mg/kg.
m bgs - metres below ground surface
ppm - parts per million
RDL - Reportable Detection Limit
mg/kg - milligram per kilograms
Bold - Exceeds targeted guidelines

ATTACHMENT A

Laboratory Certificates of Analysis

GOLDER ASSOCIATES LTD
ATTN: Steven Fiddler
16820 107 Ave NW
EDMONTON AB T5P 4C3

Date Received: 06-AUG-20
Report Date: 08-AUG-20 17:35 (MT)
Version: FINAL

Client Phone: 780-483-3499

Certificate of Analysis

Lab Work Order #: L2484668

Project P.O. #: NOT SUBMITTED
Job Reference: 19136158
C of C Numbers:
Legal Site Desc:

Minnie Estigoy, Chem. Eng. Tech. DIPL
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2484668-1 EX-01-01 Sampled By: JR on 01-AUG-20 Matrix: SOIL **Single Metal in Soil by CRC ICPMS** **Metals in Soil by CRC ICPMS**							
Arsenic (As)	290		0.10	mg/kg	08-AUG-20	08-AUG-20	R5176889
L2484668-2 EX-01-02 Sampled By: JR on 01-AUG-20 Matrix: SOIL **Single Metal in Soil by CRC ICPMS** **Metals in Soil by CRC ICPMS**							
Arsenic (As)	14.4		0.10	mg/kg	08-AUG-20	08-AUG-20	R5176889
L2484668-3 EX-01-03 Sampled By: JR on 01-AUG-20 Matrix: SOIL **Single Metal in Soil by CRC ICPMS** **Metals in Soil by CRC ICPMS**							
Arsenic (As)	43.3		0.10	mg/kg	08-AUG-20	08-AUG-20	R5176889
L2484668-4 EX-01-04 Sampled By: JR on 01-AUG-20 Matrix: SOIL **Single Metal in Soil by CRC ICPMS** **Metals in Soil by CRC ICPMS**							
Arsenic (As)	47.3		0.10	mg/kg	08-AUG-20	08-AUG-20	R5176889
L2484668-5 EX-01-10 Sampled By: JR on 01-AUG-20 Matrix: SOIL **Single Metal in Soil by CRC ICPMS** **Metals in Soil by CRC ICPMS**							
Arsenic (As)	5.55		0.10	mg/kg	08-AUG-20	08-AUG-20	R5176889
L2484668-6 EX-02-03 Sampled By: JR on 01-AUG-20 Matrix: SOIL **Single Metal in Soil by CRC ICPMS** **Metals in Soil by CRC ICPMS**							
Arsenic (As)	194		0.10	mg/kg	08-AUG-20	08-AUG-20	R5176889
L2484668-7 EX-02-04 Sampled By: JR on 01-AUG-20 Matrix: SOIL **Single Metal in Soil by CRC ICPMS** **Metals in Soil by CRC ICPMS**							
Arsenic (As)	406		0.10	mg/kg	08-AUG-20	08-AUG-20	R5176889
L2484668-8 EX-02-06 Sampled By: JR on 01-AUG-20 Matrix: SOIL **Single Metal in Soil by CRC ICPMS** **Metals in Soil by CRC ICPMS**							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2484668-8 EX-02-06 Sampled By: JR on 01-AUG-20 Matrix: SOIL **Metals in Soil by CRC ICPMS** Arsenic (As)	754		0.10	mg/kg	08-AUG-20	08-AUG-20	R5176889
L2484668-9 EX-02-07 Sampled By: JR on 01-AUG-20 Matrix: SOIL **Single Metal in Soil by CRC ICPMS** **Metals in Soil by CRC ICPMS** Arsenic (As)	677		0.10	mg/kg	08-AUG-20	08-AUG-20	R5176889
L2484668-10 EX-02-10 Sampled By: JR on 01-AUG-20 Matrix: SOIL **Single Metal in Soil by CRC ICPMS** **Metals in Soil by CRC ICPMS** Arsenic (As)	55.3		0.10	mg/kg	08-AUG-20	08-AUG-20	R5176889
L2484668-11 EX-03-01 Sampled By: JR on 01-AUG-20 Matrix: SOIL **Single Metal in Soil by CRC ICPMS** **Metals in Soil by CRC ICPMS** Arsenic (As)	160		0.10	mg/kg	08-AUG-20	08-AUG-20	R5176889
L2484668-12 EX-03-02 Sampled By: JR on 01-AUG-20 Matrix: SOIL **Single Metal in Soil by CRC ICPMS** **Metals in Soil by CRC ICPMS** Arsenic (As)	419		0.10	mg/kg	08-AUG-20	08-AUG-20	R5176889
L2484668-13 EX-03-03 Sampled By: JR on 01-AUG-20 Matrix: SOIL **Single Metal in Soil by CRC ICPMS** **Metals in Soil by CRC ICPMS** Arsenic (As)	10.5		0.10	mg/kg	08-AUG-20	08-AUG-20	R5176889
L2484668-14 EX-03-05 Sampled By: JR on 01-AUG-20 Matrix: SOIL **Single Metal in Soil by CRC ICPMS** **Metals in Soil by CRC ICPMS** Arsenic (As)	16.2		0.10	mg/kg	08-AUG-20	08-AUG-20	R5176889
L2484668-15 EX-03-09 Sampled By: JR on 01-AUG-20 Matrix: SOIL **Single Metal in Soil by CRC ICPMS** **Metals in Soil by CRC ICPMS** Arsenic (As)	307		0.10	mg/kg	08-AUG-20	08-AUG-20	R5176889

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2484668-15 EX-03-09 Sampled By: JR on 01-AUG-20 Matrix: SOIL							
L2484668-16 EX-04-06 Sampled By: JR on 02-AUG-20 Matrix: SOIL **Single Metal in Soil by CRC ICPMS** **Metals in Soil by CRC ICPMS** Arsenic (As)	3280		0.10	mg/kg	08-AUG-20	08-AUG-20	R5176889
L2484668-17 EX-04-09 Sampled By: JR on 02-AUG-20 Matrix: SOIL **Single Metal in Soil by CRC ICPMS** **Metals in Soil by CRC ICPMS** Arsenic (As)	1310		0.10	mg/kg	08-AUG-20	08-AUG-20	R5176889
L2484668-18 EX-04-11 Sampled By: JR on 02-AUG-20 Matrix: SOIL **Single Metal in Soil by CRC ICPMS** **Metals in Soil by CRC ICPMS** Arsenic (As)	1230		0.10	mg/kg	08-AUG-20	08-AUG-20	R5176889
L2484668-19 EX-04-12 Sampled By: JR on 02-AUG-20 Matrix: SOIL **Single Metal in Soil by CRC ICPMS** **Metals in Soil by CRC ICPMS** Arsenic (As)	2970		0.10	mg/kg	08-AUG-20	08-AUG-20	R5176889
L2484668-20 EX-04-13 Sampled By: JR on 02-AUG-20 Matrix: SOIL **Single Metal in Soil by CRC ICPMS** **Metals in Soil by CRC ICPMS** Arsenic (As)	2020		0.10	mg/kg	08-AUG-20	08-AUG-20	R5176889
L2484668-21 EX-04-17 Sampled By: JR on 02-AUG-20 Matrix: SOIL **Single Metal in Soil by CRC ICPMS** **Metals in Soil by CRC ICPMS** Arsenic (As)	2570		0.10	mg/kg	08-AUG-20	08-AUG-20	R5176889
L2484668-22 EX-04-18 Sampled By: JR on 02-AUG-20 Matrix: SOIL **Single Metal in Soil by CRC ICPMS** **Metals in Soil by CRC ICPMS** Arsenic (As)	1660		0.10	mg/kg	08-AUG-20	08-AUG-20	R5176889

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2484668-23 EX-04-19 Sampled By: JR on 02-AUG-20 Matrix: SOIL **Single Metal in Soil by CRC ICPMS** **Metals in Soil by CRC ICPMS** Arsenic (As)	2920		0.10	mg/kg	08-AUG-20	08-AUG-20	R5176889
L2484668-24 EX-04-25 Sampled By: JR on 02-AUG-20 Matrix: SOIL **Single Metal in Soil by CRC ICPMS** **Metals in Soil by CRC ICPMS** Arsenic (As)	11600		0.10	mg/kg	08-AUG-20	08-AUG-20	R5176889
L2484668-25 EX-05-01 Sampled By: JR on 02-AUG-20 Matrix: SOIL **Single Metal in Soil by CRC ICPMS** **Metals in Soil by CRC ICPMS** Arsenic (As)	2980		0.10	mg/kg	08-AUG-20	08-AUG-20	R5176889
L2484668-26 EX-05-02 Sampled By: JR on 02-AUG-20 Matrix: SOIL **Single Metal in Soil by CRC ICPMS** **Metals in Soil by CRC ICPMS** Arsenic (As)	3510		0.10	mg/kg	08-AUG-20	08-AUG-20	R5176889
L2484668-27 EX-05-03 Sampled By: JR on 02-AUG-20 Matrix: SOIL **Single Metal in Soil by CRC ICPMS** **Metals in Soil by CRC ICPMS** Arsenic (As)	2210		0.10	mg/kg	08-AUG-20	08-AUG-20	R5176889
L2484668-28 EX-05-04 Sampled By: JR on 02-AUG-20 Matrix: SOIL **Single Metal in Soil by CRC ICPMS** **Metals in Soil by CRC ICPMS** Arsenic (As)	2490		0.10	mg/kg	08-AUG-20	08-AUG-20	R5176889
L2484668-29 EX-05-05 Sampled By: JR on 02-AUG-20 Matrix: SOIL **Single Metal in Soil by CRC ICPMS** **Metals in Soil by CRC ICPMS** Arsenic (As)	2050		0.10	mg/kg	08-AUG-20	08-AUG-20	R5176889

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
MET-200.2-CCMS-ED	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020A (mod)

Soil/sediment is dried, disaggregated, and sieved (2 mm). Strong Acid Leachable Metals in the <2mm fraction are solubilized by heated digestion with nitric and hydrochloric acids. Instrumental analysis is by Collision / Reaction Cell ICPMS.

Limitations: This method is intended to liberate environmentally available metals. Silicate minerals are not solubilized. Some metals may be only partially recovered (matrix dependent), including Al, Ba, Be, Cr, S, Sr, Ti, Tl, V, W, and Zr. Elemental Sulfur may be poorly recovered by this method. Volatile forms of sulfur (e.g. sulfide, H2S) may be excluded if lost during sampling, storage, or digestion.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
ED	ALS ENVIRONMENTAL - EDMONTON, ALBERTA, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Client: GOLDER ASSOCIATES LTD
16820 107 Ave NW
EDMONTON AB T5P 4C3
Contact: Steven Fiddler

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-ED	**Soil**							
Batch R5176889								
WG3379124-3 CRM		**TILL-1_SOIL**						
Arsenic (As)			110.3		%		70-130	08-AUG-20
WG3379124-4 DUP		**L2484668-29**						
Arsenic (As)		2050	2740		mg/kg	29	30	08-AUG-20
WG3379124-2 LCS								
Arsenic (As)			102.0		%		80-120	08-AUG-20
WG3379124-1 MB								
Arsenic (As)			<0.10		mg/kg		0.1	08-AUG-20

Quality Control Report

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number:

Page 1 of 3

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report ☑ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax k.lewis@mandalayresources.com
Email 2 sfiddler@golder.com
Email 3 jmusijowski@golder.com

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax
Email 2

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☑ | Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #: Q80711
Job #: 1913615B
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only): L2484668

ALS Contact: Oliver Gregg Sampler: JR

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Total Arsenic	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	EX-01-01	01/08/20		Soil	1	✓		
	EX-01-02				1	✓		
	EX-01-03				1	✓		
	EX-01-04				1	✓		
	EX-01-10				1	✓		
	EX-02-03				1	✓		
	EX-02-04				1	✓		
	EX-02-06				1	✓		
	EX-02-07				1	✓		
	EX-02-10				1	✓		
	EX-03-01				1	✓		
	EX-03-02				1	✓		

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO
Are samples for human consumption/ use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
8.4							

SHIPMENT RELEASE (client use)

Released by: Jeff Rogers Date: 05/08/20 Time: 10:00

INITIAL SHIPMENT RECEPTION (lab use only)

Received by: Date: SA-, 20 Time: 1330

FINAL SHIPMENT RECEPTION (lab use only)

Received by: Date: Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCT 2018 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number:

Page 2 of 3

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report ☑ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax k.lewis@mandalayresources.com
Email 2 sfiddler@golder.com
Email 3 jmusijowski@golder.com

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax
Email 2

Project Information

ALS Account # / Quote #: Q80711
Job #: 19136158
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only):

ALS Contact: Oliver Gregg Sampler: JR

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☑ | Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Total Arsenic	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	EX-03-03	01/08/20		Soil	1	✓		
	EX-03-05	↓		↓	1	✓		
	EX-03-09	↓		↓	1	✓		
	EX-04-06	02/08/20		↓	1	✓		
	EX-04-09	↓		↓	1	✓		
	EX-04-11	↓		↓	1	✓		
	EX-04-12	↓		↓	1	✓		
	EX-04-13	↓		↓	1	✓		
	EX-04-17	↓		↓	1	✓		
	EX-04-18	↓		↓	1	✓		
	EX-04-19	↓		↓	1	✓		
	EX-04-25	↓		↓	1	✓		

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human consumption/ use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C	FINAL COOLER TEMPERATURES °C
6 4	

SHIPMENT RELEASE (client use)

Released by:	Date:	Time:
Jeff Keyes	05/08/20	10:00

INITIAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:
	5 Aug 20	13:30

FINAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCT 2018 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number:

Page 3 of 3

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)

Quality Control (QC) Report with Report ☑ YES ☐ NO

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax k.lewis@mandalayresources.com

Email 2 sfiddler@golder.com

Email 3 jmusijowski@golder.com

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax

Email 2

Project Information

ALS Account # / Quote #: Q80711

Job #: 19136158

PO / AFE:

LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#

Major/Minor Code: Routing Code:

Requisitioner:

Location:

ALS Lab Work Order # (lab use only):

ALS Contact: Oliver Gregg **Sampler:** JR

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☑ | Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Total Arsenic	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	EX-05-01	05/08/20		Soil	1	✓		
	EX-05-02	02/08/20		"	1	✓		
	EX-05-03	02/08/20		"	1	✓		
	EX-05-04	02/08/20		"	1	✓		
	EX-05-05	02/08/20		"	1	✓		

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human consumption/ use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
6.1							

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Jeff Rogers	Date: 05/08/20	Time: 10:0	Received by:	Date: 5 Aug 20	Time: 13:30	Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCT 2018 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

GOLDER ASSOCIATES LTD
ATTN: Steven Fiddler
16820 107 Ave NW
EDMONTON AB T5P 4C3

Date Received: 12-AUG-20
Report Date: 19-AUG-20 17:39 (MT)
Version: FINAL REV. 3

Client Phone: 780-483-3499

Certificate of Analysis

Lab Work Order #: L2487835

Project P.O. #: NOT SUBMITTED
Job Reference: 19136158
C of C Numbers:
Legal Site Desc:

Minnie Estigoy, Chem. Eng. Tech. DIPL
Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2487835-1 EX-06-06							
Sampled By: J.Rogers on 02-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	02-AUG-20	14-AUG-20	R5183656
Toluene	0.154		0.050	mg/kg	02-AUG-20	14-AUG-20	R5183656
Ethylbenzene	<0.010		0.010	mg/kg	02-AUG-20	14-AUG-20	R5183656
m+p-Xylene	<0.050		0.050	mg/kg	02-AUG-20	14-AUG-20	R5183656
o-Xylene	<0.050		0.050	mg/kg	02-AUG-20	14-AUG-20	R5183656
Xylenes	<0.10		0.10	mg/kg	02-AUG-20	14-AUG-20	R5183656
Surrogate: 1,4-Difluorobenzene (SS)	91.5		70-130	%	02-AUG-20	14-AUG-20	R5183656
Surrogate: 4-Bromofluorobenzene (SS)	73.5		70-130	%	02-AUG-20	14-AUG-20	R5183656
Surrogate: 3,4-Dichlorotoluene (SS)	100.2		70-130	%	02-AUG-20	14-AUG-20	R5183656
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	83.8		70-130	%	14-AUG-20	15-AUG-20	R5189731
Chrom. to baseline at nC50	YES				14-AUG-20	15-AUG-20	R5189731
Prep/Analysis Dates					14-AUG-20	15-AUG-20	R5189731
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		15-AUG-20	
F1-BTEX	<10		10	mg/kg		15-AUG-20	
F2 (C10-C16)	<20		20	mg/kg		15-AUG-20	
F3 (C16-C34)	<20		20	mg/kg		15-AUG-20	
F4 (C34-C50)	<20		20	mg/kg		15-AUG-20	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		15-AUG-20	
Miscellaneous Parameters							
% Moisture	11.0		0.25	%		14-AUG-20	R5189615
L2487835-2 EX-06-20							
Sampled By: J.Rogers on 03-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	03-AUG-20	14-AUG-20	R5183656
Toluene	0.064		0.050	mg/kg	03-AUG-20	14-AUG-20	R5183656
Ethylbenzene	<0.010		0.010	mg/kg	03-AUG-20	14-AUG-20	R5183656
m+p-Xylene	<0.050		0.050	mg/kg	03-AUG-20	14-AUG-20	R5183656
o-Xylene	<0.050		0.050	mg/kg	03-AUG-20	14-AUG-20	R5183656
Xylenes	<0.10		0.10	mg/kg	03-AUG-20	14-AUG-20	R5183656
Surrogate: 1,4-Difluorobenzene (SS)	84.8		70-130	%	03-AUG-20	14-AUG-20	R5183656
Surrogate: 4-Bromofluorobenzene (SS)	70.4		70-130	%	03-AUG-20	14-AUG-20	R5183656
Surrogate: 3,4-Dichlorotoluene (SS)	91.9		70-130	%	03-AUG-20	14-AUG-20	R5183656
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	83.8		70-130	%	14-AUG-20	15-AUG-20	R5189731
Chrom. to baseline at nC50	YES				14-AUG-20	15-AUG-20	R5189731
Prep/Analysis Dates					14-AUG-20	15-AUG-20	R5189731
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		15-AUG-20	
F1-BTEX	<10		10	mg/kg		15-AUG-20	
F2 (C10-C16)	<20		20	mg/kg		15-AUG-20	
F3 (C16-C34)	85		20	mg/kg		15-AUG-20	
F4 (C34-C50)	<20		20	mg/kg		15-AUG-20	
Total Hydrocarbons (C6-C50)	85		20	mg/kg		15-AUG-20	
Miscellaneous Parameters							
% Moisture	10.2		0.25	%		14-AUG-20	R5189615

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2487835-3 EX-06-21							
Sampled By: J.Rogers on 08-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	08-AUG-20	14-AUG-20	R5183656
Toluene	3.08		0.050	mg/kg	08-AUG-20	14-AUG-20	R5183656
Ethylbenzene	<0.010		0.010	mg/kg	08-AUG-20	14-AUG-20	R5183656
m+p-Xylene	<0.050		0.050	mg/kg	08-AUG-20	14-AUG-20	R5183656
o-Xylene	<0.050		0.050	mg/kg	08-AUG-20	14-AUG-20	R5183656
Xylenes	<0.10		0.10	mg/kg	08-AUG-20	14-AUG-20	R5183656
Surrogate: 1,4-Difluorobenzene (SS)	92.4		70-130	%	08-AUG-20	14-AUG-20	R5183656
Surrogate: 4-Bromofluorobenzene (SS)	72.2		70-130	%	08-AUG-20	14-AUG-20	R5183656
Surrogate: 3,4-Dichlorotoluene (SS)	98.7		70-130	%	08-AUG-20	14-AUG-20	R5183656
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	78.7		70-130	%	14-AUG-20	15-AUG-20	R5189731
Chrom. to baseline at nC50	YES				14-AUG-20	15-AUG-20	R5189731
Prep/Analysis Dates					14-AUG-20	15-AUG-20	R5189731
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		15-AUG-20	
F1-BTEX	<10		10	mg/kg		15-AUG-20	
F2 (C10-C16)	<20		20	mg/kg		15-AUG-20	
F3 (C16-C34)	86		20	mg/kg		15-AUG-20	
F4 (C34-C50)	<20		20	mg/kg		15-AUG-20	
Total Hydrocarbons (C6-C50)	86		20	mg/kg		15-AUG-20	
Miscellaneous Parameters							
% Moisture	10.7		0.25	%		14-AUG-20	R5189615
L2487835-4 EX-06-22							
Sampled By: J.Rogers on 08-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	08-AUG-20	14-AUG-20	R5183656
Toluene	0.291		0.050	mg/kg	08-AUG-20	14-AUG-20	R5183656
Ethylbenzene	<0.010		0.010	mg/kg	08-AUG-20	14-AUG-20	R5183656
m+p-Xylene	<0.050		0.050	mg/kg	08-AUG-20	14-AUG-20	R5183656
o-Xylene	<0.050		0.050	mg/kg	08-AUG-20	14-AUG-20	R5183656
Xylenes	<0.10		0.10	mg/kg	08-AUG-20	14-AUG-20	R5183656
Surrogate: 1,4-Difluorobenzene (SS)	95.9		70-130	%	08-AUG-20	14-AUG-20	R5183656
Surrogate: 4-Bromofluorobenzene (SS)	77.7		70-130	%	08-AUG-20	14-AUG-20	R5183656
Surrogate: 3,4-Dichlorotoluene (SS)	112.8		70-130	%	08-AUG-20	14-AUG-20	R5183656
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	74.6		70-130	%	14-AUG-20	15-AUG-20	R5189731
Chrom. to baseline at nC50	YES				14-AUG-20	15-AUG-20	R5189731
Prep/Analysis Dates					14-AUG-20	15-AUG-20	R5189731
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		15-AUG-20	
F1-BTEX	<10		10	mg/kg		15-AUG-20	
F2 (C10-C16)	<20		20	mg/kg		15-AUG-20	
F3 (C16-C34)	<20		20	mg/kg		15-AUG-20	
F4 (C34-C50)	<20		20	mg/kg		15-AUG-20	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		15-AUG-20	
Miscellaneous Parameters							
% Moisture	9.49		0.25	%		14-AUG-20	R5189615

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2487835-5 EX-06-23							
Sampled By: J.Rogers on 05-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	05-AUG-20	14-AUG-20	R5183656
Toluene	<0.050		0.050	mg/kg	05-AUG-20	14-AUG-20	R5183656
Ethylbenzene	<0.010		0.010	mg/kg	05-AUG-20	14-AUG-20	R5183656
m+p-Xylene	<0.050		0.050	mg/kg	05-AUG-20	14-AUG-20	R5183656
o-Xylene	<0.050		0.050	mg/kg	05-AUG-20	14-AUG-20	R5183656
Xylenes	<0.10		0.10	mg/kg	05-AUG-20	14-AUG-20	R5183656
Surrogate: 1,4-Difluorobenzene (SS)	94.2		70-130	%	05-AUG-20	14-AUG-20	R5183656
Surrogate: 4-Bromofluorobenzene (SS)	73.5		70-130	%	05-AUG-20	14-AUG-20	R5183656
Surrogate: 3,4-Dichlorotoluene (SS)	109.8		70-130	%	05-AUG-20	14-AUG-20	R5183656
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	82.4		70-130	%	14-AUG-20	15-AUG-20	R5189731
Chrom. to baseline at nC50	YES				14-AUG-20	15-AUG-20	R5189731
Prep/Analysis Dates					14-AUG-20	15-AUG-20	R5189731
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		15-AUG-20	
F1-BTEX	<10		10	mg/kg		15-AUG-20	
F2 (C10-C16)	<20		20	mg/kg		15-AUG-20	
F3 (C16-C34)	<20		20	mg/kg		15-AUG-20	
F4 (C34-C50)	<20		20	mg/kg		15-AUG-20	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		15-AUG-20	
Miscellaneous Parameters							
% Moisture	10.7		0.25	%		14-AUG-20	R5189615
L2487835-6 EX-06-24							
Sampled By: J.Rogers on 05-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	05-AUG-20	14-AUG-20	R5183656
Toluene	<0.050		0.050	mg/kg	05-AUG-20	14-AUG-20	R5183656
Ethylbenzene	<0.010		0.010	mg/kg	05-AUG-20	14-AUG-20	R5183656
m+p-Xylene	<0.050		0.050	mg/kg	05-AUG-20	14-AUG-20	R5183656
o-Xylene	<0.050		0.050	mg/kg	05-AUG-20	14-AUG-20	R5183656
Xylenes	<0.10		0.10	mg/kg	05-AUG-20	14-AUG-20	R5183656
Surrogate: 1,4-Difluorobenzene (SS)	84.2		70-130	%	05-AUG-20	14-AUG-20	R5183656
Surrogate: 4-Bromofluorobenzene (SS)	71.4		70-130	%	05-AUG-20	14-AUG-20	R5183656
Surrogate: 3,4-Dichlorotoluene (SS)	99.6		70-130	%	05-AUG-20	14-AUG-20	R5183656
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	82.4		70-130	%	14-AUG-20	15-AUG-20	R5189731
Chrom. to baseline at nC50	YES				14-AUG-20	15-AUG-20	R5189731
Prep/Analysis Dates					14-AUG-20	15-AUG-20	R5189731
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		15-AUG-20	
F1-BTEX	<10		10	mg/kg		15-AUG-20	
F2 (C10-C16)	<20		20	mg/kg		15-AUG-20	
F3 (C16-C34)	<20		20	mg/kg		15-AUG-20	
F4 (C34-C50)	<20		20	mg/kg		15-AUG-20	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		15-AUG-20	
Miscellaneous Parameters							
% Moisture	8.89		0.25	%		14-AUG-20	R5189615

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2487835-7 EX-06-25							
Sampled By: J.Rogers on 05-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	05-AUG-20	14-AUG-20	R5183656
Toluene	0.191		0.050	mg/kg	05-AUG-20	14-AUG-20	R5183656
Ethylbenzene	<0.010		0.010	mg/kg	05-AUG-20	14-AUG-20	R5183656
m+p-Xylene	<0.050		0.050	mg/kg	05-AUG-20	14-AUG-20	R5183656
o-Xylene	<0.050		0.050	mg/kg	05-AUG-20	14-AUG-20	R5183656
Xylenes	<0.10		0.10	mg/kg	05-AUG-20	14-AUG-20	R5183656
Surrogate: 1,4-Difluorobenzene (SS)	92.0		70-130	%	05-AUG-20	14-AUG-20	R5183656
Surrogate: 4-Bromofluorobenzene (SS)	75.4		70-130	%	05-AUG-20	14-AUG-20	R5183656
Surrogate: 3,4-Dichlorotoluene (SS)	102.4		70-130	%	05-AUG-20	14-AUG-20	R5183656
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	76.2		70-130	%	14-AUG-20	15-AUG-20	R5189731
Chrom. to baseline at nC50	YES				14-AUG-20	15-AUG-20	R5189731
Prep/Analysis Dates					14-AUG-20	15-AUG-20	R5189731
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		15-AUG-20	
F1-BTEX	<10		10	mg/kg		15-AUG-20	
F2 (C10-C16)	<20		20	mg/kg		15-AUG-20	
F3 (C16-C34)	30		20	mg/kg		15-AUG-20	
F4 (C34-C50)	24		20	mg/kg		15-AUG-20	
Total Hydrocarbons (C6-C50)	54		20	mg/kg		15-AUG-20	
Miscellaneous Parameters							
% Moisture	9.52		0.25	%		14-AUG-20	R5189615
L2487835-8 EX-06-26							
Sampled By: J.Rogers on 08-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	08-AUG-20	14-AUG-20	R5183656
Toluene	0.098		0.050	mg/kg	08-AUG-20	14-AUG-20	R5183656
Ethylbenzene	<0.010		0.010	mg/kg	08-AUG-20	14-AUG-20	R5183656
m+p-Xylene	<0.050		0.050	mg/kg	08-AUG-20	14-AUG-20	R5183656
o-Xylene	<0.050		0.050	mg/kg	08-AUG-20	14-AUG-20	R5183656
Xylenes	<0.10		0.10	mg/kg	08-AUG-20	14-AUG-20	R5183656
Surrogate: 1,4-Difluorobenzene (SS)	83.0		70-130	%	08-AUG-20	14-AUG-20	R5183656
Surrogate: 4-Bromofluorobenzene (SS)	66.3	SOL:MI	70-130	%	08-AUG-20	14-AUG-20	R5183656
Surrogate: 3,4-Dichlorotoluene (SS)	93.7		70-130	%	08-AUG-20	14-AUG-20	R5183656
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	83.2		70-130	%	14-AUG-20	15-AUG-20	R5189731
Chrom. to baseline at nC50	YES				14-AUG-20	15-AUG-20	R5189731
Prep/Analysis Dates					14-AUG-20	15-AUG-20	R5189731
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		17-AUG-20	
F1-BTEX	<10		10	mg/kg		17-AUG-20	
F2 (C10-C16)	<20		20	mg/kg		17-AUG-20	
F3 (C16-C34)	<20		20	mg/kg		17-AUG-20	
F4 (C34-C50)	<20		20	mg/kg		17-AUG-20	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		17-AUG-20	
Miscellaneous Parameters							
% Moisture	9.25		0.25	%		14-AUG-20	R5189615

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2487835-9 EX-06-27							
Sampled By: J.Rogers on 08-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	08-AUG-20	14-AUG-20	R5183656
Toluene	0.148		0.050	mg/kg	08-AUG-20	14-AUG-20	R5183656
Ethylbenzene	<0.010		0.010	mg/kg	08-AUG-20	14-AUG-20	R5183656
m+p-Xylene	<0.050		0.050	mg/kg	08-AUG-20	14-AUG-20	R5183656
o-Xylene	<0.050		0.050	mg/kg	08-AUG-20	14-AUG-20	R5183656
Xylenes	<0.10		0.10	mg/kg	08-AUG-20	14-AUG-20	R5183656
Surrogate: 1,4-Difluorobenzene (SS)	81.6		70-130	%	08-AUG-20	14-AUG-20	R5183656
Surrogate: 4-Bromofluorobenzene (SS)	66.0	SOL:MI	70-130	%	08-AUG-20	14-AUG-20	R5183656
Surrogate: 3,4-Dichlorotoluene (SS)	91.9		70-130	%	08-AUG-20	14-AUG-20	R5183656
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	74.7		70-130	%	14-AUG-20	15-AUG-20	R5189731
Chrom. to baseline at nC50	YES				14-AUG-20	15-AUG-20	R5189731
Prep/Analysis Dates					14-AUG-20	15-AUG-20	R5189731
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		17-AUG-20	
F1-BTEX	<10		10	mg/kg		17-AUG-20	
F2 (C10-C16)	<20		20	mg/kg		17-AUG-20	
F3 (C16-C34)	22		20	mg/kg		17-AUG-20	
F4 (C34-C50)	<20		20	mg/kg		17-AUG-20	
Total Hydrocarbons (C6-C50)	22		20	mg/kg		17-AUG-20	
Miscellaneous Parameters							
% Moisture	10.1		0.25	%		14-AUG-20	R5189615
L2487835-10 EX-06-30							
Sampled By: J.Rogers on 06-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	06-AUG-20	14-AUG-20	R5183656
Toluene	0.388		0.050	mg/kg	06-AUG-20	14-AUG-20	R5183656
Ethylbenzene	0.085		0.010	mg/kg	06-AUG-20	14-AUG-20	R5183656
m+p-Xylene	0.450		0.050	mg/kg	06-AUG-20	14-AUG-20	R5183656
o-Xylene	0.174		0.050	mg/kg	06-AUG-20	14-AUG-20	R5183656
Xylenes	0.62		0.10	mg/kg	06-AUG-20	14-AUG-20	R5183656
Surrogate: 1,4-Difluorobenzene (SS)	81.6		70-130	%	06-AUG-20	14-AUG-20	R5183656
Surrogate: 4-Bromofluorobenzene (SS)	93.3		70-130	%	06-AUG-20	14-AUG-20	R5183656
Surrogate: 3,4-Dichlorotoluene (SS)	72.1		70-130	%	06-AUG-20	14-AUG-20	R5183656
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	82.7		70-130	%	14-AUG-20	15-AUG-20	R5189731
Chrom. to baseline at nC50	YES				14-AUG-20	15-AUG-20	R5189731
Prep/Analysis Dates					14-AUG-20	15-AUG-20	R5189731
CCME Total Hydrocarbons							
F1 (C6-C10)	15		10	mg/kg		15-AUG-20	
F1-BTEX	14		10	mg/kg		15-AUG-20	
F2 (C10-C16)	<20		20	mg/kg		15-AUG-20	
F3 (C16-C34)	<20		20	mg/kg		15-AUG-20	
F4 (C34-C50)	<20		20	mg/kg		15-AUG-20	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		15-AUG-20	
Miscellaneous Parameters							
% Moisture	10.6		0.25	%		14-AUG-20	R5189615

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2487835-11 EX-06-35							
Sampled By: J.Rogers on 08-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	08-AUG-20	14-AUG-20	R5183656
Toluene	0.108		0.050	mg/kg	08-AUG-20	14-AUG-20	R5183656
Ethylbenzene	<0.010		0.010	mg/kg	08-AUG-20	14-AUG-20	R5183656
m+p-Xylene	<0.050		0.050	mg/kg	08-AUG-20	14-AUG-20	R5183656
o-Xylene	<0.050		0.050	mg/kg	08-AUG-20	14-AUG-20	R5183656
Xylenes	<0.10		0.10	mg/kg	08-AUG-20	14-AUG-20	R5183656
Surrogate: 1,4-Difluorobenzene (SS)	92.5		70-130	%	08-AUG-20	14-AUG-20	R5183656
Surrogate: 4-Bromofluorobenzene (SS)	75.4		70-130	%	08-AUG-20	14-AUG-20	R5183656
Surrogate: 3,4-Dichlorotoluene (SS)	101.5		70-130	%	08-AUG-20	14-AUG-20	R5183656
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	78.2		70-130	%	14-AUG-20	15-AUG-20	R5189731
Chrom. to baseline at nC50	YES				14-AUG-20	15-AUG-20	R5189731
Prep/Analysis Dates					14-AUG-20	15-AUG-20	R5189731
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		15-AUG-20	
F1-BTEX	<10		10	mg/kg		15-AUG-20	
F2 (C10-C16)	<20		20	mg/kg		15-AUG-20	
F3 (C16-C34)	<20		20	mg/kg		15-AUG-20	
F4 (C34-C50)	<20		20	mg/kg		15-AUG-20	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		15-AUG-20	
Miscellaneous Parameters							
% Moisture	9.05		0.25	%		14-AUG-20	R5189615
L2487835-12 EX-06-36							
Sampled By: J.Rogers on 06-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	06-AUG-20	14-AUG-20	R5183656
Toluene	0.084		0.050	mg/kg	06-AUG-20	14-AUG-20	R5183656
Ethylbenzene	<0.010		0.010	mg/kg	06-AUG-20	14-AUG-20	R5183656
m+p-Xylene	<0.050		0.050	mg/kg	06-AUG-20	14-AUG-20	R5183656
o-Xylene	<0.050		0.050	mg/kg	06-AUG-20	14-AUG-20	R5183656
Xylenes	<0.10		0.10	mg/kg	06-AUG-20	14-AUG-20	R5183656
Surrogate: 1,4-Difluorobenzene (SS)	90.0		70-130	%	06-AUG-20	14-AUG-20	R5183656
Surrogate: 4-Bromofluorobenzene (SS)	95.0		70-130	%	06-AUG-20	14-AUG-20	R5183656
Surrogate: 3,4-Dichlorotoluene (SS)	65.5	SOL:MI	70-130	%	06-AUG-20	14-AUG-20	R5183656
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	88.1		70-130	%	14-AUG-20	15-AUG-20	R5189731
Chrom. to baseline at nC50	YES				14-AUG-20	15-AUG-20	R5189731
Prep/Analysis Dates					14-AUG-20	15-AUG-20	R5189731
CCME Total Hydrocarbons							
F1 (C6-C10)	18		10	mg/kg		17-AUG-20	
F1-BTEX	18		10	mg/kg		17-AUG-20	
F2 (C10-C16)	315		20	mg/kg		17-AUG-20	
F3 (C16-C34)	360		20	mg/kg		17-AUG-20	
F4 (C34-C50)	<20		20	mg/kg		17-AUG-20	
Total Hydrocarbons (C6-C50)	693		20	mg/kg		17-AUG-20	
Miscellaneous Parameters							
% Moisture	9.28		0.25	%		14-AUG-20	R5189615

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2487835-13 EX-06-37							
Sampled By: J.Rogers on 08-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	08-AUG-20	14-AUG-20	R5183656
Toluene	0.093		0.050	mg/kg	08-AUG-20	14-AUG-20	R5183656
Ethylbenzene	<0.010		0.010	mg/kg	08-AUG-20	14-AUG-20	R5183656
m+p-Xylene	<0.050		0.050	mg/kg	08-AUG-20	14-AUG-20	R5183656
o-Xylene	<0.050		0.050	mg/kg	08-AUG-20	14-AUG-20	R5183656
Xylenes	<0.10		0.10	mg/kg	08-AUG-20	14-AUG-20	R5183656
Surrogate: 1,4-Difluorobenzene (SS)	88.3		70-130	%	08-AUG-20	14-AUG-20	R5183656
Surrogate: 4-Bromofluorobenzene (SS)	78.7		70-130	%	08-AUG-20	14-AUG-20	R5183656
Surrogate: 3,4-Dichlorotoluene (SS)	80.3		70-130	%	08-AUG-20	14-AUG-20	R5183656
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	83.1		70-130	%	14-AUG-20	15-AUG-20	R5189731
Chrom. to baseline at nC50	YES				14-AUG-20	15-AUG-20	R5189731
Prep/Analysis Dates					14-AUG-20	15-AUG-20	R5189731
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		15-AUG-20	
F1-BTEX	<10		10	mg/kg		15-AUG-20	
F2 (C10-C16)	<20		20	mg/kg		15-AUG-20	
F3 (C16-C34)	<20		20	mg/kg		15-AUG-20	
F4 (C34-C50)	<20		20	mg/kg		15-AUG-20	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		15-AUG-20	
Miscellaneous Parameters							
% Moisture	11.9		0.25	%		14-AUG-20	R5189615
L2487835-14 EX-06-42							
Sampled By: J.Rogers on 08-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	08-AUG-20	14-AUG-20	R5183656
Toluene	0.052		0.050	mg/kg	08-AUG-20	14-AUG-20	R5183656
Ethylbenzene	<0.010		0.010	mg/kg	08-AUG-20	14-AUG-20	R5183656
m+p-Xylene	<0.050		0.050	mg/kg	08-AUG-20	14-AUG-20	R5183656
o-Xylene	<0.050		0.050	mg/kg	08-AUG-20	14-AUG-20	R5183656
Xylenes	<0.10		0.10	mg/kg	08-AUG-20	14-AUG-20	R5183656
Surrogate: 1,4-Difluorobenzene (SS)	84.6		70-130	%	08-AUG-20	14-AUG-20	R5183656
Surrogate: 4-Bromofluorobenzene (SS)	84.9		70-130	%	08-AUG-20	14-AUG-20	R5183656
Surrogate: 3,4-Dichlorotoluene (SS)	87.3		70-130	%	08-AUG-20	14-AUG-20	R5183656
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	87.4		70-130	%	14-AUG-20	15-AUG-20	R5189731
Chrom. to baseline at nC50	YES				14-AUG-20	15-AUG-20	R5189731
Prep/Analysis Dates					14-AUG-20	15-AUG-20	R5189731
CCME Total Hydrocarbons							
F1 (C6-C10)	24		10	mg/kg		15-AUG-20	
F1-BTEX	24		10	mg/kg		15-AUG-20	
F2 (C10-C16)	112		20	mg/kg		15-AUG-20	
F3 (C16-C34)	<20		20	mg/kg		15-AUG-20	
F4 (C34-C50)	<20		20	mg/kg		15-AUG-20	
Total Hydrocarbons (C6-C50)	136		20	mg/kg		15-AUG-20	
Miscellaneous Parameters							
% Moisture	16.8		0.25	%		14-AUG-20	R5189615

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2487835-15 EX-06-43							
Sampled By: J.Rogers on 06-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	06-AUG-20	14-AUG-20	R5183656
Toluene	0.077		0.050	mg/kg	06-AUG-20	14-AUG-20	R5183656
Ethylbenzene	<0.010		0.010	mg/kg	06-AUG-20	14-AUG-20	R5183656
m+p-Xylene	<0.050		0.050	mg/kg	06-AUG-20	14-AUG-20	R5183656
o-Xylene	<0.050		0.050	mg/kg	06-AUG-20	14-AUG-20	R5183656
Xylenes	<0.10		0.10	mg/kg	06-AUG-20	14-AUG-20	R5183656
Surrogate: 1,4-Difluorobenzene (SS)	85.4		70-130	%	06-AUG-20	14-AUG-20	R5183656
Surrogate: 4-Bromofluorobenzene (SS)	74.3		70-130	%	06-AUG-20	14-AUG-20	R5183656
Surrogate: 3,4-Dichlorotoluene (SS)	83.7		70-130	%	06-AUG-20	14-AUG-20	R5183656
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	91.3		70-130	%	14-AUG-20	15-AUG-20	R5189731
Chrom. to baseline at nC50	YES				14-AUG-20	15-AUG-20	R5189731
Prep/Analysis Dates					14-AUG-20	15-AUG-20	R5189731
CCME Total Hydrocarbons							
F1 (C6-C10)	13		10	mg/kg		15-AUG-20	
F1-BTEX	13		10	mg/kg		15-AUG-20	
F2 (C10-C16)	<20		20	mg/kg		15-AUG-20	
F3 (C16-C34)	33		20	mg/kg		15-AUG-20	
F4 (C34-C50)	29		20	mg/kg		15-AUG-20	
Total Hydrocarbons (C6-C50)	75		20	mg/kg		15-AUG-20	
Miscellaneous Parameters							
% Moisture	9.66		0.25	%		14-AUG-20	R5189615
L2487835-16 EX-06-45							
Sampled By: J.Rogers on 08-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	08-AUG-20	14-AUG-20	R5183656
Toluene	0.409		0.050	mg/kg	08-AUG-20	14-AUG-20	R5183656
Ethylbenzene	<0.010		0.010	mg/kg	08-AUG-20	14-AUG-20	R5183656
m+p-Xylene	<0.050		0.050	mg/kg	08-AUG-20	14-AUG-20	R5183656
o-Xylene	<0.050		0.050	mg/kg	08-AUG-20	14-AUG-20	R5183656
Xylenes	<0.10		0.10	mg/kg	08-AUG-20	14-AUG-20	R5183656
Surrogate: 1,4-Difluorobenzene (SS)	86.7		70-130	%	08-AUG-20	14-AUG-20	R5183656
Surrogate: 4-Bromofluorobenzene (SS)	80.2		70-130	%	08-AUG-20	14-AUG-20	R5183656
Surrogate: 3,4-Dichlorotoluene (SS)	79.0		70-130	%	08-AUG-20	14-AUG-20	R5183656
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	82.6		70-130	%	14-AUG-20	15-AUG-20	R5189731
Chrom. to baseline at nC50	YES				14-AUG-20	15-AUG-20	R5189731
Prep/Analysis Dates					14-AUG-20	15-AUG-20	R5189731
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		15-AUG-20	
F1-BTEX	<10		10	mg/kg		15-AUG-20	
F2 (C10-C16)	<20		20	mg/kg		15-AUG-20	
F3 (C16-C34)	<20		20	mg/kg		15-AUG-20	
F4 (C34-C50)	<20		20	mg/kg		15-AUG-20	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		15-AUG-20	
Miscellaneous Parameters							
% Moisture	9.66		0.25	%		14-AUG-20	R5189615

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2487835-17 EX-06-49							
Sampled By: J.Rogers on 06-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.395		0.0050	mg/kg	06-AUG-20	14-AUG-20	R5183656
Toluene	0.313		0.050	mg/kg	06-AUG-20	14-AUG-20	R5183656
Ethylbenzene	<0.010		0.010	mg/kg	06-AUG-20	14-AUG-20	R5183656
m+p-Xylene	<0.050		0.050	mg/kg	06-AUG-20	14-AUG-20	R5183656
o-Xylene	<0.050		0.050	mg/kg	06-AUG-20	14-AUG-20	R5183656
Xylenes	<0.10		0.10	mg/kg	06-AUG-20	14-AUG-20	R5183656
Surrogate: 1,4-Difluorobenzene (SS)	75.6		70-130	%	06-AUG-20	14-AUG-20	R5183656
Surrogate: 4-Bromofluorobenzene (SS)	62.4	SOL:MI	70-130	%	06-AUG-20	14-AUG-20	R5183656
Surrogate: 3,4-Dichlorotoluene (SS)	69.4	SOL:MI	70-130	%	06-AUG-20	14-AUG-20	R5183656
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	76.6		70-130	%	14-AUG-20	15-AUG-20	R5189731
Chrom. to baseline at nC50	NO				14-AUG-20	15-AUG-20	R5189731
Prep/Analysis Dates					14-AUG-20	15-AUG-20	R5189731
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		17-AUG-20	
F1-BTEX	<10		10	mg/kg		17-AUG-20	
F2 (C10-C16)	<20		20	mg/kg		17-AUG-20	
F3 (C16-C34)	344		20	mg/kg		17-AUG-20	
F4 (C34-C50)	301		20	mg/kg		17-AUG-20	
F4G-SG (GHH-Silica)	1230		500	mg/kg		17-AUG-20	
Total Hydrocarbons (C6-C50)	645		20	mg/kg		17-AUG-20	
Miscellaneous Parameters							
% Moisture	19.1		0.25	%		14-AUG-20	R5189615
F4G Prep/Analysis Dates					16-AUG-20	16-AUG-20	R5189777
L2487835-18 EX-06-54							
Sampled By: J.Rogers on 08-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.0858		0.0050	mg/kg	08-AUG-20	14-AUG-20	R5183656
Toluene	0.109		0.050	mg/kg	08-AUG-20	14-AUG-20	R5183656
Ethylbenzene	<0.010		0.010	mg/kg	08-AUG-20	14-AUG-20	R5183656
m+p-Xylene	<0.050		0.050	mg/kg	08-AUG-20	14-AUG-20	R5183656
o-Xylene	<0.050		0.050	mg/kg	08-AUG-20	14-AUG-20	R5183656
Xylenes	<0.10		0.10	mg/kg	08-AUG-20	14-AUG-20	R5183656
Surrogate: 1,4-Difluorobenzene (SS)	71.5		70-130	%	08-AUG-20	14-AUG-20	R5183656
Surrogate: 4-Bromofluorobenzene (SS)	62.1	SOL:MI	70-130	%	08-AUG-20	14-AUG-20	R5183656
Surrogate: 3,4-Dichlorotoluene (SS)	81.1		70-130	%	08-AUG-20	14-AUG-20	R5183656
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	86.7		70-130	%	14-AUG-20	15-AUG-20	R5189731
Chrom. to baseline at nC50	YES				14-AUG-20	15-AUG-20	R5189731
Prep/Analysis Dates					14-AUG-20	15-AUG-20	R5189731
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		17-AUG-20	
F1-BTEX	<10		10	mg/kg		17-AUG-20	
F2 (C10-C16)	<20		20	mg/kg		17-AUG-20	
F3 (C16-C34)	64		20	mg/kg		17-AUG-20	
F4 (C34-C50)	41		20	mg/kg		17-AUG-20	
Total Hydrocarbons (C6-C50)	105		20	mg/kg		17-AUG-20	
Miscellaneous Parameters							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2487835-18 EX-06-54							
Sampled By: J.Rogers on 08-AUG-20							
Matrix: SOIL							
% Moisture	12.3		0.25	%		14-AUG-20	R5189615
L2487835-19 EX-06-57							
Sampled By: J.Rogers on 08-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	08-AUG-20	14-AUG-20	R5183656
Toluene	0.071		0.050	mg/kg	08-AUG-20	14-AUG-20	R5183656
Ethylbenzene	<0.010		0.010	mg/kg	08-AUG-20	14-AUG-20	R5183656
m+p-Xylene	<0.050		0.050	mg/kg	08-AUG-20	14-AUG-20	R5183656
o-Xylene	<0.050		0.050	mg/kg	08-AUG-20	14-AUG-20	R5183656
Xylenes	<0.10		0.10	mg/kg	08-AUG-20	14-AUG-20	R5183656
Surrogate: 1,4-Difluorobenzene (SS)	77.0		70-130	%	08-AUG-20	14-AUG-20	R5183656
Surrogate: 4-Bromofluorobenzene (SS)	63.8	SOL:MI	70-130	%	08-AUG-20	14-AUG-20	R5183656
Surrogate: 3,4-Dichlorotoluene (SS)	78.4		70-130	%	08-AUG-20	14-AUG-20	R5183656
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	83.2		70-130	%	14-AUG-20	15-AUG-20	R5189731
Chrom. to baseline at nC50	YES				14-AUG-20	15-AUG-20	R5189731
Prep/Analysis Dates					14-AUG-20	15-AUG-20	R5189731
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		17-AUG-20	
F1-BTEX	<10		10	mg/kg		17-AUG-20	
F2 (C10-C16)	<20		20	mg/kg		17-AUG-20	
F3 (C16-C34)	<20		20	mg/kg		17-AUG-20	
F4 (C34-C50)	<20		20	mg/kg		17-AUG-20	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		17-AUG-20	
Miscellaneous Parameters							
% Moisture	9.67		0.25	%		14-AUG-20	R5189615
L2487835-20 EX-06-59							
Sampled By: J.Rogers on 08-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	08-AUG-20	14-AUG-20	R5183656
Toluene	0.075		0.050	mg/kg	08-AUG-20	14-AUG-20	R5183656
Ethylbenzene	<0.010		0.010	mg/kg	08-AUG-20	14-AUG-20	R5183656
m+p-Xylene	<0.050		0.050	mg/kg	08-AUG-20	14-AUG-20	R5183656
o-Xylene	<0.050		0.050	mg/kg	08-AUG-20	14-AUG-20	R5183656
Xylenes	<0.10		0.10	mg/kg	08-AUG-20	14-AUG-20	R5183656
Surrogate: 1,4-Difluorobenzene (SS)	78.0		70-130	%	08-AUG-20	14-AUG-20	R5183656
Surrogate: 4-Bromofluorobenzene (SS)	67.1	SOL:MI	70-130	%	08-AUG-20	14-AUG-20	R5183656
Surrogate: 3,4-Dichlorotoluene (SS)	75.8		70-130	%	08-AUG-20	14-AUG-20	R5183656
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	86.7		70-130	%	14-AUG-20	15-AUG-20	R5189731
Chrom. to baseline at nC50	NO				14-AUG-20	15-AUG-20	R5189731
Prep/Analysis Dates					14-AUG-20	15-AUG-20	R5189731
CCME Total Hydrocarbons							
F1 (C6-C10)	12		10	mg/kg		17-AUG-20	
F1-BTEX	12		10	mg/kg		17-AUG-20	
F2 (C10-C16)	<20		20	mg/kg		17-AUG-20	
F3 (C16-C34)	139		20	mg/kg		17-AUG-20	
F4 (C34-C50)	109		20	mg/kg		17-AUG-20	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2487835-20 EX-06-59							
Sampled By: J.Rogers on 08-AUG-20							
Matrix: SOIL							
CCME Total Hydrocarbons							
F4G-SG (GHH-Silica)	<500		500	mg/kg		17-AUG-20	
Total Hydrocarbons (C6-C50)	260		20	mg/kg		17-AUG-20	
Miscellaneous Parameters							
% Moisture	18.1		0.25	%		14-AUG-20	R5189615
F4G Prep/Analysis Dates					16-AUG-20	16-AUG-20	R5189777
L2487835-21 EX-06-60							
Sampled By: J.Rogers on 07-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0118	DLCI	0.012	mg/kg	07-AUG-20	14-AUG-20	R5179757
Toluene	0.126		0.050	mg/kg	07-AUG-20	14-AUG-20	R5179757
Ethylbenzene	0.025		0.010	mg/kg	07-AUG-20	14-AUG-20	R5179757
m+p-Xylene	0.097		0.050	mg/kg	07-AUG-20	14-AUG-20	R5179757
o-Xylene	<0.050		0.050	mg/kg	07-AUG-20	14-AUG-20	R5179757
Xylenes	<0.10		0.10	mg/kg	07-AUG-20	14-AUG-20	R5179757
Surrogate: 1,4-Difluorobenzene (SS)	75.7		70-130	%	07-AUG-20	14-AUG-20	R5179757
Surrogate: 4-Bromofluorobenzene (SS)	73.2		70-130	%	07-AUG-20	14-AUG-20	R5179757
Surrogate: 3,4-Dichlorotoluene (SS)	52.8	SOL:MI	70-130	%	07-AUG-20	14-AUG-20	R5179757
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	75.5		70-130	%	14-AUG-20	15-AUG-20	R5189731
Chrom. to baseline at nC50	NO				14-AUG-20	15-AUG-20	R5189731
Prep/Analysis Dates					14-AUG-20	15-AUG-20	R5189731
CCME Total Hydrocarbons							
F1 (C6-C10)	29		10	mg/kg		17-AUG-20	
F1-BTEX	29		10	mg/kg		17-AUG-20	
F2 (C10-C16)	<20		20	mg/kg		17-AUG-20	
F3 (C16-C34)	160		20	mg/kg		17-AUG-20	
F4 (C34-C50)	152		20	mg/kg		17-AUG-20	
F4G-SG (GHH-Silica)	<500		500	mg/kg		17-AUG-20	
Total Hydrocarbons (C6-C50)	341		20	mg/kg		17-AUG-20	
Miscellaneous Parameters							
% Moisture	18.9		0.25	%		14-AUG-20	R5189612
F4G Prep/Analysis Dates					16-AUG-20	16-AUG-20	R5189777
L2487835-22 EX-06-65							
Sampled By: J.Rogers on 07-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	07-AUG-20	14-AUG-20	R5179757
Toluene	0.083		0.050	mg/kg	07-AUG-20	14-AUG-20	R5179757
Ethylbenzene	0.038		0.010	mg/kg	07-AUG-20	14-AUG-20	R5179757
m+p-Xylene	0.100		0.050	mg/kg	07-AUG-20	14-AUG-20	R5179757
o-Xylene	0.059		0.050	mg/kg	07-AUG-20	14-AUG-20	R5179757
Xylenes	0.16		0.10	mg/kg	07-AUG-20	14-AUG-20	R5179757
Surrogate: 1,4-Difluorobenzene (SS)	93.1		70-130	%	07-AUG-20	14-AUG-20	R5179757
Surrogate: 4-Bromofluorobenzene (SS)	73.5		70-130	%	07-AUG-20	14-AUG-20	R5179757
Surrogate: 3,4-Dichlorotoluene (SS)	47.3	SOL:MI	70-130	%	07-AUG-20	14-AUG-20	R5179757
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	79.5		70-130	%	14-AUG-20	15-AUG-20	R5189731

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2487835-22 EX-06-65							
Sampled By: J.Rogers on 07-AUG-20							
Matrix: SOIL							
CCME Total Extractable Hydrocarbons							
Chrom. to baseline at nC50	YES				14-AUG-20	15-AUG-20	R5189731
Prep/Analysis Dates					14-AUG-20	15-AUG-20	R5189731
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		17-AUG-20	
F1-BTEX	<10		10	mg/kg		17-AUG-20	
F2 (C10-C16)	<20		20	mg/kg		17-AUG-20	
F3 (C16-C34)	22		20	mg/kg		17-AUG-20	
F4 (C34-C50)	<20		20	mg/kg		17-AUG-20	
Total Hydrocarbons (C6-C50)	22		20	mg/kg		17-AUG-20	
Miscellaneous Parameters							
% Moisture	8.51		0.25	%		14-AUG-20	R5189612
L2487835-23 EX-06-72							
Sampled By: J.Rogers on 09-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	09-AUG-20	14-AUG-20	R5179757
Toluene	<0.050		0.050	mg/kg	09-AUG-20	14-AUG-20	R5179757
Ethylbenzene	<0.010		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
m+p-Xylene	<0.050		0.050	mg/kg	09-AUG-20	14-AUG-20	R5179757
o-Xylene	<0.050		0.050	mg/kg	09-AUG-20	14-AUG-20	R5179757
Xylenes	<0.10		0.10	mg/kg	09-AUG-20	14-AUG-20	R5179757
Surrogate: 1,4-Difluorobenzene (SS)	87.7		70-130	%	09-AUG-20	14-AUG-20	R5179757
Surrogate: 4-Bromofluorobenzene (SS)	77.8		70-130	%	09-AUG-20	14-AUG-20	R5179757
Surrogate: 3,4-Dichlorotoluene (SS)	78.3		70-130	%	09-AUG-20	14-AUG-20	R5179757
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	80.7		70-130	%	14-AUG-20	15-AUG-20	R5189731
Chrom. to baseline at nC50	YES				14-AUG-20	15-AUG-20	R5189731
Prep/Analysis Dates					14-AUG-20	15-AUG-20	R5189731
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		15-AUG-20	
F1-BTEX	<10		10	mg/kg		15-AUG-20	
F2 (C10-C16)	<20		20	mg/kg		15-AUG-20	
F3 (C16-C34)	<20		20	mg/kg		15-AUG-20	
F4 (C34-C50)	<20		20	mg/kg		15-AUG-20	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		15-AUG-20	
Miscellaneous Parameters							
% Moisture	11.9		0.25	%		14-AUG-20	R5189612
L2487835-24 EX-06-74							
Sampled By: J.Rogers on 09-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	09-AUG-20	14-AUG-20	R5179757
Toluene	0.075		0.050	mg/kg	09-AUG-20	14-AUG-20	R5179757
Ethylbenzene	<0.010		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
m+p-Xylene	<0.050		0.050	mg/kg	09-AUG-20	14-AUG-20	R5179757
o-Xylene	<0.050		0.050	mg/kg	09-AUG-20	14-AUG-20	R5179757
Xylenes	<0.10		0.10	mg/kg	09-AUG-20	14-AUG-20	R5179757
Surrogate: 1,4-Difluorobenzene (SS)	87.4		70-130	%	09-AUG-20	14-AUG-20	R5179757
Surrogate: 4-Bromofluorobenzene (SS)	73.7		70-130	%	09-AUG-20	14-AUG-20	R5179757

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2487835-24 EX-06-74							
Sampled By: J.Rogers on 09-AUG-20							
Matrix: SOIL							
BTEX and F1							
Surrogate: 3,4-Dichlorotoluene (SS)	66.0	SOL:MI	70-130	%	09-AUG-20	14-AUG-20	R5179757
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	79.0		70-130	%	14-AUG-20	15-AUG-20	R5189731
Chrom. to baseline at nC50	YES				14-AUG-20	15-AUG-20	R5189731
Prep/Analysis Dates					14-AUG-20	15-AUG-20	R5189731
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		17-AUG-20	
F1-BTEX	<10		10	mg/kg		17-AUG-20	
F2 (C10-C16)	<20		20	mg/kg		17-AUG-20	
F3 (C16-C34)	42		20	mg/kg		17-AUG-20	
F4 (C34-C50)	36		20	mg/kg		17-AUG-20	
Total Hydrocarbons (C6-C50)	78		20	mg/kg		17-AUG-20	
Miscellaneous Parameters							
% Moisture	14.1		0.25	%		14-AUG-20	R5189612
L2487835-25 EX-06-78							
Sampled By: J.Rogers on 09-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.0623		0.0050	mg/kg	09-AUG-20	14-AUG-20	R5179757
Toluene	0.191		0.050	mg/kg	09-AUG-20	14-AUG-20	R5179757
Ethylbenzene	<0.010		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
m+p-Xylene	<0.050		0.050	mg/kg	09-AUG-20	14-AUG-20	R5179757
o-Xylene	<0.050		0.050	mg/kg	09-AUG-20	14-AUG-20	R5179757
Xylenes	<0.10		0.10	mg/kg	09-AUG-20	14-AUG-20	R5179757
Surrogate: 1,4-Difluorobenzene (SS)	84.0		70-130	%	09-AUG-20	14-AUG-20	R5179757
Surrogate: 4-Bromofluorobenzene (SS)	71.9		70-130	%	09-AUG-20	14-AUG-20	R5179757
Surrogate: 3,4-Dichlorotoluene (SS)	61.2	SOL:MI	70-130	%	09-AUG-20	14-AUG-20	R5179757
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	80.9		70-130	%	14-AUG-20	15-AUG-20	R5189731
Chrom. to baseline at nC50	YES				14-AUG-20	15-AUG-20	R5189731
Prep/Analysis Dates					14-AUG-20	15-AUG-20	R5189731
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		17-AUG-20	
F1-BTEX	<10		10	mg/kg		17-AUG-20	
F2 (C10-C16)	<20		20	mg/kg		17-AUG-20	
F3 (C16-C34)	76		20	mg/kg		17-AUG-20	
F4 (C34-C50)	65		20	mg/kg		17-AUG-20	
Total Hydrocarbons (C6-C50)	141		20	mg/kg		17-AUG-20	
Miscellaneous Parameters							
% Moisture	13.3		0.25	%		14-AUG-20	R5189612
L2487835-26 EX-06-79							
Sampled By: J.Rogers on 09-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	09-AUG-20	14-AUG-20	R5179757
Toluene	0.163		0.050	mg/kg	09-AUG-20	14-AUG-20	R5179757
Ethylbenzene	<0.010		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
m+p-Xylene	<0.050		0.050	mg/kg	09-AUG-20	14-AUG-20	R5179757
o-Xylene	<0.050		0.050	mg/kg	09-AUG-20	14-AUG-20	R5179757

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2487835-26 EX-06-79							
Sampled By: J.Rogers on 09-AUG-20							
Matrix: SOIL							
BTEX and F1							
Xylenes	<0.10		0.10	mg/kg	09-AUG-20	14-AUG-20	R5179757
Surrogate: 1,4-Difluorobenzene (SS)	90.6		70-130	%	09-AUG-20	14-AUG-20	R5179757
Surrogate: 4-Bromofluorobenzene (SS)	78.6		70-130	%	09-AUG-20	14-AUG-20	R5179757
Surrogate: 3,4-Dichlorotoluene (SS)	65.1	SOL:MI	70-130	%	09-AUG-20	14-AUG-20	R5179757
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	83.1		70-130	%	14-AUG-20	15-AUG-20	R5189731
Chrom. to baseline at nC50	YES				14-AUG-20	15-AUG-20	R5189731
Prep/Analysis Dates					14-AUG-20	15-AUG-20	R5189731
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		17-AUG-20	
F1-BTEX	<10		10	mg/kg		17-AUG-20	
F2 (C10-C16)	<20		20	mg/kg		17-AUG-20	
F3 (C16-C34)	23		20	mg/kg		17-AUG-20	
F4 (C34-C50)	<20		20	mg/kg		17-AUG-20	
Total Hydrocarbons (C6-C50)	23		20	mg/kg		17-AUG-20	
Miscellaneous Parameters							
% Moisture	8.86		0.25	%		14-AUG-20	R5189612
L2487835-27 EX-06-80							
Sampled By: J.Rogers on 10-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	10-AUG-20	14-AUG-20	R5179757
Toluene	0.244		0.050	mg/kg	10-AUG-20	14-AUG-20	R5179757
Ethylbenzene	<0.010		0.010	mg/kg	10-AUG-20	14-AUG-20	R5179757
m+p-Xylene	<0.050		0.050	mg/kg	10-AUG-20	14-AUG-20	R5179757
o-Xylene	<0.050		0.050	mg/kg	10-AUG-20	14-AUG-20	R5179757
Xylenes	<0.10		0.10	mg/kg	10-AUG-20	14-AUG-20	R5179757
Surrogate: 1,4-Difluorobenzene (SS)	86.5		70-130	%	10-AUG-20	14-AUG-20	R5179757
Surrogate: 4-Bromofluorobenzene (SS)	79.2		70-130	%	10-AUG-20	14-AUG-20	R5179757
Surrogate: 3,4-Dichlorotoluene (SS)	70.6		70-130	%	10-AUG-20	14-AUG-20	R5179757
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	82.3		70-130	%	14-AUG-20	15-AUG-20	R5189731
Chrom. to baseline at nC50	YES				14-AUG-20	15-AUG-20	R5189731
Prep/Analysis Dates					14-AUG-20	15-AUG-20	R5189731
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		15-AUG-20	
F1-BTEX	<10		10	mg/kg		15-AUG-20	
F2 (C10-C16)	<20		20	mg/kg		15-AUG-20	
F3 (C16-C34)	<20		20	mg/kg		15-AUG-20	
F4 (C34-C50)	<20		20	mg/kg		15-AUG-20	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		15-AUG-20	
Miscellaneous Parameters							
% Moisture	8.63		0.25	%		14-AUG-20	R5189612
L2487835-28 EX-06-83							
Sampled By: J.Rogers on 08-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.0940		0.0050	mg/kg	08-AUG-20	14-AUG-20	R5179757
Toluene	0.101		0.050	mg/kg	08-AUG-20	14-AUG-20	R5179757

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2487835-28 EX-06-83							
Sampled By: J.Rogers on 08-AUG-20							
Matrix: SOIL							
BTEX and F1							
Ethylbenzene	0.033		0.010	mg/kg	08-AUG-20	14-AUG-20	R5179757
m+p-Xylene	<0.050		0.050	mg/kg	08-AUG-20	14-AUG-20	R5179757
o-Xylene	0.087		0.050	mg/kg	08-AUG-20	14-AUG-20	R5179757
Xylenes	<0.10		0.10	mg/kg	08-AUG-20	14-AUG-20	R5179757
Surrogate: 1,4-Difluorobenzene (SS)	84.8		70-130	%	08-AUG-20	14-AUG-20	R5179757
Surrogate: 4-Bromofluorobenzene (SS)	83.4		70-130	%	08-AUG-20	14-AUG-20	R5179757
Surrogate: 3,4-Dichlorotoluene (SS)	70.4		70-130	%	08-AUG-20	14-AUG-20	R5179757
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	70.8		70-130	%	14-AUG-20	15-AUG-20	R5189731
Chrom. to baseline at nC50	YES				14-AUG-20	15-AUG-20	R5189731
Prep/Analysis Dates					14-AUG-20	15-AUG-20	R5189731
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		15-AUG-20	
F1-BTEX	<10		10	mg/kg		15-AUG-20	
F2 (C10-C16)	<20		20	mg/kg		15-AUG-20	
F3 (C16-C34)	21		20	mg/kg		15-AUG-20	
F4 (C34-C50)	22		20	mg/kg		15-AUG-20	
Total Hydrocarbons (C6-C50)	43		20	mg/kg		15-AUG-20	
Miscellaneous Parameters							
% Moisture	12.0		0.25	%		14-AUG-20	R5189612
L2487835-29 EX-06-86							
Sampled By: J.Rogers on 08-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.0501		0.0050	mg/kg	08-AUG-20	14-AUG-20	R5179757
Toluene	0.072		0.050	mg/kg	08-AUG-20	14-AUG-20	R5179757
Ethylbenzene	<0.010		0.010	mg/kg	08-AUG-20	14-AUG-20	R5179757
m+p-Xylene	<0.050		0.050	mg/kg	08-AUG-20	14-AUG-20	R5179757
o-Xylene	<0.050		0.050	mg/kg	08-AUG-20	14-AUG-20	R5179757
Xylenes	<0.10		0.10	mg/kg	08-AUG-20	14-AUG-20	R5179757
Surrogate: 1,4-Difluorobenzene (SS)	90.2		70-130	%	08-AUG-20	14-AUG-20	R5179757
Surrogate: 4-Bromofluorobenzene (SS)	75.4		70-130	%	08-AUG-20	14-AUG-20	R5179757
Surrogate: 3,4-Dichlorotoluene (SS)	72.5		70-130	%	08-AUG-20	14-AUG-20	R5179757
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	79.5		70-130	%	14-AUG-20	15-AUG-20	R5189731
Chrom. to baseline at nC50	YES				14-AUG-20	15-AUG-20	R5189731
Prep/Analysis Dates					14-AUG-20	15-AUG-20	R5189731
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		15-AUG-20	
F1-BTEX	<10		10	mg/kg		15-AUG-20	
F2 (C10-C16)	<20		20	mg/kg		15-AUG-20	
F3 (C16-C34)	<20		20	mg/kg		15-AUG-20	
F4 (C34-C50)	<20		20	mg/kg		15-AUG-20	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		15-AUG-20	
Miscellaneous Parameters							
% Moisture	9.87		0.25	%		14-AUG-20	R5189612
L2487835-30 EX-06-88							
Sampled By: J.Rogers on 10-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2487835-30 EX-06-88							
Sampled By: J.Rogers on 10-AUG-20							
Matrix: SOIL							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	10-AUG-20	14-AUG-20	R5179757
Toluene	0.114		0.050	mg/kg	10-AUG-20	14-AUG-20	R5179757
Ethylbenzene	<0.010		0.010	mg/kg	10-AUG-20	14-AUG-20	R5179757
m+p-Xylene	<0.050		0.050	mg/kg	10-AUG-20	14-AUG-20	R5179757
o-Xylene	0.053		0.050	mg/kg	10-AUG-20	14-AUG-20	R5179757
Xylenes	<0.10		0.10	mg/kg	10-AUG-20	14-AUG-20	R5179757
Surrogate: 1,4-Difluorobenzene (SS)	87.6		70-130	%	10-AUG-20	14-AUG-20	R5179757
Surrogate: 4-Bromofluorobenzene (SS)	73.5		70-130	%	10-AUG-20	14-AUG-20	R5179757
Surrogate: 3,4-Dichlorotoluene (SS)	65.8	SOL:MI	70-130	%	10-AUG-20	14-AUG-20	R5179757
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	80.4		70-130	%	14-AUG-20	15-AUG-20	R5189731
Chrom. to baseline at nC50	YES				14-AUG-20	15-AUG-20	R5189731
Prep/Analysis Dates					14-AUG-20	15-AUG-20	R5189731
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		17-AUG-20	
F1-BTEX	<10		10	mg/kg		17-AUG-20	
F2 (C10-C16)	<20		20	mg/kg		17-AUG-20	
F3 (C16-C34)	71		20	mg/kg		17-AUG-20	
F4 (C34-C50)	61		20	mg/kg		17-AUG-20	
Total Hydrocarbons (C6-C50)	132		20	mg/kg		17-AUG-20	
Miscellaneous Parameters							
% Moisture	9.88		0.25	%		14-AUG-20	R5189612
L2487835-31 EX-06-91							
Sampled By: J.Rogers on 09-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.0102		0.0050	mg/kg	09-AUG-20	14-AUG-20	R5179757
Toluene	0.184		0.050	mg/kg	09-AUG-20	14-AUG-20	R5179757
Ethylbenzene	0.038		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
m+p-Xylene	0.117		0.050	mg/kg	09-AUG-20	14-AUG-20	R5179757
o-Xylene	0.064		0.050	mg/kg	09-AUG-20	14-AUG-20	R5179757
Xylenes	0.18		0.10	mg/kg	09-AUG-20	14-AUG-20	R5179757
Surrogate: 1,4-Difluorobenzene (SS)	88.0		70-130	%	09-AUG-20	14-AUG-20	R5179757
Surrogate: 4-Bromofluorobenzene (SS)	76.7		70-130	%	09-AUG-20	14-AUG-20	R5179757
Surrogate: 3,4-Dichlorotoluene (SS)	70.1		70-130	%	09-AUG-20	14-AUG-20	R5179757
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	73.9		70-130	%	14-AUG-20	15-AUG-20	R5189731
Chrom. to baseline at nC50	YES				14-AUG-20	15-AUG-20	R5189731
Prep/Analysis Dates					14-AUG-20	15-AUG-20	R5189731
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		15-AUG-20	
F1-BTEX	<10		10	mg/kg		15-AUG-20	
F2 (C10-C16)	<20		20	mg/kg		15-AUG-20	
F3 (C16-C34)	<20		20	mg/kg		15-AUG-20	
F4 (C34-C50)	<20		20	mg/kg		15-AUG-20	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		15-AUG-20	
Miscellaneous Parameters							
% Moisture	12.6		0.25	%		14-AUG-20	R5189612

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2487835-32 EX-06-93							
Sampled By: J.Rogers on 10-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.0119		0.0050	mg/kg	10-AUG-20	14-AUG-20	R5179757
Toluene	0.143		0.050	mg/kg	10-AUG-20	14-AUG-20	R5179757
Ethylbenzene	0.011		0.010	mg/kg	10-AUG-20	14-AUG-20	R5179757
m+p-Xylene	<0.050		0.050	mg/kg	10-AUG-20	14-AUG-20	R5179757
o-Xylene	<0.050		0.050	mg/kg	10-AUG-20	14-AUG-20	R5179757
Xylenes	<0.10		0.10	mg/kg	10-AUG-20	14-AUG-20	R5179757
Surrogate: 1,4-Difluorobenzene (SS)	95.8		70-130	%	10-AUG-20	14-AUG-20	R5179757
Surrogate: 4-Bromofluorobenzene (SS)	82.5		70-130	%	10-AUG-20	14-AUG-20	R5179757
Surrogate: 3,4-Dichlorotoluene (SS)	77.4		70-130	%	10-AUG-20	14-AUG-20	R5179757
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	81.4		70-130	%	14-AUG-20	15-AUG-20	R5189731
Chrom. to baseline at nC50	YES				14-AUG-20	15-AUG-20	R5189731
Prep/Analysis Dates					14-AUG-20	15-AUG-20	R5189731
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		15-AUG-20	
F1-BTEX	<10		10	mg/kg		15-AUG-20	
F2 (C10-C16)	<20		20	mg/kg		15-AUG-20	
F3 (C16-C34)	28		20	mg/kg		15-AUG-20	
F4 (C34-C50)	28		20	mg/kg		15-AUG-20	
Total Hydrocarbons (C6-C50)	56		20	mg/kg		15-AUG-20	
Miscellaneous Parameters							
% Moisture	10.3		0.25	%		14-AUG-20	R5189612
L2487835-33 EX-06-94							
Sampled By: J.Rogers on 10-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.0217		0.0050	mg/kg	10-AUG-20	14-AUG-20	R5179757
Toluene	0.192		0.050	mg/kg	10-AUG-20	14-AUG-20	R5179757
Ethylbenzene	0.019		0.010	mg/kg	10-AUG-20	14-AUG-20	R5179757
m+p-Xylene	<0.050		0.050	mg/kg	10-AUG-20	14-AUG-20	R5179757
o-Xylene	<0.050		0.050	mg/kg	10-AUG-20	14-AUG-20	R5179757
Xylenes	<0.10		0.10	mg/kg	10-AUG-20	14-AUG-20	R5179757
Surrogate: 1,4-Difluorobenzene (SS)	90.8		70-130	%	10-AUG-20	14-AUG-20	R5179757
Surrogate: 4-Bromofluorobenzene (SS)	82.8		70-130	%	10-AUG-20	14-AUG-20	R5179757
Surrogate: 3,4-Dichlorotoluene (SS)	70.3		70-130	%	10-AUG-20	14-AUG-20	R5179757
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	92.6		70-130	%	14-AUG-20	15-AUG-20	R5189731
Chrom. to baseline at nC50	YES				14-AUG-20	15-AUG-20	R5189731
Prep/Analysis Dates					14-AUG-20	15-AUG-20	R5189731
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		15-AUG-20	
F1-BTEX	<10		10	mg/kg		15-AUG-20	
F2 (C10-C16)	<20		20	mg/kg		15-AUG-20	
F3 (C16-C34)	35		20	mg/kg		15-AUG-20	
F4 (C34-C50)	34		20	mg/kg		15-AUG-20	
Total Hydrocarbons (C6-C50)	69		20	mg/kg		15-AUG-20	
Miscellaneous Parameters							
% Moisture	11.8		0.25	%		14-AUG-20	R5189612

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2487835-34 EX-07-04							
Sampled By: J.Rogers on 09-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	14-AUG-20	14-AUG-20	R5179757
Toluene	0.072		0.050	mg/kg	14-AUG-20	14-AUG-20	R5179757
Ethylbenzene	<0.010		0.010	mg/kg	14-AUG-20	14-AUG-20	R5179757
m+p-Xylene	0.090		0.050	mg/kg	14-AUG-20	14-AUG-20	R5179757
o-Xylene	<0.050		0.050	mg/kg	14-AUG-20	14-AUG-20	R5179757
Xylenes	<0.10		0.10	mg/kg	14-AUG-20	14-AUG-20	R5179757
Surrogate: 1,4-Difluorobenzene (SS)	103.4		70-130	%	14-AUG-20	14-AUG-20	R5179757
Surrogate: 4-Bromofluorobenzene (SS)	87.3		70-130	%	14-AUG-20	14-AUG-20	R5179757
Surrogate: 3,4-Dichlorotoluene (SS)	73.0		70-130	%	14-AUG-20	14-AUG-20	R5179757
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	74.7		70-130	%	14-AUG-20	15-AUG-20	R5189731
Chrom. to baseline at nC50	YES				14-AUG-20	15-AUG-20	R5189731
Prep/Analysis Dates					14-AUG-20	15-AUG-20	R5189731
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		15-AUG-20	
F1-BTEX	<10		10	mg/kg		15-AUG-20	
F2 (C10-C16)	51		20	mg/kg		15-AUG-20	
F3 (C16-C34)	61		20	mg/kg		15-AUG-20	
F4 (C34-C50)	<20		20	mg/kg		15-AUG-20	
Total Hydrocarbons (C6-C50)	112		20	mg/kg		15-AUG-20	
Miscellaneous Parameters							
% Moisture	11.7		0.25	%		14-AUG-20	R5189612
EPA 8260 Volatile Organic Compounds							
Dichlorodifluoromethane	<0.010		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
Chloromethane	<0.10		0.10	mg/kg	09-AUG-20	14-AUG-20	R5179757
Vinyl chloride	<0.20		0.20	mg/kg	09-AUG-20	14-AUG-20	R5179757
Bromomethane	<0.10		0.10	mg/kg	09-AUG-20	14-AUG-20	R5179757
Chloroethane	<0.10		0.10	mg/kg	09-AUG-20	14-AUG-20	R5179757
Trichlorofluoromethane	<0.010		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
1,1-Dichloroethene	<0.010		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
Methylene chloride	<0.010		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
trans-1,2-Dichloroethene	<0.010		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
1,1-Dichloroethane	<0.010		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
2,2-Dichloropropane	<0.010		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
cis-1,2-Dichloroethene	<0.010		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
Chloroform	<0.010		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
Bromochloromethane	<0.010		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
1,2-Dichloroethane	<0.010		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
1,1,1-Trichloroethane	<0.010		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
1,1-Dichloropropene	<0.010		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
Carbon tetrachloride	<0.010		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
Trichloroethene	<0.010		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
1,2-Dichloropropane	<0.010		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
Bromodichloromethane	<0.010		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
Dibromomethane	<0.010		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
cis-1,3-Dichloropropene	<0.010		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
trans-1,3-Dichloropropene	<0.010		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
1,1,2-Trichloroethane	<0.010		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
1,3-Dichloropropane	<0.010		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
Tetrachloroethene	<0.010		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
Dibromochloromethane	<0.010		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2487835-34 EX-07-04							
Sampled By: J.Rogers on 09-AUG-20							
Matrix: SOIL							
EPA 8260 Volatile Organic Compounds							
1,2-Dibromoethane	<0.010		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
Chlorobenzene	<0.010		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
1,1,1,2-Tetrachloroethane	<0.010		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
Bromoform	<0.010		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
Isopropylbenzene	<0.010		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
1,1,2,2-Tetrachloroethane	<0.050		0.050	mg/kg	09-AUG-20	14-AUG-20	R5179757
1,2,3-Trichloropropane	<0.020		0.020	mg/kg	09-AUG-20	14-AUG-20	R5179757
n-Propylbenzene	0.022		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
Bromobenzene	<0.010		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
1,3,5-Trimethylbenzene	0.178		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
2-Chlorotoluene	<0.010		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
4-Chlorotoluene	<0.010		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
tert-Butylbenzene	<0.010		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
1,2,4-Trimethylbenzene	0.601		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
sec-Butylbenzene	<0.010		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
p-Isopropyltoluene	0.033		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
1,3-Dichlorobenzene	<0.010		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
1,4-Dichlorobenzene	<0.010		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
n-Butylbenzene	<0.052	DLCI	0.052	mg/kg	09-AUG-20	14-AUG-20	R5179757
1,2-Dichlorobenzene	<0.010		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
1,2-Dibromo-3-chloropropane	<0.010		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
1,2,4-Trichlorobenzene	<0.010		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
Hexachlorobutadiene	<0.010		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
1,2,3-Trichlorobenzene	<0.010		0.010	mg/kg	09-AUG-20	14-AUG-20	R5179757
Surrogate: 1,4-Difluorobenzene (SS)	98.3		70-130	%	09-AUG-20	14-AUG-20	R5179757
Surrogate: 4-Bromofluorobenzene (SS)	73.3		70-130	%	09-AUG-20	14-AUG-20	R5179757
Surrogate: 3,4-Dichlorotoluene (SS)	76.3		70-130	%	09-AUG-20	14-AUG-20	R5179757
L2487835-35 EX-08-02							
Sampled By: J.Rogers on 10-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	10-AUG-20	14-AUG-20	R5179757
Toluene	0.200		0.050	mg/kg	10-AUG-20	14-AUG-20	R5179757
Ethylbenzene	<0.010		0.010	mg/kg	10-AUG-20	14-AUG-20	R5179757
m+p-Xylene	<0.050		0.050	mg/kg	10-AUG-20	14-AUG-20	R5179757
o-Xylene	<0.050		0.050	mg/kg	10-AUG-20	14-AUG-20	R5179757
Xylenes	<0.10		0.10	mg/kg	10-AUG-20	14-AUG-20	R5179757
Surrogate: 1,4-Difluorobenzene (SS)	98.7		70-130	%	10-AUG-20	14-AUG-20	R5179757
Surrogate: 4-Bromofluorobenzene (SS)	90.6		70-130	%	10-AUG-20	14-AUG-20	R5179757
Surrogate: 3,4-Dichlorotoluene (SS)	86.1		70-130	%	10-AUG-20	14-AUG-20	R5179757
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	85.8		70-130	%	14-AUG-20	15-AUG-20	R5189731
Chrom. to baseline at nC50	YES				14-AUG-20	15-AUG-20	R5189731
Prep/Analysis Dates					14-AUG-20	15-AUG-20	R5189731
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		15-AUG-20	
F1-BTEX	<10		10	mg/kg		15-AUG-20	
F2 (C10-C16)	<20		20	mg/kg		15-AUG-20	
F3 (C16-C34)	<20		20	mg/kg		15-AUG-20	
F4 (C34-C50)	<20		20	mg/kg		15-AUG-20	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2487835-35 EX-08-02							
Sampled By: J.Rogers on 10-AUG-20							
Matrix: SOIL							
CCME Total Hydrocarbons							
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		15-AUG-20	
Miscellaneous Parameters							
% Moisture	9.39		0.25	%		14-AUG-20	R5189612
L2487835-36 EX-08-06							
Sampled By: J.Rogers on 10-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	10-AUG-20	14-AUG-20	R5179757
Toluene	0.115		0.050	mg/kg	10-AUG-20	14-AUG-20	R5179757
Ethylbenzene	<0.010		0.010	mg/kg	10-AUG-20	14-AUG-20	R5179757
m+p-Xylene	<0.050		0.050	mg/kg	10-AUG-20	14-AUG-20	R5179757
o-Xylene	<0.050		0.050	mg/kg	10-AUG-20	14-AUG-20	R5179757
Xylenes	<0.10		0.10	mg/kg	10-AUG-20	14-AUG-20	R5179757
Surrogate: 1,4-Difluorobenzene (SS)	99.4		70-130	%	10-AUG-20	14-AUG-20	R5179757
Surrogate: 4-Bromofluorobenzene (SS)	89.8		70-130	%	10-AUG-20	14-AUG-20	R5179757
Surrogate: 3,4-Dichlorotoluene (SS)	78.0		70-130	%	10-AUG-20	14-AUG-20	R5179757
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	77.7		70-130	%	14-AUG-20	15-AUG-20	R5189731
Chrom. to baseline at nC50	YES				14-AUG-20	15-AUG-20	R5189731
Prep/Analysis Dates					14-AUG-20	15-AUG-20	R5189731
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		15-AUG-20	
F1-BTEX	<10		10	mg/kg		15-AUG-20	
F2 (C10-C16)	<20		20	mg/kg		15-AUG-20	
F3 (C16-C34)	<20		20	mg/kg		15-AUG-20	
F4 (C34-C50)	<20		20	mg/kg		15-AUG-20	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		15-AUG-20	
Miscellaneous Parameters							
% Moisture	7.95		0.25	%		14-AUG-20	R5189612
L2487835-37 EX-08-09							
Sampled By: J.Rogers on 10-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	10-AUG-20	14-AUG-20	R5179757
Toluene	0.129		0.050	mg/kg	10-AUG-20	14-AUG-20	R5179757
Ethylbenzene	<0.010		0.010	mg/kg	10-AUG-20	14-AUG-20	R5179757
m+p-Xylene	<0.050		0.050	mg/kg	10-AUG-20	14-AUG-20	R5179757
o-Xylene	<0.050		0.050	mg/kg	10-AUG-20	14-AUG-20	R5179757
Xylenes	<0.10		0.10	mg/kg	10-AUG-20	14-AUG-20	R5179757
Surrogate: 1,4-Difluorobenzene (SS)	103.5		70-130	%	10-AUG-20	14-AUG-20	R5179757
Surrogate: 4-Bromofluorobenzene (SS)	83.1		70-130	%	10-AUG-20	14-AUG-20	R5179757
Surrogate: 3,4-Dichlorotoluene (SS)	77.4		70-130	%	10-AUG-20	14-AUG-20	R5179757
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	79.1		70-130	%	14-AUG-20	15-AUG-20	R5189731
Chrom. to baseline at nC50	YES				14-AUG-20	15-AUG-20	R5189731
Prep/Analysis Dates					14-AUG-20	15-AUG-20	R5189731
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		15-AUG-20	
F1-BTEX	<10		10	mg/kg		15-AUG-20	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2487835-37 EX-08-09							
Sampled By: J.Rogers on 10-AUG-20							
Matrix: SOIL							
CCME Total Hydrocarbons							
F2 (C10-C16)	<20		20	mg/kg		15-AUG-20	
F3 (C16-C34)	<20		20	mg/kg		15-AUG-20	
F4 (C34-C50)	<20		20	mg/kg		15-AUG-20	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		15-AUG-20	
Miscellaneous Parameters							
% Moisture	6.85		0.25	%		14-AUG-20	R5189612

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
DLCI	Detection Limit Raised: Chromatographic Interference due to co-elution.
SOL:MI	Surrogate recovery outside acceptable limits due to matrix interference

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BTXS,F1-MEOH-ED	Soil	BTEX and F1	EPA 8260C/5021A and CWS PHC Tier 1

This analysis involves the extraction of a subsample of the sediment/soil with methanol added in the field at the time of subsampling. The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. BTX Target compound concentrations are measured using mass spectrometry detection. The instrumental portion of F1 analysis is carried out in accordance with the Canada Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method (2001).

ETL-TVH,TEH-CCME-ED	Soil	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F2-4-TMB-ED	Soil	CCME Total Extractable Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

This analysis is carried out in accordance with the "Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method, Canadian Council of Ministers of the Environment" For C10 to C50 hydrocarbons (F2, F3, F4) and gravimetric heavy hydrocarbons (F4G-sg), a subsample of the sediment/soil is extracted with 1:1 hexane:acetone using a rotary extractor. The extract undergoes a silica-gel clean-up to remove polar compounds. F2, F3 & F4 are analyzed by on-column GC/FID, and F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where F4 (C34-C50) and F4G-sg results are reported for a sample, the larger of the reported values is used for comparison against the relevant CCME standard for F4.
7. The gravimetric heavy hydrocarbon results (F4G-sg), cannot be added to the C6 to C50 hydrocarbon results.
8. This method is validated for use.
9. Data from analysis of quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram.

F4G-TMB-ED	Soil	CCME Gravimetric Heavy Hydrocarbons (SG)	CCME CWS-PHC, Pub #1310, Dec 2001
PREP-MOISTURE-ED	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)

The weighed portion of soil is placed in a 105°C oven to dry to a constant weight; the drying time will vary based on the moisture content of the soil. The dried soil weight is then used to calculate % moisture.

VOC-MEOH-8260-ED	Soil	EPA 8260 Volatile Organic Compounds	EPA 8260C/5021A

The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. Target compound concentrations are measured using mass spectrometry detection.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
ED	ALS ENVIRONMENTAL - EDMONTON, ALBERTA, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Client: GOLDER ASSOCIATES LTD
16820 107 Ave NW
EDMONTON AB T5P 4C3
Contact: Steven Fiddler

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTXS,F1-MEOH-ED	**Soil**							
Batch R5179757								
WG3383947-4 DUP		**L2487835-21**						
Benzene		<0.0118	0.0095		mg/kg	21	30	14-AUG-20
Toluene		0.126	0.112		mg/kg	12	30	14-AUG-20
Ethylbenzene		0.025	0.023		mg/kg	9.4	30	14-AUG-20
m+p-Xylene		0.097	0.089		mg/kg	9.1	30	14-AUG-20
o-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	14-AUG-20
WG3383947-2 LCS								
Benzene			78.6		%		70-130	14-AUG-20
Toluene			81.3		%		70-130	14-AUG-20
Ethylbenzene			81.2		%		70-130	14-AUG-20
m+p-Xylene			83.0		%		70-130	14-AUG-20
o-Xylene			85.2		%		70-130	14-AUG-20
WG3383947-1 MB								
Benzene			<0.0050		mg/kg		0.005	14-AUG-20
Toluene			<0.050		mg/kg		0.05	14-AUG-20
Ethylbenzene			<0.010		mg/kg		0.01	14-AUG-20
m+p-Xylene			<0.050		mg/kg		0.05	14-AUG-20
o-Xylene			<0.050		mg/kg		0.05	14-AUG-20
Surrogate: 1,4-Difluorobenzene (SS)			88.3		%		70-130	14-AUG-20
Surrogate: 4-Bromofluorobenzene (SS)			79.0		%		70-130	14-AUG-20
Surrogate: 3,4-Dichlorotoluene (SS)			75.4		%		70-130	14-AUG-20
WG3383947-5 MS		**L2487835-37**						
Benzene			98.5		%		60-140	14-AUG-20
Toluene			93.3		%		60-140	14-AUG-20
Ethylbenzene			91.3		%		60-140	14-AUG-20
m+p-Xylene			91.4		%		60-140	14-AUG-20
o-Xylene			97.2		%		60-140	14-AUG-20
Batch R5183656								
WG3383936-4 DUP		**L2487835-1**						
Benzene		<0.0050	<0.0050	RPD-NA	mg/kg	N/A	30	14-AUG-20
Toluene		0.154	0.151		mg/kg	1.7	30	14-AUG-20
Ethylbenzene		<0.010	<0.010	RPD-NA	mg/kg	N/A	30	14-AUG-20
m+p-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	14-AUG-20
o-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	14-AUG-20
WG3383936-2 LCS								
Benzene			86.3		%		70-130	14-AUG-20

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTXS,F1-MEOH-ED	**Soil**							
Batch R5183656								
WG3383936-2 LCS								
Toluene			85.7		%		70-130	14-AUG-20
Ethylbenzene			93.8		%		70-130	14-AUG-20
m+p-Xylene			100.9		%		70-130	14-AUG-20
o-Xylene			99.1		%		70-130	14-AUG-20
WG3383936-1 MB								
Benzene			<0.0050		mg/kg		0.005	14-AUG-20
Toluene			<0.050		mg/kg		0.05	14-AUG-20
Ethylbenzene			<0.010		mg/kg		0.01	14-AUG-20
m+p-Xylene			<0.050		mg/kg		0.05	14-AUG-20
o-Xylene			<0.050		mg/kg		0.05	14-AUG-20
Surrogate: 1,4-Difluorobenzene (SS)			87.6		%		70-130	14-AUG-20
Surrogate: 4-Bromofluorobenzene (SS)			72.7		%		70-130	14-AUG-20
Surrogate: 3,4-Dichlorotoluene (SS)			94.7		%		70-130	14-AUG-20
WG3383936-5 MS		**L2487835-20**						
Benzene			104.1		%		60-140	14-AUG-20
Toluene			111.4		%		60-140	14-AUG-20
Ethylbenzene			117.1		%		60-140	14-AUG-20
m+p-Xylene			116.9		%		60-140	14-AUG-20
o-Xylene			118.4		%		60-140	14-AUG-20
F2-4-TMB-ED	**Soil**							
Batch R5189731								
WG3383969-4 DUP		**L2487835-20**						
F2 (C10-C16)		<20	<20	RPD-NA	mg/kg	N/A	40	14-OCT-20
F3 (C16-C34)		139	140		mg/kg	0.6	40	14-OCT-20
F4 (C34-C50)		109	109		mg/kg	0.2	40	14-OCT-20
WG3383977-4 DUP		**L2487835-37**						
F2 (C10-C16)		<20	<20	RPD-NA	mg/kg	N/A	40	14-OCT-20
F3 (C16-C34)		<20	<20	RPD-NA	mg/kg	N/A	40	14-OCT-20
F4 (C34-C50)		<20	<20	RPD-NA	mg/kg	N/A	40	14-OCT-20
WG3383969-3 IRM		**ALS PHC RM3**						
F2 (C10-C16)			96.4		%		70-130	14-OCT-20
F3 (C16-C34)			93.7		%		70-130	14-OCT-20
F4 (C34-C50)			76.2		%		70-130	14-OCT-20
WG3383977-3 IRM		**ALS PHC RM3**						
F2 (C10-C16)			98.1		%		70-130	14-OCT-20

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-4-TMB-ED	**Soil**							
Batch R5189731								
WG3383977-3 IRM		**ALS PHC RM3**						
F3 (C16-C34)			93.6		%		70-130	14-OCT-20
F4 (C34-C50)			82.7		%		70-130	14-OCT-20
WG3383969-2 LCS		**DIESEL/MOTOR OIL**						
F2 (C10-C16)			104.7		%		70-130	14-OCT-20
F3 (C16-C34)			102.1		%		70-130	14-OCT-20
F4 (C34-C50)			105.0		%		70-130	14-OCT-20
WG3383977-2 LCS		**DIESEL/MOTOR OIL**						
F2 (C10-C16)			107.4		%		70-130	14-OCT-20
F3 (C16-C34)			105.6		%		70-130	14-OCT-20
F4 (C34-C50)			102.5		%		70-130	14-OCT-20
WG3383969-1 MB								
F2 (C10-C16)			<20		mg/kg		20	14-OCT-20
F3 (C16-C34)			<20		mg/kg		20	14-OCT-20
F4 (C34-C50)			<20		mg/kg		20	14-OCT-20
Surrogate: 2-Bromobenzotrifluoride			85.4		%		70-130	14-OCT-20
WG3383977-1 MB								
F2 (C10-C16)			<20		mg/kg		20	14-OCT-20
F3 (C16-C34)			<20		mg/kg		20	14-OCT-20
F4 (C34-C50)			<20		mg/kg		20	14-OCT-20
Surrogate: 2-Bromobenzotrifluoride			87.4		%		70-130	14-OCT-20
F4G-TMB-ED	**Soil**							
Batch R5189777								
WG3384466-3 IRM		**ALS PHC RM3**						
Gravimetric Heavy Hydrocarbons (Silica)			117.5		%		70-130	16-AUG-20
WG3384466-2 LCS		**DIESEL / MOTOR OIL**						
Gravimetric Heavy Hydrocarbons (Silica)			114.3		%		70-130	16-AUG-20
WG3384466-1 MB								
Gravimetric Heavy Hydrocarbons (Silica)			<500		mg/kg		500	16-AUG-20
PREP-MOISTURE-ED	**Soil**							
Batch R5189612								
WG3383996-3 DUP		**L2487835-30**						
% Moisture		9.88	9.30		%	6.1	20	14-AUG-20
WG3383996-2 LCS								
% Moisture			101.4		%		90-110	14-AUG-20
WG3383996-1 MB								
% Moisture			<0.25		%		0.25	14-AUG-20

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PREP-MOISTURE-ED	**Soil**							
Batch R5189615								
WG3383973-3 DUP		**L2487835-10**						
% Moisture		10.6	11.0		%	4.3	20	14-AUG-20
WG3383973-2 LCS								
% Moisture			100.5		%		90-110	14-AUG-20
WG3383973-1 MB								
% Moisture			<0.25		%		0.25	14-AUG-20
VOC-MEOH-8260-ED	**Soil**							
Batch R5179757								
WG3383959-3 DUP		**L2487835-34**						
Dichlorodifluoromethane		<0.010	<0.010	RPD-NA	mg/kg	N/A	30	14-AUG-20
Chloromethane		<0.10	<0.10	RPD-NA	mg/kg	N/A	30	14-AUG-20
Vinyl chloride		<0.20	<0.20	RPD-NA	mg/kg	N/A	30	14-AUG-20
Bromomethane		<0.10	<0.10	RPD-NA	mg/kg	N/A	30	14-AUG-20
Chloroethane		<0.10	<0.10	RPD-NA	mg/kg	N/A	30	14-AUG-20
Trichlorofluoromethane		<0.010	<0.010	RPD-NA	mg/kg	N/A	30	14-AUG-20
1,1-Dichloroethene		<0.010	<0.010	RPD-NA	mg/kg	N/A	30	14-AUG-20
Methylene chloride		<0.010	<0.010	RPD-NA	mg/kg	N/A	30	14-AUG-20
trans-1,2-Dichloroethene		<0.010	<0.010	RPD-NA	mg/kg	N/A	30	14-AUG-20
1,1-Dichloroethane		<0.010	<0.010	RPD-NA	mg/kg	N/A	30	14-AUG-20
2,2-Dichloropropane		<0.010	<0.010	RPD-NA	mg/kg	N/A	30	14-AUG-20
cis-1,2-Dichloroethene		<0.010	<0.010	RPD-NA	mg/kg	N/A	30	14-AUG-20
Chloroform		<0.010	<0.010	RPD-NA	mg/kg	N/A	30	14-AUG-20
Bromochloromethane		<0.010	<0.010	RPD-NA	mg/kg	N/A	30	14-AUG-20
1,2-Dichloroethane		<0.010	<0.010	RPD-NA	mg/kg	N/A	30	14-AUG-20
1,1,1-Trichloroethane		<0.010	<0.010	RPD-NA	mg/kg	N/A	30	14-AUG-20
1,1-Dichloropropene		<0.010	<0.010	RPD-NA	mg/kg	N/A	30	14-AUG-20
Carbon tetrachloride		<0.010	<0.010	RPD-NA	mg/kg	N/A	30	14-AUG-20
Trichloroethene		<0.010	<0.010	RPD-NA	mg/kg	N/A	30	14-AUG-20
1,2-Dichloropropane		<0.010	<0.010	RPD-NA	mg/kg	N/A	30	14-AUG-20
Bromodichloromethane		<0.010	<0.010	RPD-NA	mg/kg	N/A	30	14-AUG-20
Dibromomethane		<0.010	<0.010	RPD-NA	mg/kg	N/A	30	14-AUG-20
cis-1,3-Dichloropropene		<0.010	<0.010	RPD-NA	mg/kg	N/A	30	14-AUG-20
trans-1,3-Dichloropropene		<0.010	<0.010	RPD-NA	mg/kg	N/A	30	14-AUG-20
1,1,2-Trichloroethane		<0.010	<0.010	RPD-NA	mg/kg	N/A	30	14-AUG-20
1,3-Dichloropropane		<0.010	<0.010	RPD-NA	mg/kg	N/A	30	14-AUG-20
Tetrachloroethene		<0.010	<0.010	RPD-NA	mg/kg	N/A	30	14-AUG-20

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-MEOH-8260-ED	**Soil**							
Batch R5179757								
WG3383959-3 DUP		**L2487835-34**						
Dibromochloromethane		<0.010	<0.010	RPD-NA	mg/kg	N/A	30	14-AUG-20
1,2-Dibromoethane		<0.010	<0.010	RPD-NA	mg/kg	N/A	30	14-AUG-20
Chlorobenzene		<0.010	<0.010	RPD-NA	mg/kg	N/A	30	14-AUG-20
1,1,1,2-Tetrachloroethane		<0.010	<0.010	RPD-NA	mg/kg	N/A	30	14-AUG-20
Bromoform		<0.010	<0.010	RPD-NA	mg/kg	N/A	30	14-AUG-20
Isopropylbenzene		<0.010	<0.010	RPD-NA	mg/kg	N/A	30	14-AUG-20
1,1,2,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	14-AUG-20
1,2,3-Trichloropropane		<0.020	<0.020	RPD-NA	mg/kg	N/A	30	14-AUG-20
n-Propylbenzene		0.022	0.020		mg/kg	8.6	30	14-AUG-20
Bromobenzene		<0.010	<0.010	RPD-NA	mg/kg	N/A	30	14-AUG-20
1,3,5-Trimethylbenzene		0.178	0.186		mg/kg	4.3	30	14-AUG-20
2-Chlorotoluene		<0.010	<0.010	RPD-NA	mg/kg	N/A	30	14-AUG-20
4-Chlorotoluene		<0.010	<0.010	RPD-NA	mg/kg	N/A	30	14-AUG-20
tert-Butylbenzene		<0.010	<0.010	RPD-NA	mg/kg	N/A	30	14-AUG-20
1,2,4-Trimethylbenzene		0.601	0.647		mg/kg	7.4	30	14-AUG-20
sec-Butylbenzene		<0.010	<0.010	RPD-NA	mg/kg	N/A	30	14-AUG-20
p-Isopropyltoluene		0.033	0.035		mg/kg	4.0	30	14-AUG-20
1,3-Dichlorobenzene		<0.010	<0.010	RPD-NA	mg/kg	N/A	30	14-AUG-20
1,4-Dichlorobenzene		<0.010	<0.010	RPD-NA	mg/kg	N/A	30	14-AUG-20
n-Butylbenzene		<0.052	0.057		mg/kg	11	30	14-AUG-20
1,2-Dichlorobenzene		<0.010	<0.010	RPD-NA	mg/kg	N/A	30	14-AUG-20
1,2-Dibromo-3-chloropropane		<0.010	<0.010	RPD-NA	mg/kg	N/A	30	14-AUG-20
1,2,4-Trichlorobenzene		<0.010	<0.010	RPD-NA	mg/kg	N/A	30	14-AUG-20
Hexachlorobutadiene		<0.010	<0.010	RPD-NA	mg/kg	N/A	30	14-AUG-20
1,2,3-Trichlorobenzene		<0.010	<0.010	RPD-NA	mg/kg	N/A	30	14-AUG-20
WG3383959-2 LCS								
Dichlorodifluoromethane			86.8		%		60-140	14-AUG-20
Chloromethane			100.6		%		60-140	14-AUG-20
Vinyl chloride			86.9		%		60-140	14-AUG-20
Bromomethane			94.8		%		60-140	14-AUG-20
Chloroethane			90.3		%		60-140	14-AUG-20
Trichlorofluoromethane			106.2		%		60-140	14-AUG-20
1,1-Dichloroethene			99.6		%		70-130	14-AUG-20
Methylene chloride			110.6		%		60-140	14-AUG-20

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-MEOH-8260-ED	**Soil**							
Batch R5179757								
WG3383959-2 LCS								
trans-1,2-Dichloroethene			105.4		%		70-130	14-AUG-20
1,1-Dichloroethane			111.5		%		70-130	14-AUG-20
2,2-Dichloropropane			98.2		%		70-130	14-AUG-20
cis-1,2-Dichloroethene			89.3		%		70-130	14-AUG-20
Chloroform			108.8		%		70-130	14-AUG-20
Bromochloromethane			104.7		%		70-130	14-AUG-20
1,2-Dichloroethane			105.8		%		70-130	14-AUG-20
1,1,1-Trichloroethane			103.0		%		70-130	14-AUG-20
1,1-Dichloropropene			78.0		%		70-130	14-AUG-20
Carbon tetrachloride			101.4		%		70-130	14-AUG-20
Trichloroethene			92.8		%		70-130	14-AUG-20
1,2-Dichloropropane			95.2		%		70-130	14-AUG-20
Bromodichloromethane			95.0		%		70-130	14-AUG-20
Dibromomethane			100.9		%		70-130	14-AUG-20
cis-1,3-Dichloropropene			85.3		%		70-130	14-AUG-20
trans-1,3-Dichloropropene			87.6		%		70-130	14-AUG-20
1,1,2-Trichloroethane			99.5		%		70-130	14-AUG-20
1,3-Dichloropropane			91.2		%		70-130	14-AUG-20
Tetrachloroethene			88.2		%		70-130	14-AUG-20
Dibromochloromethane			94.0		%		70-130	14-AUG-20
1,2-Dibromoethane			98.4		%		70-130	14-AUG-20
Chlorobenzene			88.8		%		70-130	14-AUG-20
1,1,1,2-Tetrachloroethane			102.0		%		70-130	14-AUG-20
Bromoform			109.2		%		70-130	14-AUG-20
Isopropylbenzene			75.2		%		70-130	14-AUG-20
1,1,2,2-Tetrachloroethane			121.9		%		70-130	14-AUG-20
1,2,3-Trichloropropane			116.9		%		70-130	14-AUG-20
n-Propylbenzene			75.7		%		70-130	14-AUG-20
Bromobenzene			98.5		%		70-130	14-AUG-20
1,3,5-Trimethylbenzene			89.0		%		70-130	14-AUG-20
2-Chlorotoluene			101.0		%		70-130	14-AUG-20
4-Chlorotoluene			96.4		%		70-130	14-AUG-20
tert-Butylbenzene			93.7		%		70-130	14-AUG-20
1,2,4-Trimethylbenzene			91.7		%		70-130	14-AUG-20

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-MEOH-8260-ED	**Soil**							
Batch R5179757								
WG3383959-2 LCS								
sec-Butylbenzene			92.6		%		70-130	14-AUG-20
p-Isopropyltoluene			91.7		%		70-130	14-AUG-20
1,3-Dichlorobenzene			105.5		%		70-130	14-AUG-20
1,4-Dichlorobenzene			105.3		%		70-130	14-AUG-20
n-Butylbenzene			88.2		%		70-130	14-AUG-20
1,2-Dichlorobenzene			107.5		%		70-130	14-AUG-20
1,2-Dibromo-3-chloropropane			106.9		%		70-130	14-AUG-20
1,2,4-Trichlorobenzene			94.1		%		70-130	14-AUG-20
Hexachlorobutadiene			95.4		%		70-130	14-AUG-20
1,2,3-Trichlorobenzene			82.4		%		70-130	14-AUG-20
WG3383959-1 MB								
Dichlorodifluoromethane			<0.010		mg/kg		0.01	14-AUG-20
Chloromethane			<0.10		mg/kg		0.1	14-AUG-20
Vinyl chloride			<0.20		mg/kg		0.2	14-AUG-20
Bromomethane			<0.10		mg/kg		0.1	14-AUG-20
Chloroethane			<0.10		mg/kg		0.1	14-AUG-20
Trichlorofluoromethane			<0.010		mg/kg		0.01	14-AUG-20
1,1-Dichloroethene			<0.010		mg/kg		0.01	14-AUG-20
Methylene chloride			<0.010		mg/kg		0.01	14-AUG-20
trans-1,2-Dichloroethene			<0.010		mg/kg		0.01	14-AUG-20
1,1-Dichloroethane			<0.010		mg/kg		0.01	14-AUG-20
2,2-Dichloropropane			<0.010		mg/kg		0.01	14-AUG-20
cis-1,2-Dichloroethene			<0.010		mg/kg		0.01	14-AUG-20
Chloroform			<0.010		mg/kg		0.01	14-AUG-20
Bromochloromethane			<0.010		mg/kg		0.01	14-AUG-20
1,2-Dichloroethane			<0.010		mg/kg		0.01	14-AUG-20
1,1,1-Trichloroethane			<0.010		mg/kg		0.01	14-AUG-20
1,1-Dichloropropene			<0.010		mg/kg		0.01	14-AUG-20
Carbon tetrachloride			<0.010		mg/kg		0.01	14-AUG-20
Trichloroethene			<0.010		mg/kg		0.01	14-AUG-20
1,2-Dichloropropane			<0.010		mg/kg		0.01	14-AUG-20
Bromodichloromethane			<0.010		mg/kg		0.01	14-AUG-20
Dibromomethane			<0.010		mg/kg		0.01	14-AUG-20
cis-1,3-Dichloropropene			<0.010		mg/kg		0.01	14-AUG-20

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-MEOH-8260-ED	**Soil**							
Batch R5179757								
WG3383959-1 MB								
trans-1,3-Dichloropropene			<0.010		mg/kg		0.01	14-AUG-20
1,1,2-Trichloroethane			<0.010		mg/kg		0.01	14-AUG-20
1,3-Dichloropropane			<0.010		mg/kg		0.01	14-AUG-20
Tetrachloroethene			<0.010		mg/kg		0.01	14-AUG-20
Dibromochloromethane			<0.010		mg/kg		0.01	14-AUG-20
1,2-Dibromoethane			<0.010		mg/kg		0.01	14-AUG-20
Chlorobenzene			<0.010		mg/kg		0.01	14-AUG-20
1,1,1,2-Tetrachloroethane			<0.010		mg/kg		0.01	14-AUG-20
Bromoform			<0.010		mg/kg		0.01	14-AUG-20
Isopropylbenzene			<0.010		mg/kg		0.01	14-AUG-20
1,1,2,2-Tetrachloroethane			<0.050		mg/kg		0.05	14-AUG-20
1,2,3-Trichloropropane			<0.020		mg/kg		0.02	14-AUG-20
n-Propylbenzene			<0.010		mg/kg		0.01	14-AUG-20
Bromobenzene			<0.010		mg/kg		0.01	14-AUG-20
1,3,5-Trimethylbenzene			<0.010		mg/kg		0.01	14-AUG-20
2-Chlorotoluene			<0.010		mg/kg		0.01	14-AUG-20
4-Chlorotoluene			<0.010		mg/kg		0.01	14-AUG-20
tert-Butylbenzene			<0.010		mg/kg		0.01	14-AUG-20
1,2,4-Trimethylbenzene			<0.010		mg/kg		0.01	14-AUG-20
sec-Butylbenzene			<0.010		mg/kg		0.01	14-AUG-20
p-Isopropyltoluene			<0.010		mg/kg		0.01	14-AUG-20
1,3-Dichlorobenzene			<0.010		mg/kg		0.01	14-AUG-20
1,4-Dichlorobenzene			<0.010		mg/kg		0.01	14-AUG-20
n-Butylbenzene			<0.010		mg/kg		0.01	14-AUG-20
1,2-Dichlorobenzene			<0.010		mg/kg		0.01	14-AUG-20
1,2-Dibromo-3-chloropropane			<0.010		mg/kg		0.01	14-AUG-20
1,2,4-Trichlorobenzene			<0.010		mg/kg		0.01	14-AUG-20
Hexachlorobutadiene			<0.010		mg/kg		0.01	14-AUG-20
1,2,3-Trichlorobenzene			<0.010		mg/kg		0.01	14-AUG-20
Surrogate: 1,4-Difluorobenzene (SS)			86.7		%		70-130	14-AUG-20
Surrogate: 4-Bromofluorobenzene (SS)			79.0		%		70-130	14-AUG-20
Surrogate: 3,4-Dichlorotoluene (SS)			75.4		%		70-130	14-AUG-20
WG3383959-4 MS		**L2487835-34**						
Dichlorodifluoromethane			138.1		%		50-140	14-AUG-20

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-MEOH-8260-ED	**Soil**							
Batch R5179757								
WG3383959-4 MS		**L2487835-34**						
Chloromethane			127.1		%		50-140	14-AUG-20
Vinyl chloride			119.0		%		50-140	14-AUG-20
Bromomethane			109.6		%		50-140	14-AUG-20
Chloroethane			109.0		%		50-140	14-AUG-20
Trichlorofluoromethane			131.4		%		50-140	14-AUG-20
1,1-Dichloroethene			117.8		%		50-140	14-AUG-20
Methylene chloride			113.6		%		50-140	14-AUG-20
trans-1,2-Dichloroethene			118.9		%		50-140	14-AUG-20
1,1-Dichloroethane			117.8		%		50-140	14-AUG-20
2,2-Dichloropropane			104.4		%		50-140	14-AUG-20
cis-1,2-Dichloroethene			100.2		%		50-140	14-AUG-20
Chloroform			114.1		%		50-140	14-AUG-20
Bromochloromethane			104.1		%		50-140	14-AUG-20
1,2-Dichloroethane			103.5		%		50-140	14-AUG-20
1,1,1-Trichloroethane			117.0		%		50-140	14-AUG-20
1,1-Dichloropropene			98.4		%		50-140	14-AUG-20
Carbon tetrachloride			116.1		%		50-140	14-AUG-20
Trichloroethene			107.1		%		50-140	14-AUG-20
1,2-Dichloropropane			101.5		%		50-140	14-AUG-20
Bromodichloromethane			96.6		%		50-140	14-AUG-20
Dibromomethane			96.8		%		50-140	14-AUG-20
cis-1,3-Dichloropropene			89.9		%		50-140	14-AUG-20
trans-1,3-Dichloropropene			91.2		%		50-140	14-AUG-20
1,1,2-Trichloroethane			95.1		%		50-140	14-AUG-20
1,3-Dichloropropane			89.4		%		50-140	14-AUG-20
Tetrachloroethene			100.8		%		50-140	14-AUG-20
Dibromochloromethane			91.3		%		50-140	14-AUG-20
1,2-Dibromoethane			93.1		%		50-140	14-AUG-20
Chlorobenzene			99.3		%		50-140	14-AUG-20
1,1,1,2-Tetrachloroethane			103.2		%		50-140	14-AUG-20
Bromoform			106.9		%		50-140	14-AUG-20
Isopropylbenzene			98.9		%		50-140	14-AUG-20
1,1,2,2-Tetrachloroethane			116.2		%		50-140	14-AUG-20
1,2,3-Trichloropropane			109.9		%		50-140	14-AUG-20

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-MEOH-8260-ED	**Soil**							
Batch R5179757								
WG3383959-4 MS		**L2487835-34**						
n-Propylbenzene			97.9		%		50-140	14-AUG-20
Bromobenzene			113.6		%		50-140	14-AUG-20
1,3,5-Trimethylbenzene			135.1		%		50-140	14-AUG-20
2-Chlorotoluene			129.7		%		50-140	14-AUG-20
4-Chlorotoluene			121.7		%		50-140	14-AUG-20
tert-Butylbenzene			126.3		%		50-140	14-AUG-20
1,2,4-Trimethylbenzene			139.4		%		50-140	14-AUG-20
sec-Butylbenzene			130.2		%		50-140	14-AUG-20
p-Isopropyltoluene			125.9		%		50-140	14-AUG-20
1,3-Dichlorobenzene			123.9		%		50-140	14-AUG-20
1,4-Dichlorobenzene			125.1		%		50-140	14-AUG-20
n-Butylbenzene			134.9		%		50-140	14-AUG-20
1,2-Dichlorobenzene			119.3		%		50-140	14-AUG-20
1,2-Dibromo-3-chloropropane			98.7		%		50-140	14-AUG-20
1,2,4-Trichlorobenzene			108.8		%		50-140	14-AUG-20
Hexachlorobutadiene			117.2		%		50-140	14-AUG-20
1,2,3-Trichlorobenzene			95.9		%		50-140	14-AUG-20

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

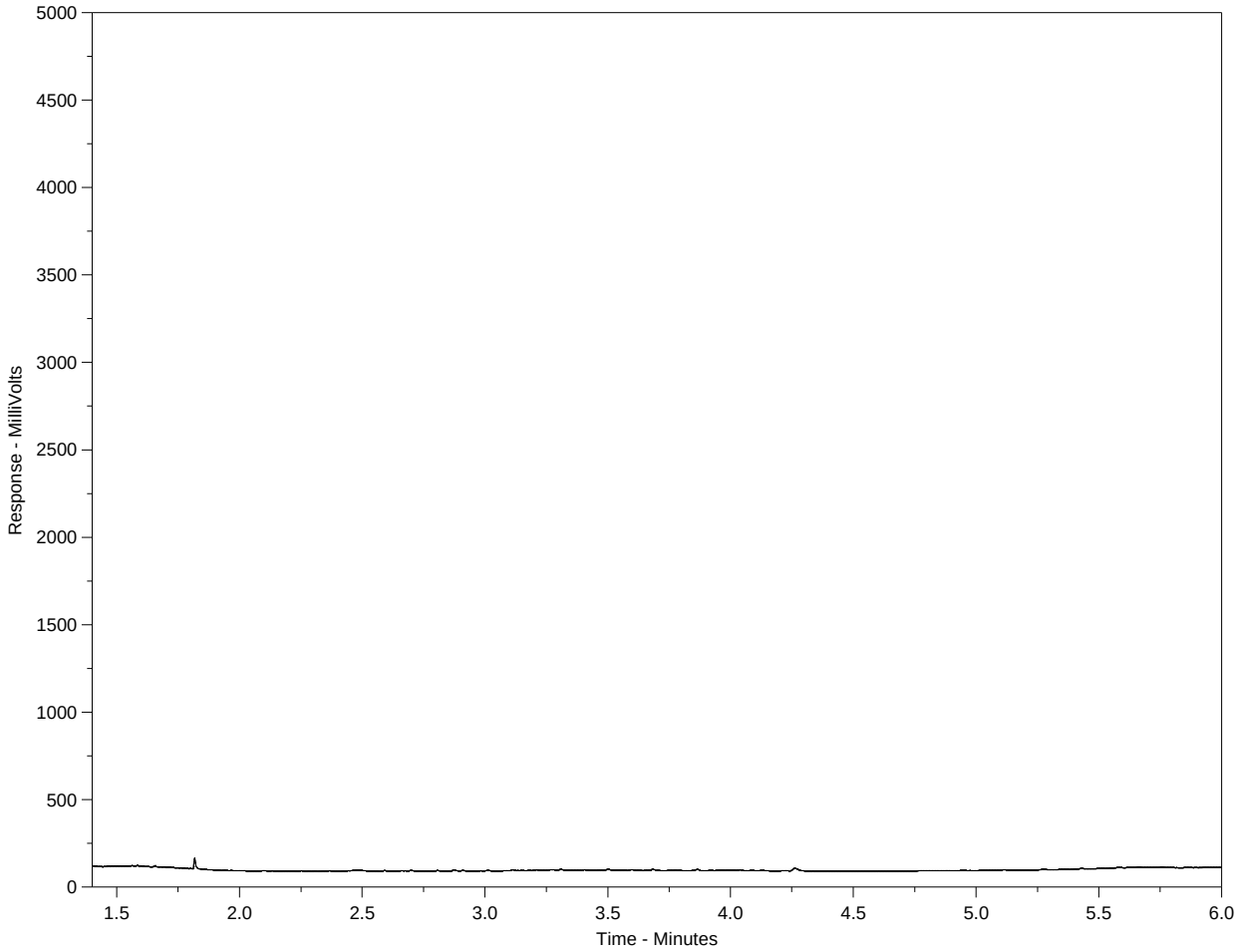
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

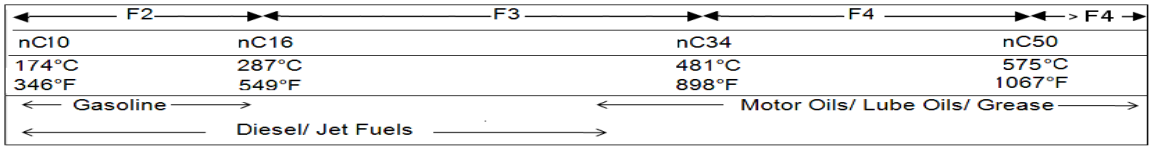
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

Hydrocarbon Distribution Report

ALS Sample ID: L2487835-1
Client ID: EX-06-06





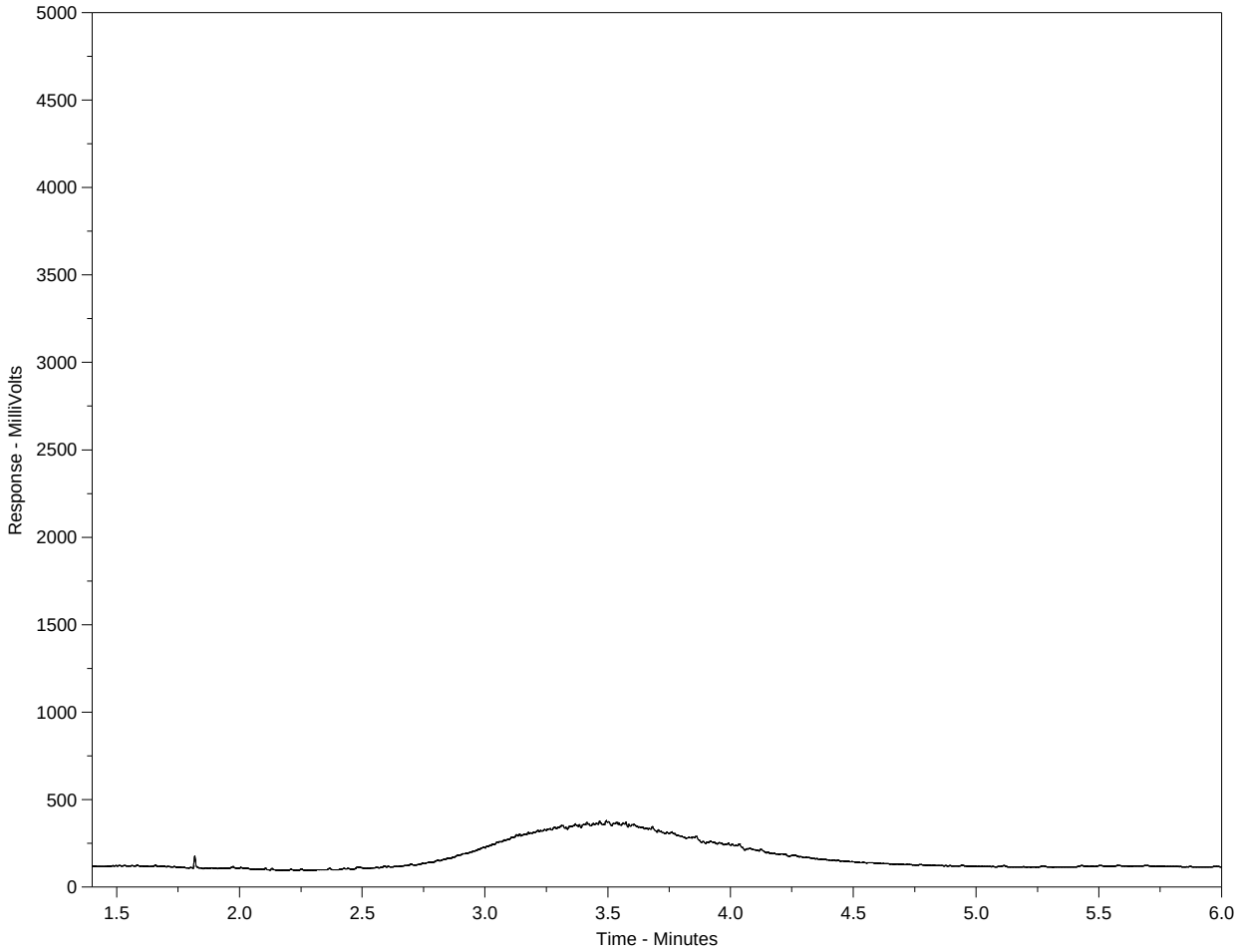
The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

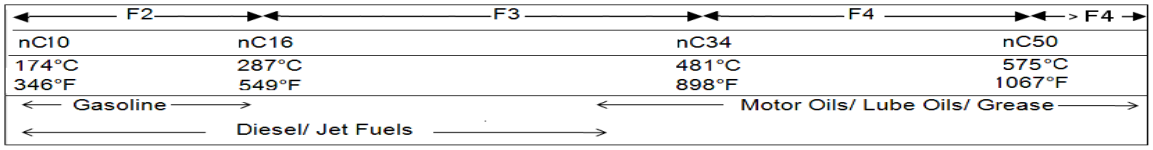
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2487835-2
Client ID: EX-06-20





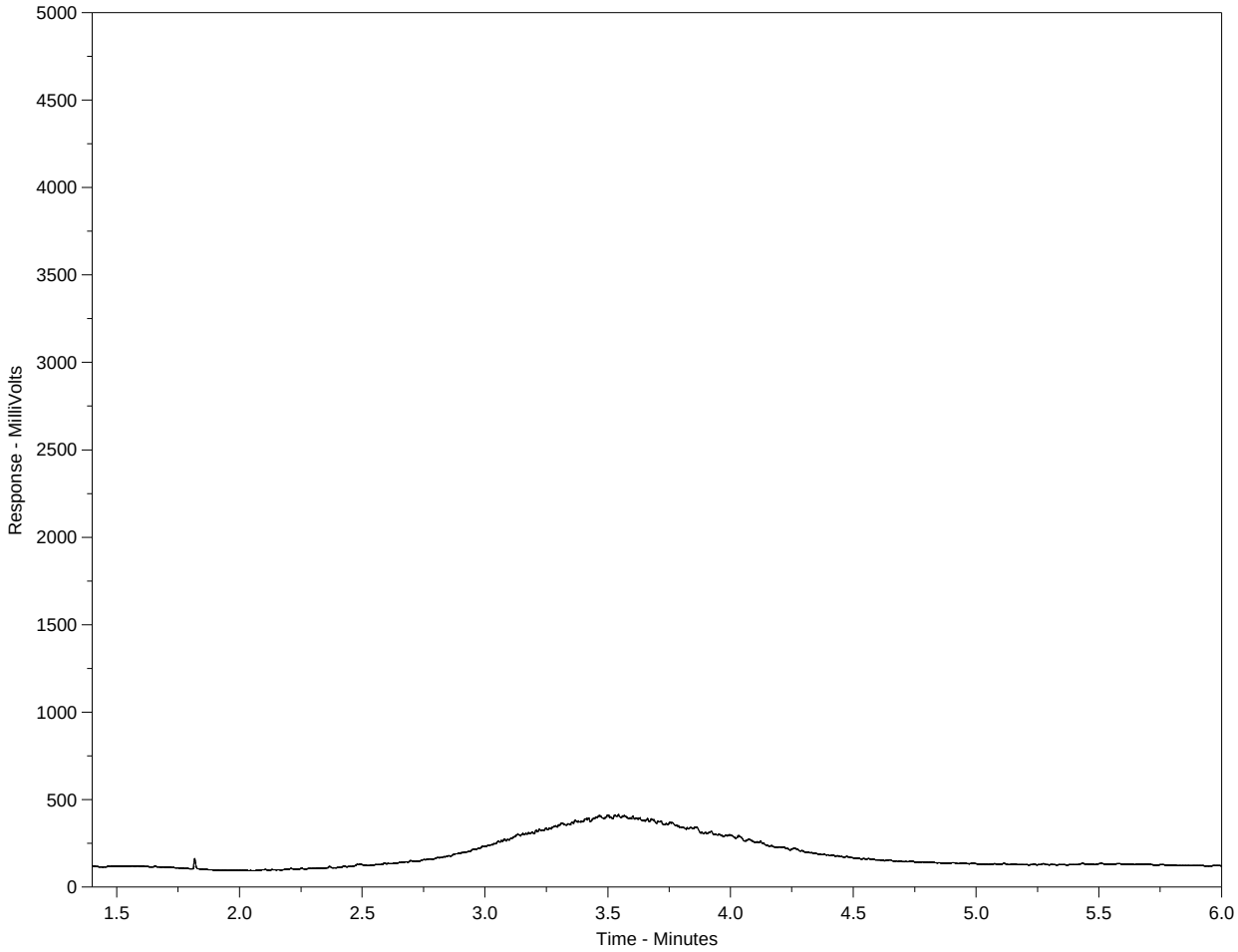
The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

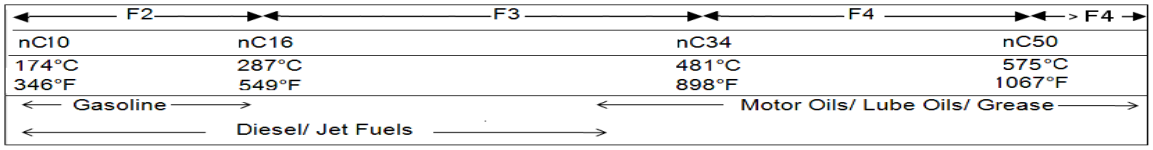
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2487835-3
Client ID: EX-06-21





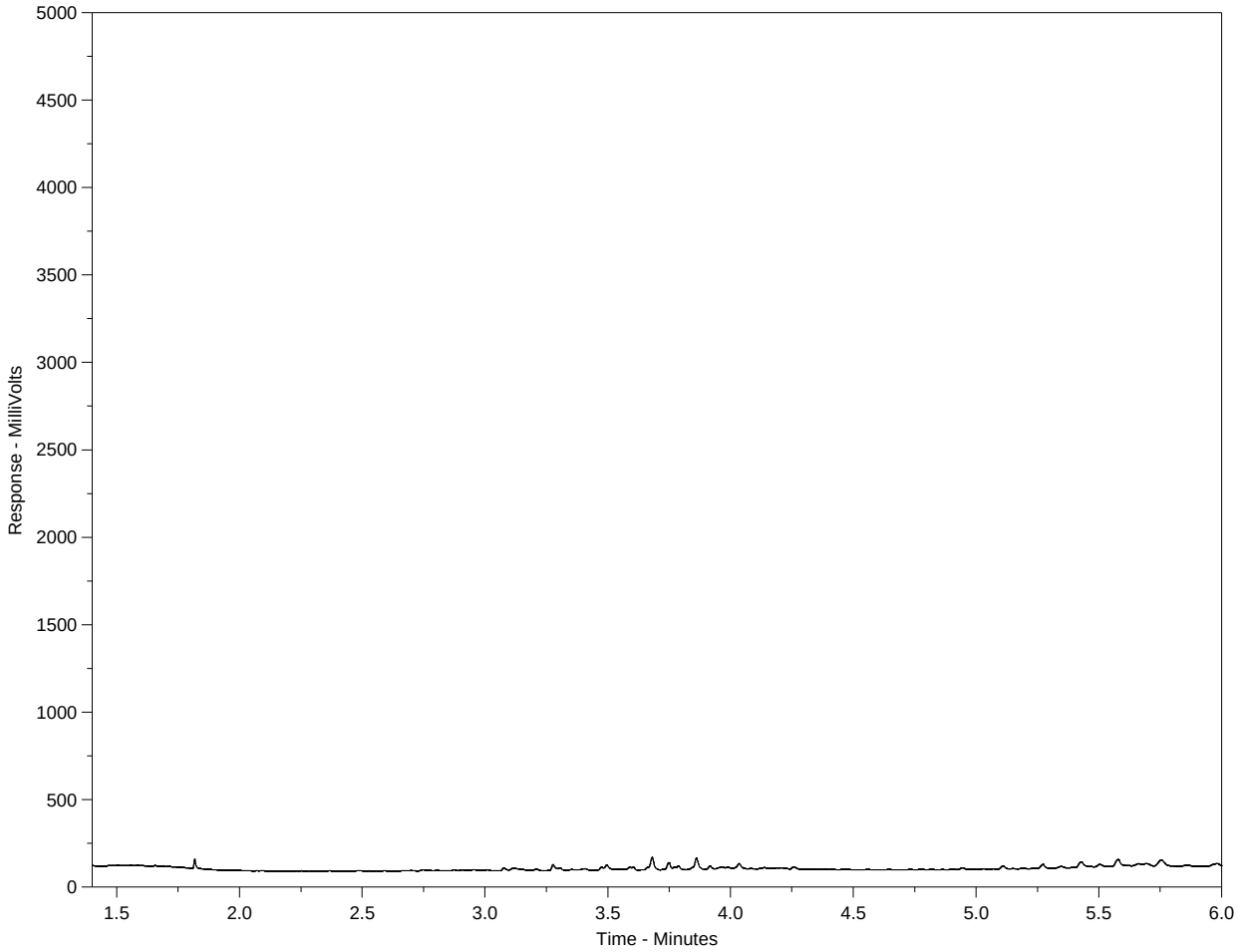
The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

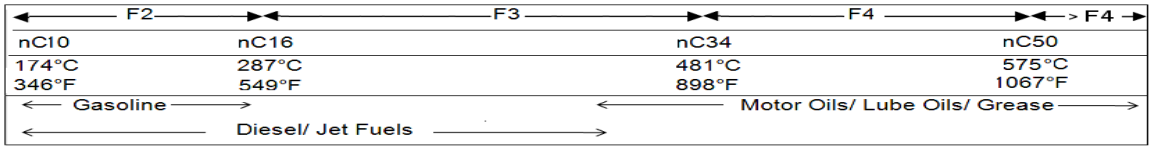
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2487835-4
Client ID: EX-06-22





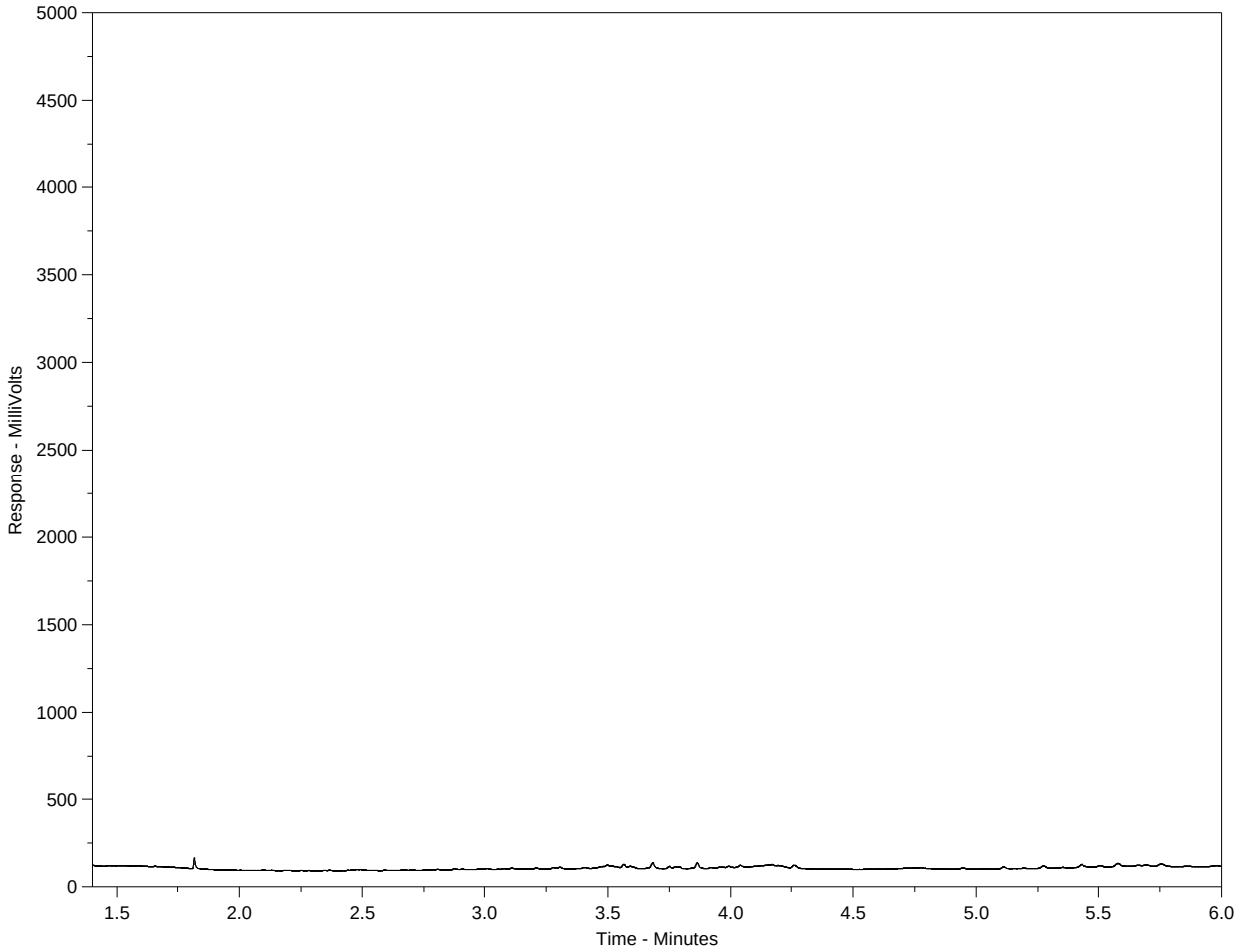
The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

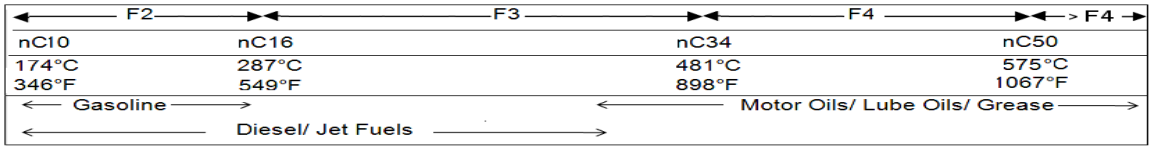
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
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Hydrocarbon Distribution Report

ALS Sample ID: L2487835-5
Client ID: EX-06-23





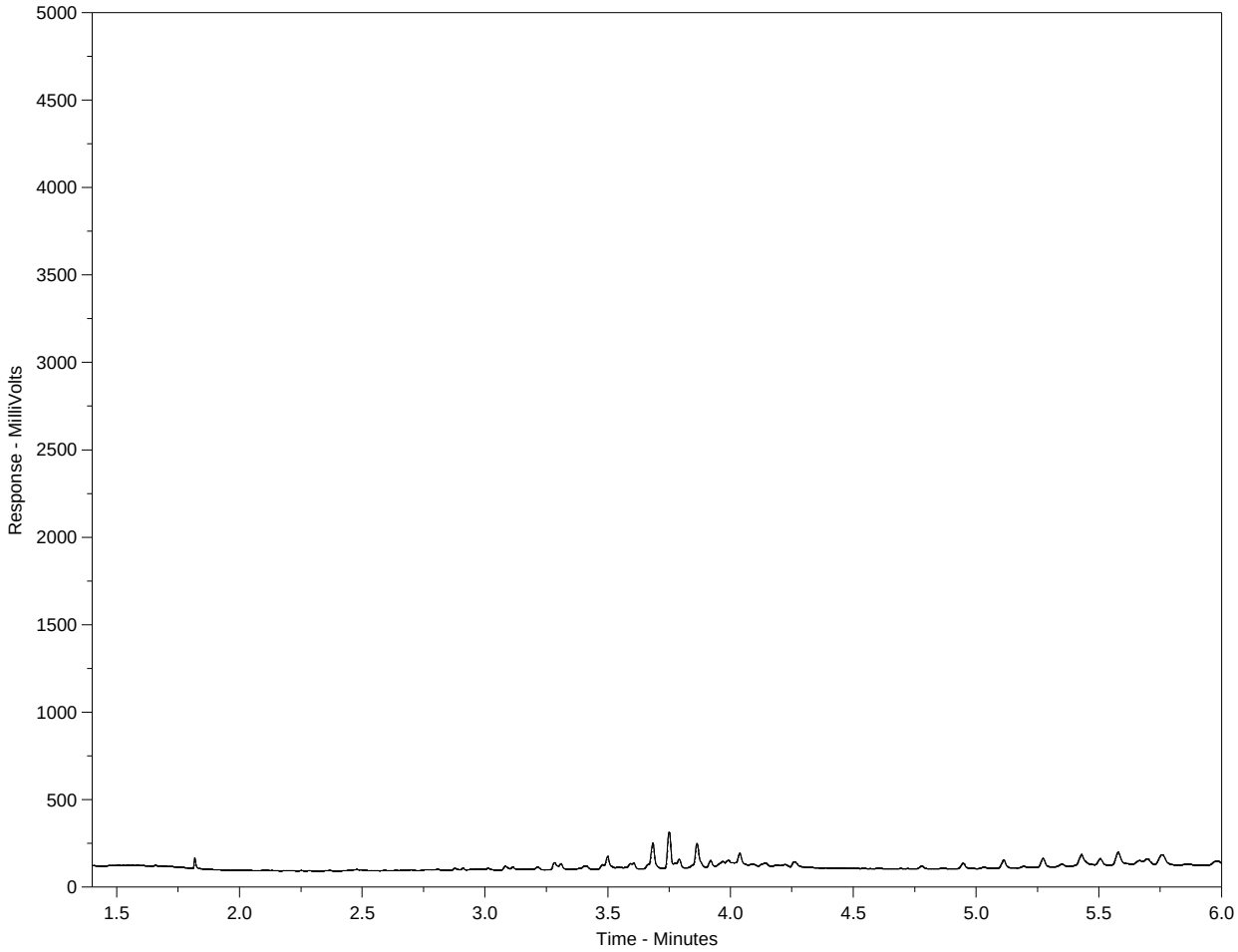
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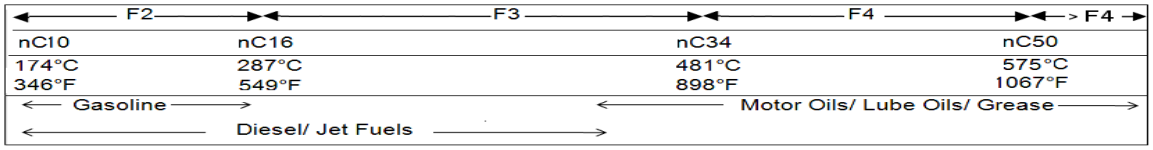
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2487835-6
Client ID: EX-06-24





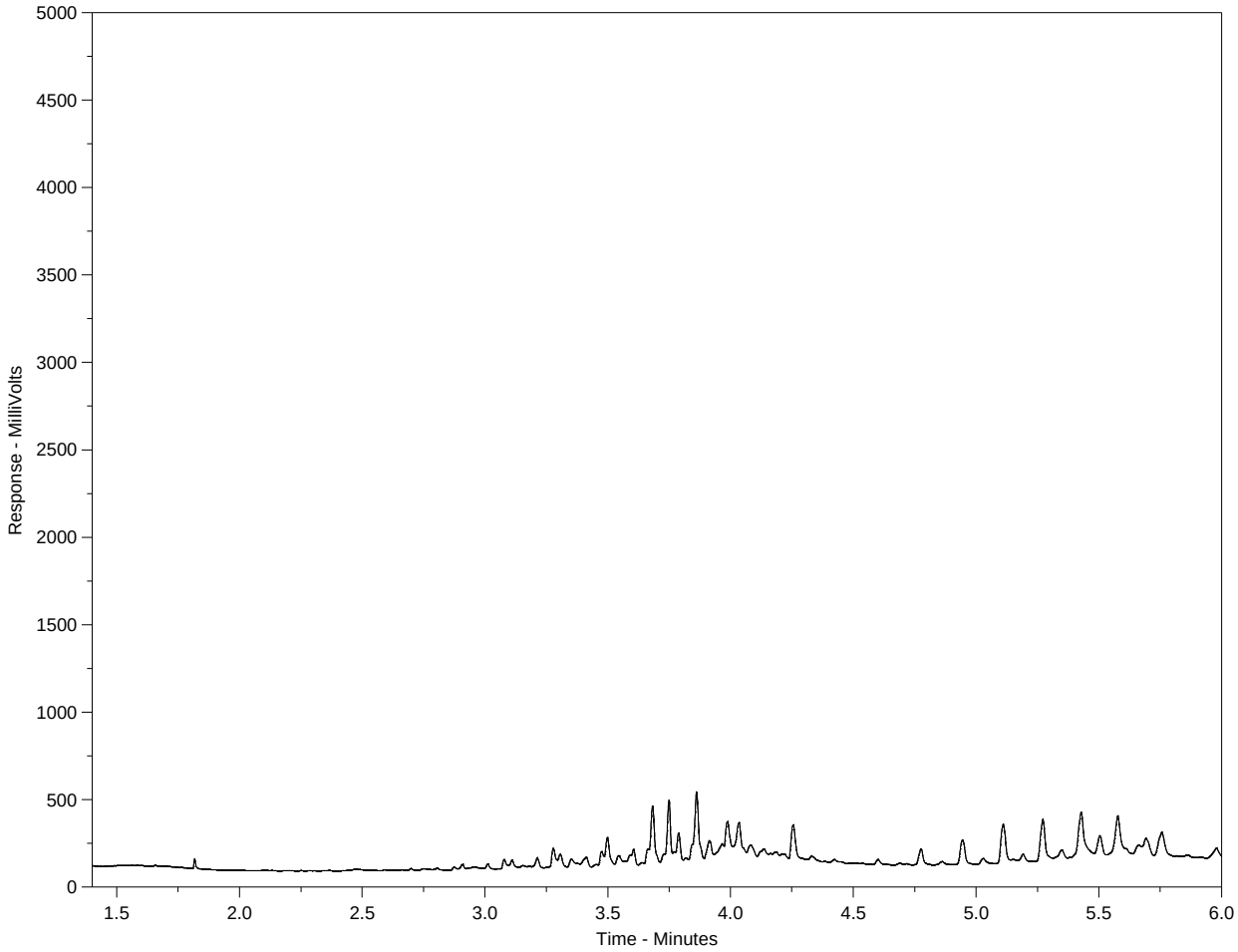
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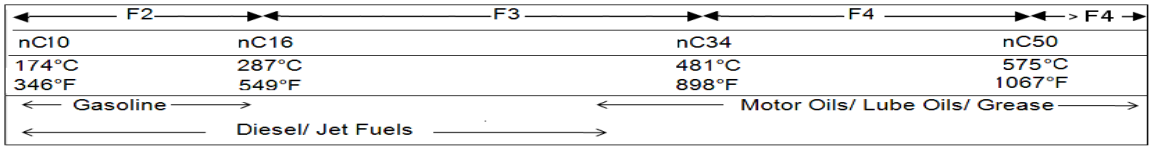
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
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Hydrocarbon Distribution Report

ALS Sample ID: L2487835-7
Client ID: EX-06-25





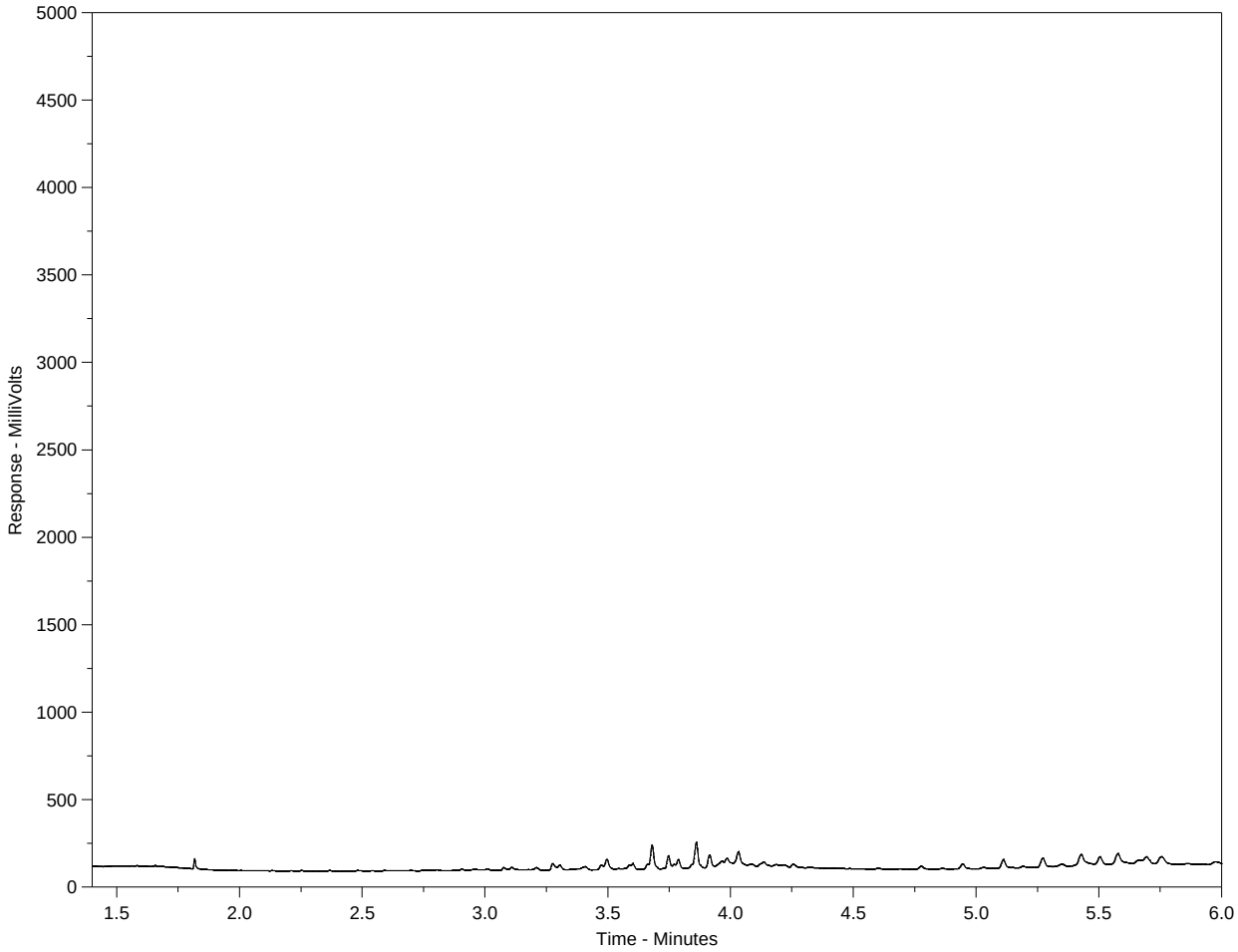
The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

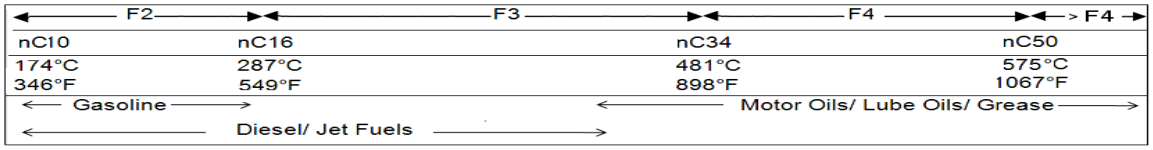
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2487835-8
Client ID: EX-06-26





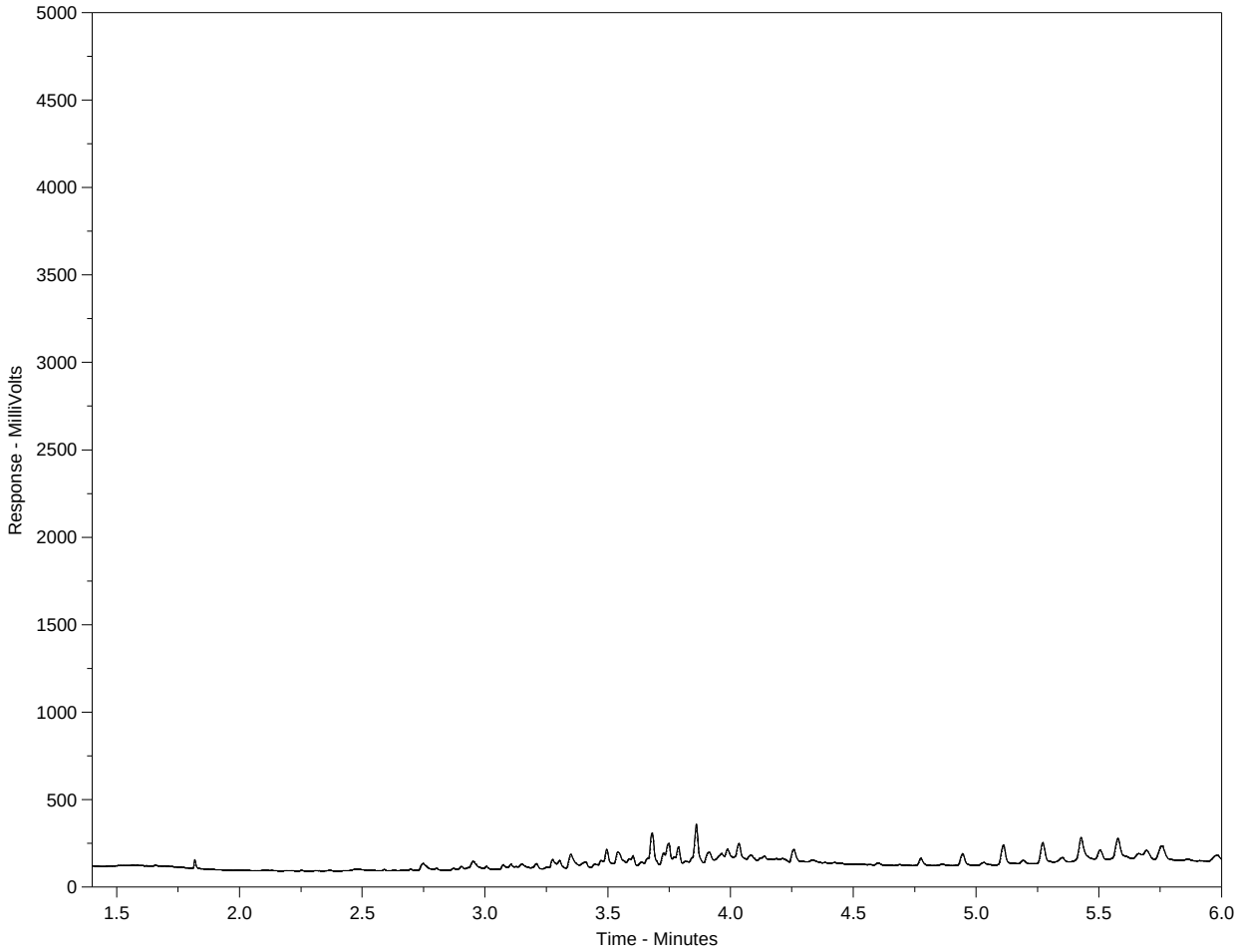
The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

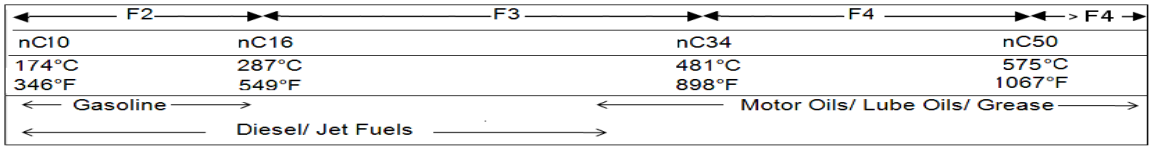
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2487835-9
Client ID: EX-06-27





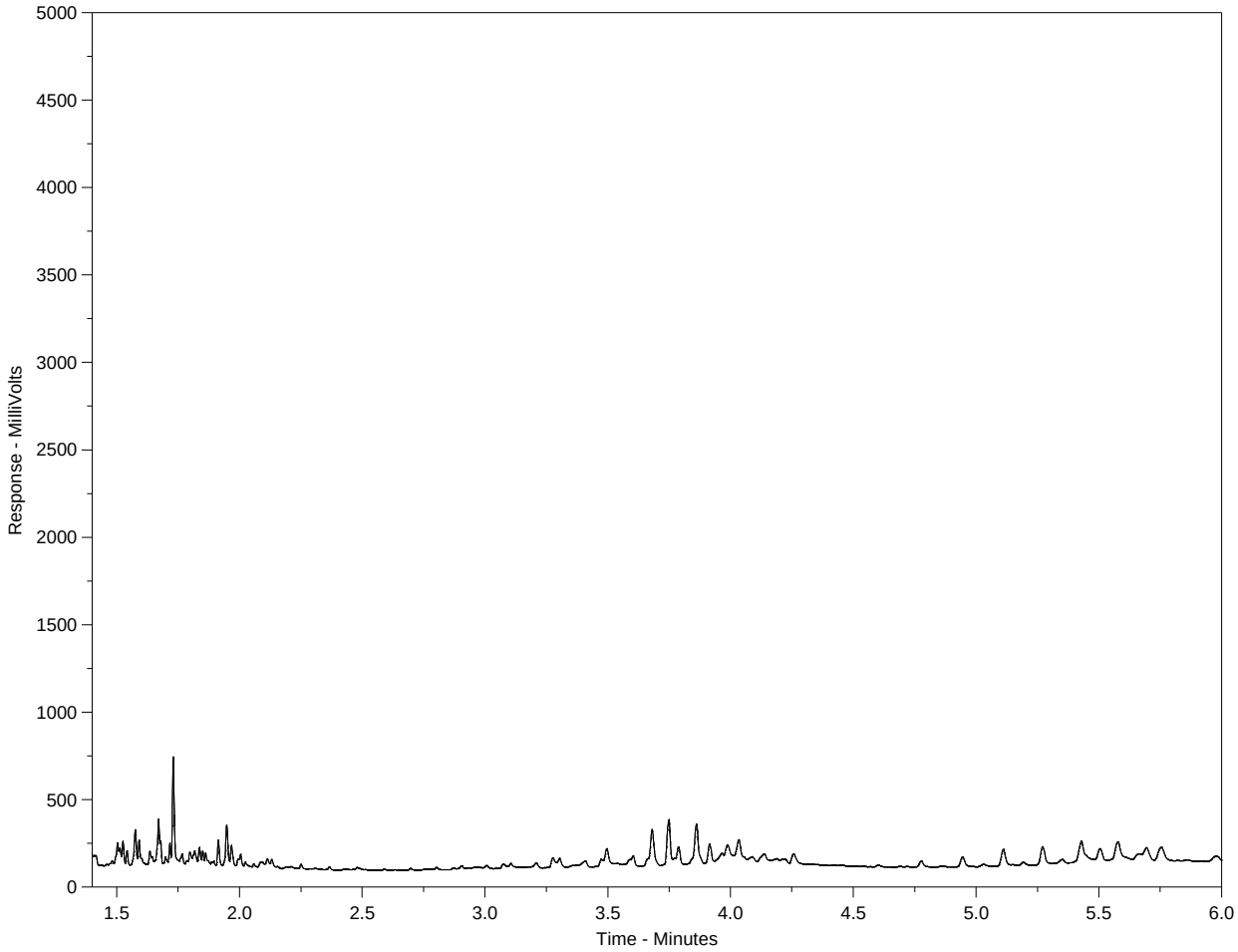
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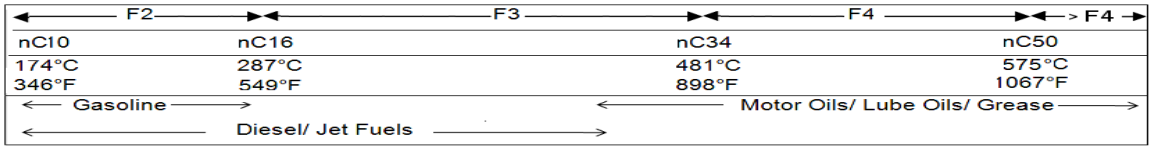
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2487835-10
Client ID: EX-06-30





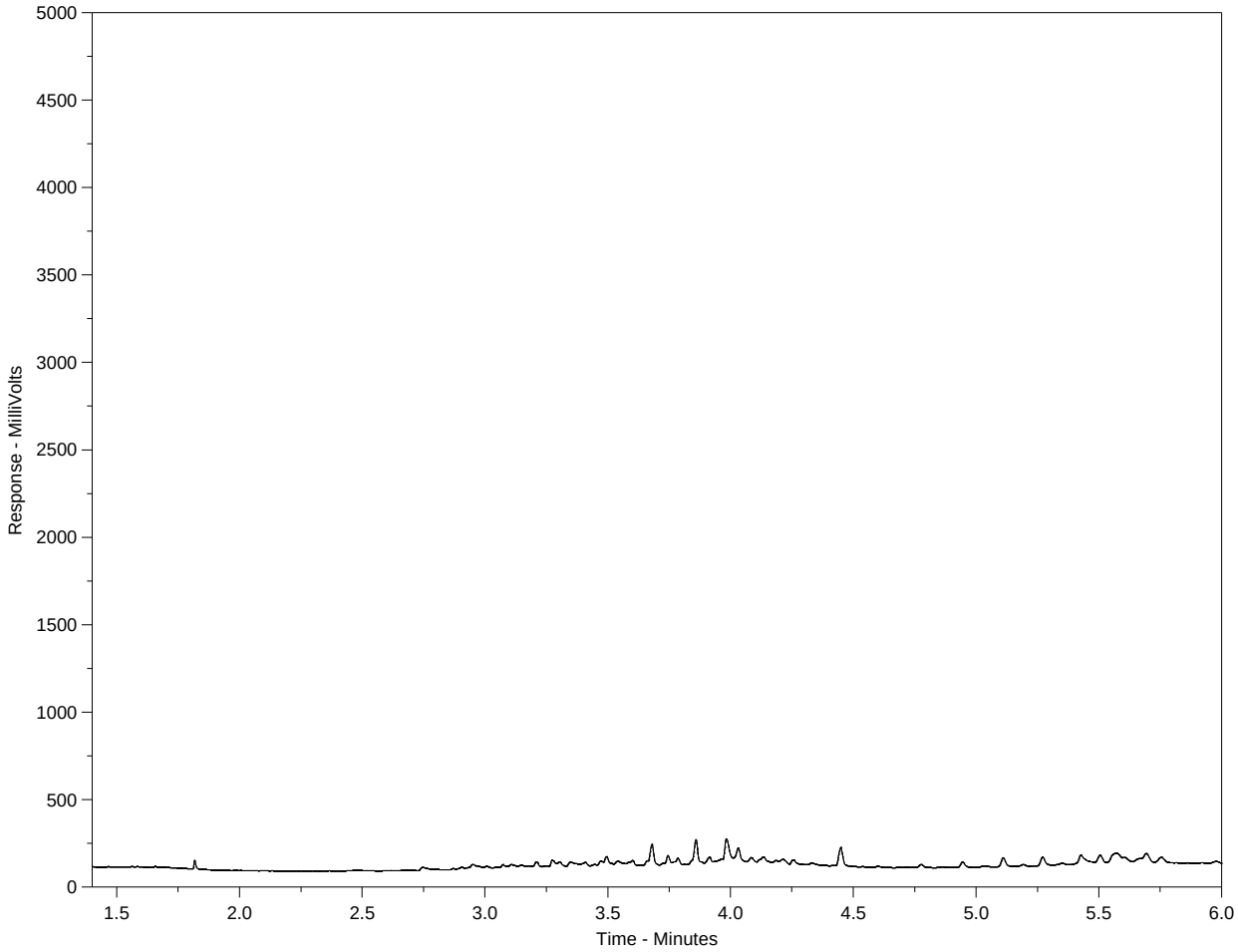
The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

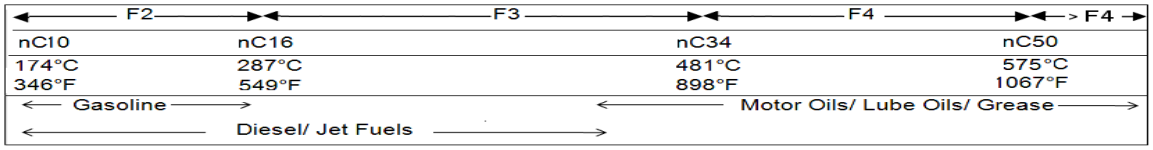
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2487835-11
Client ID: EX-06-35





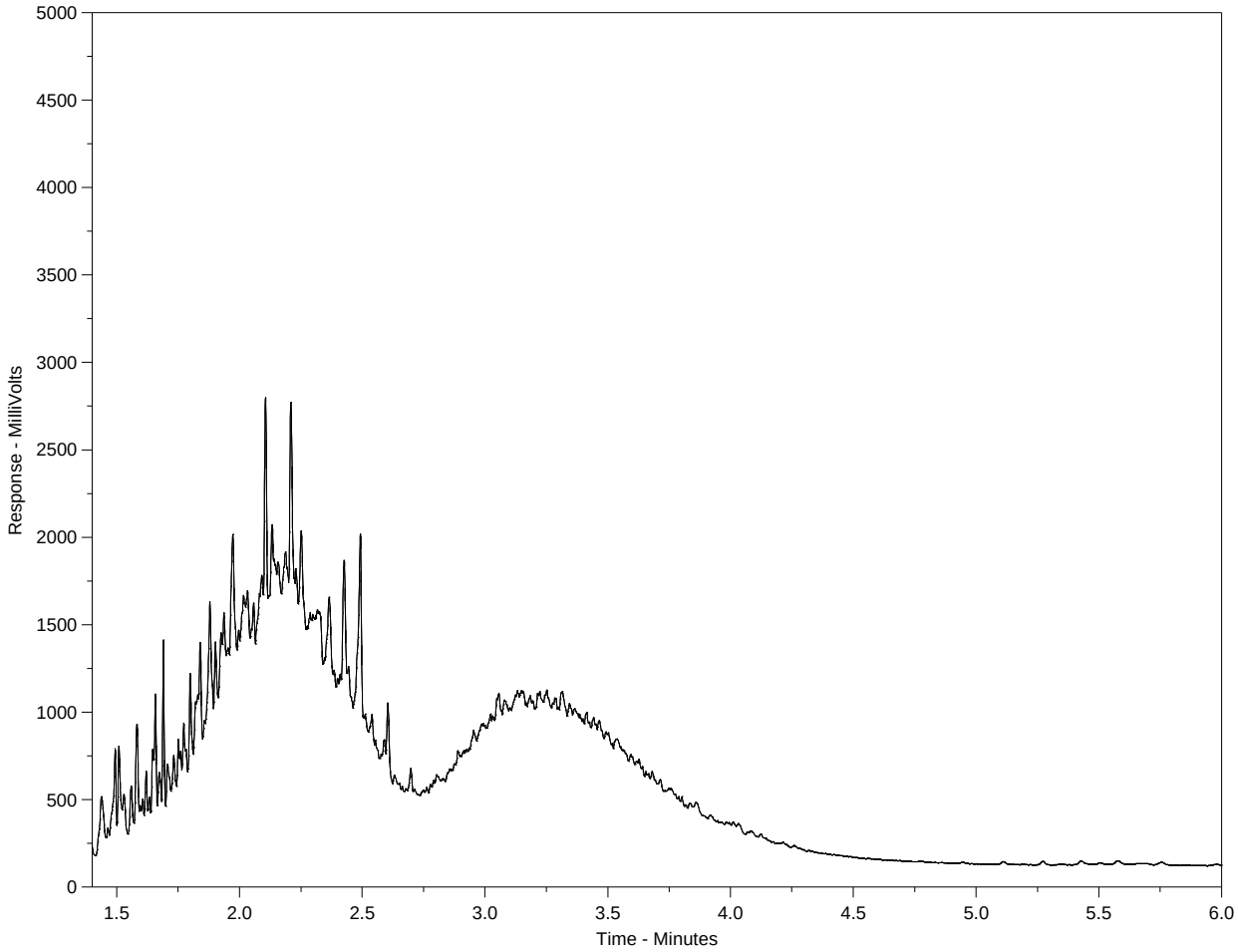
The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

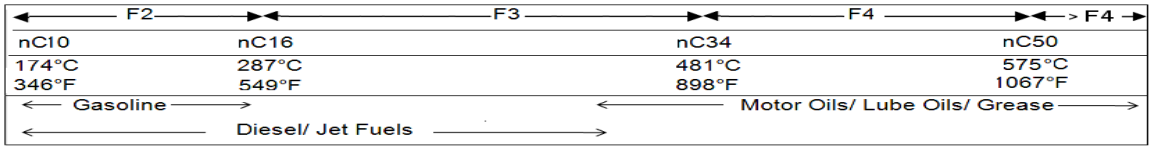
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
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Hydrocarbon Distribution Report

ALS Sample ID: L2487835-12
Client ID: EX-06-36





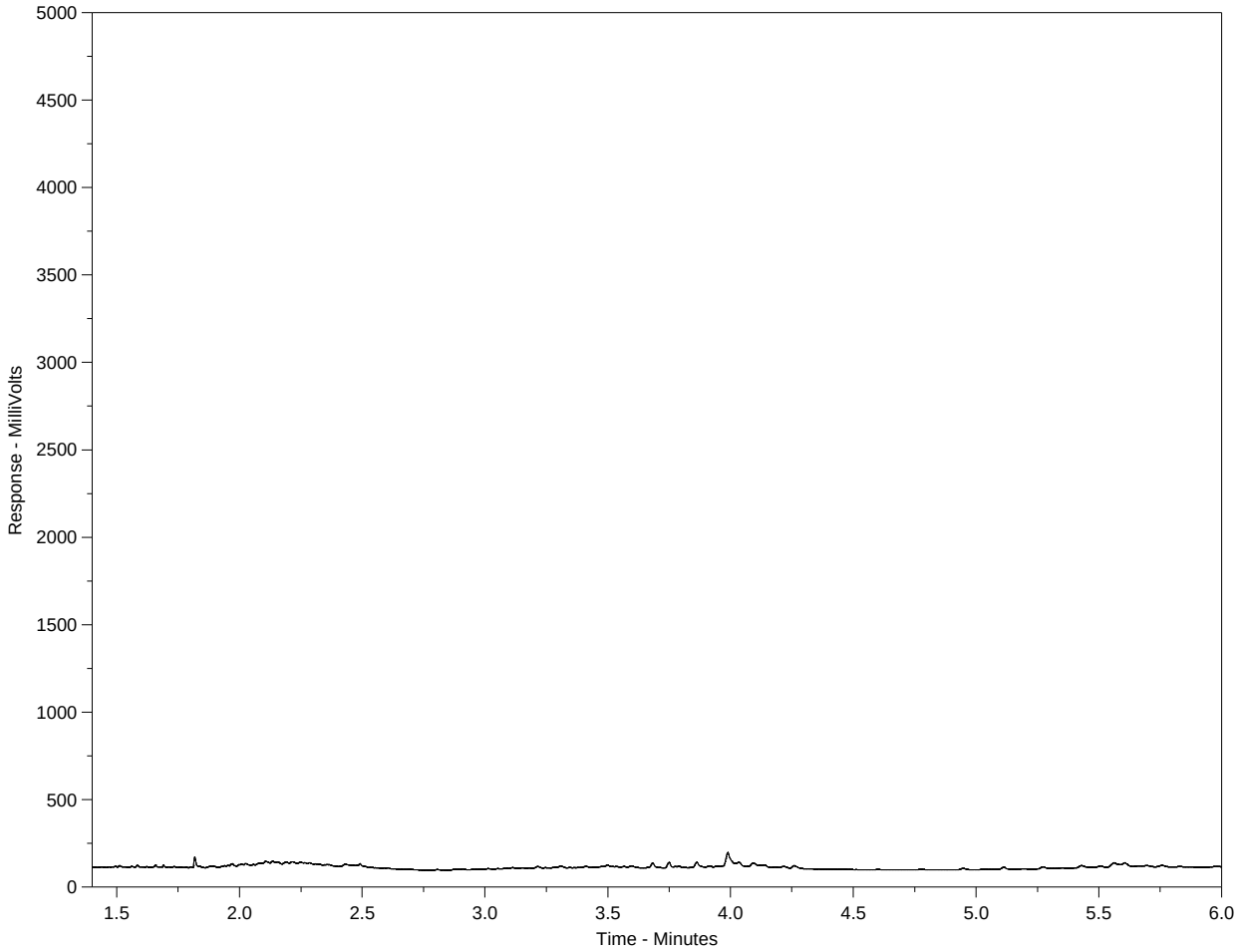
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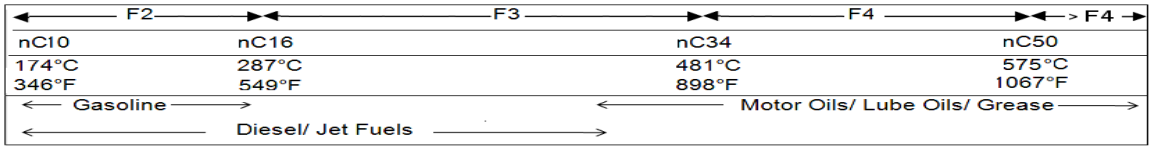
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2487835-13
Client ID: EX-06-37





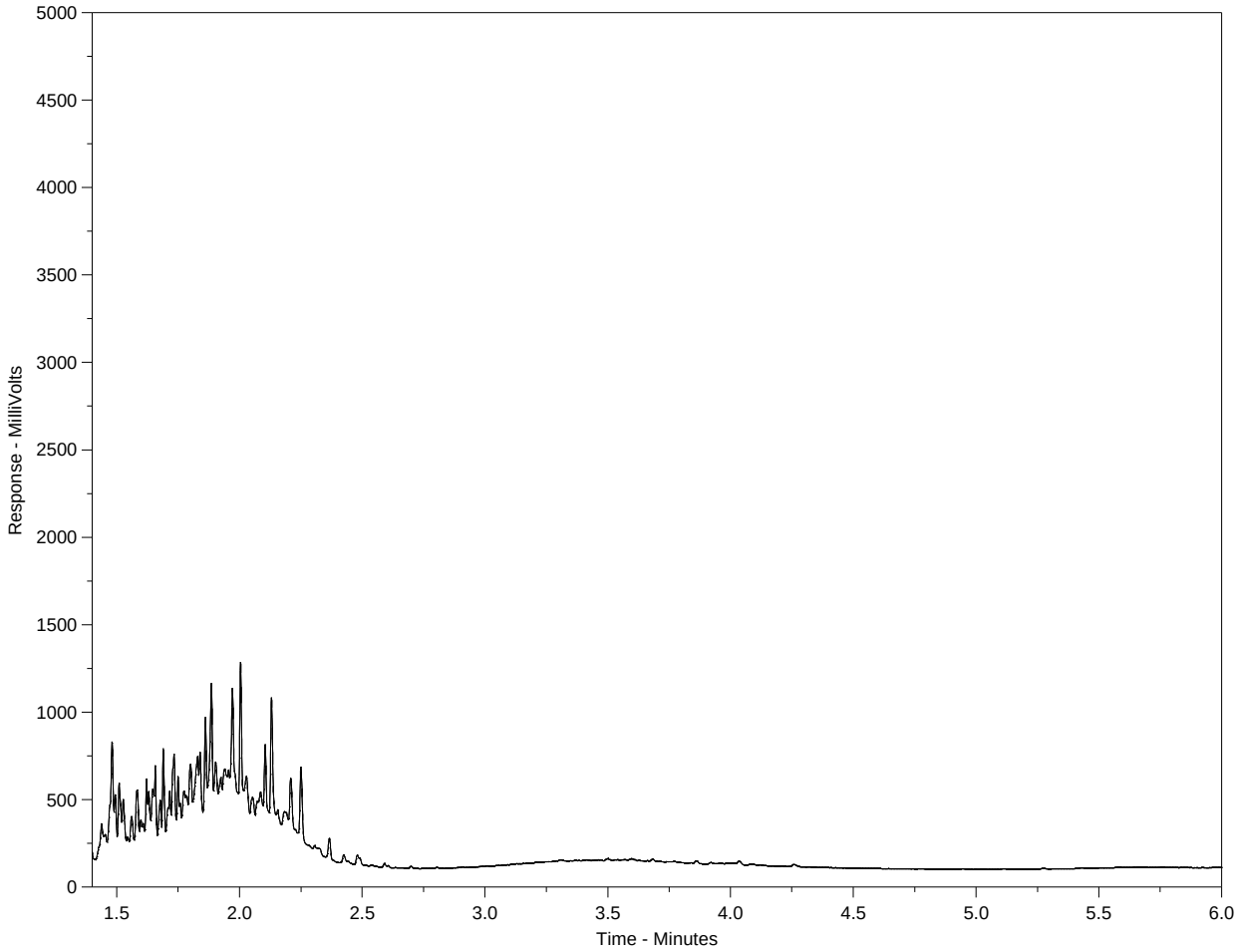
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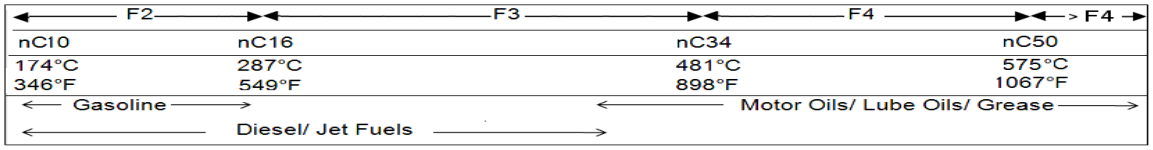
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
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Hydrocarbon Distribution Report

ALS Sample ID: L2487835-14
Client ID: EX-06-42





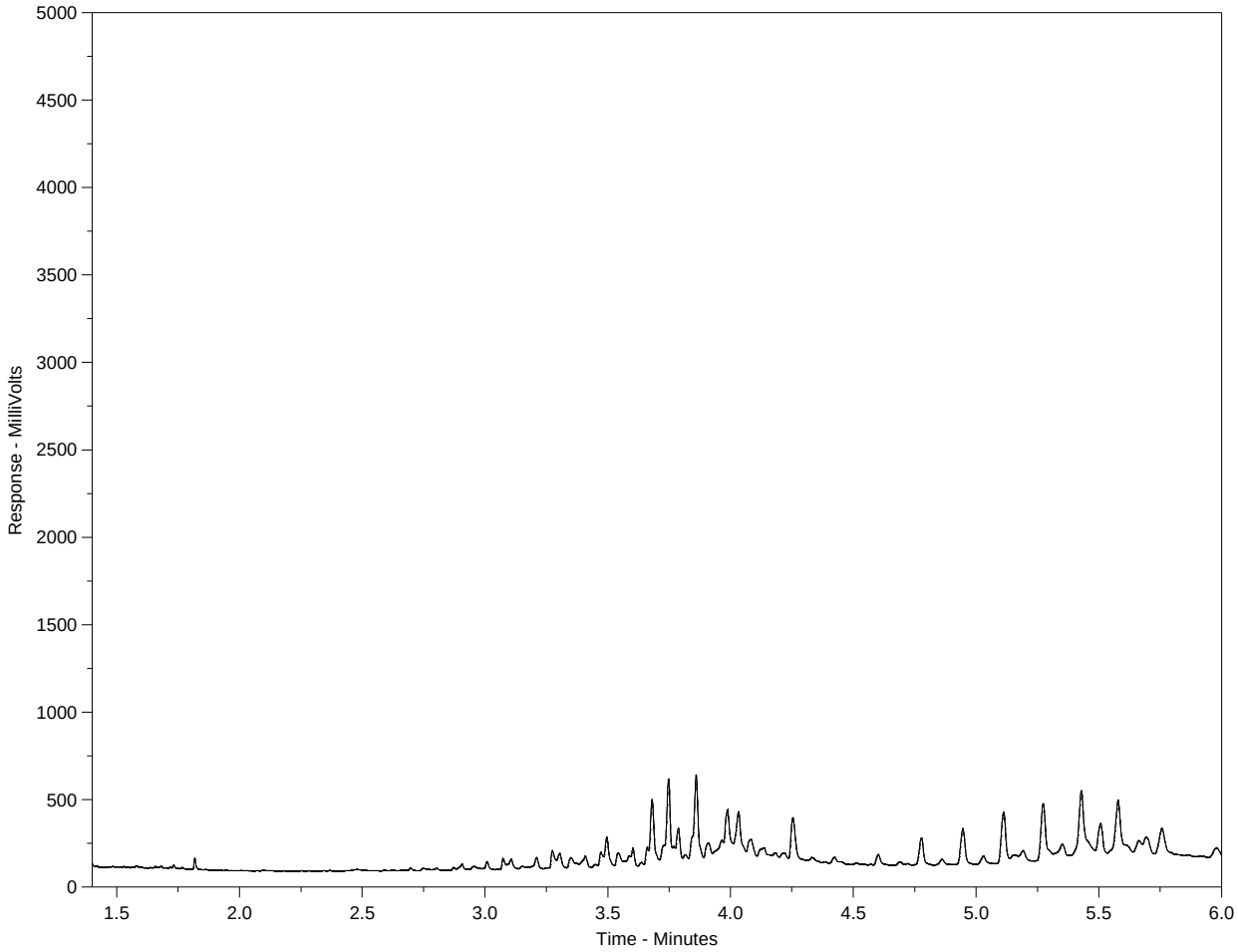
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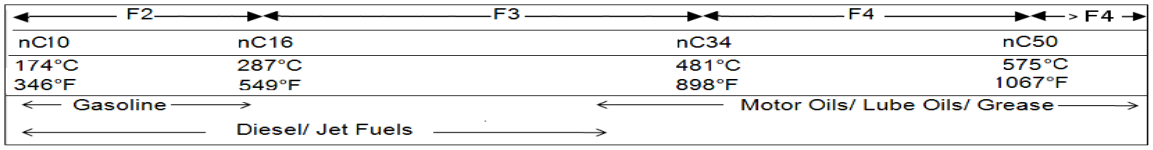
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
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Hydrocarbon Distribution Report

ALS Sample ID: L2487835-15
Client ID: EX-06-43





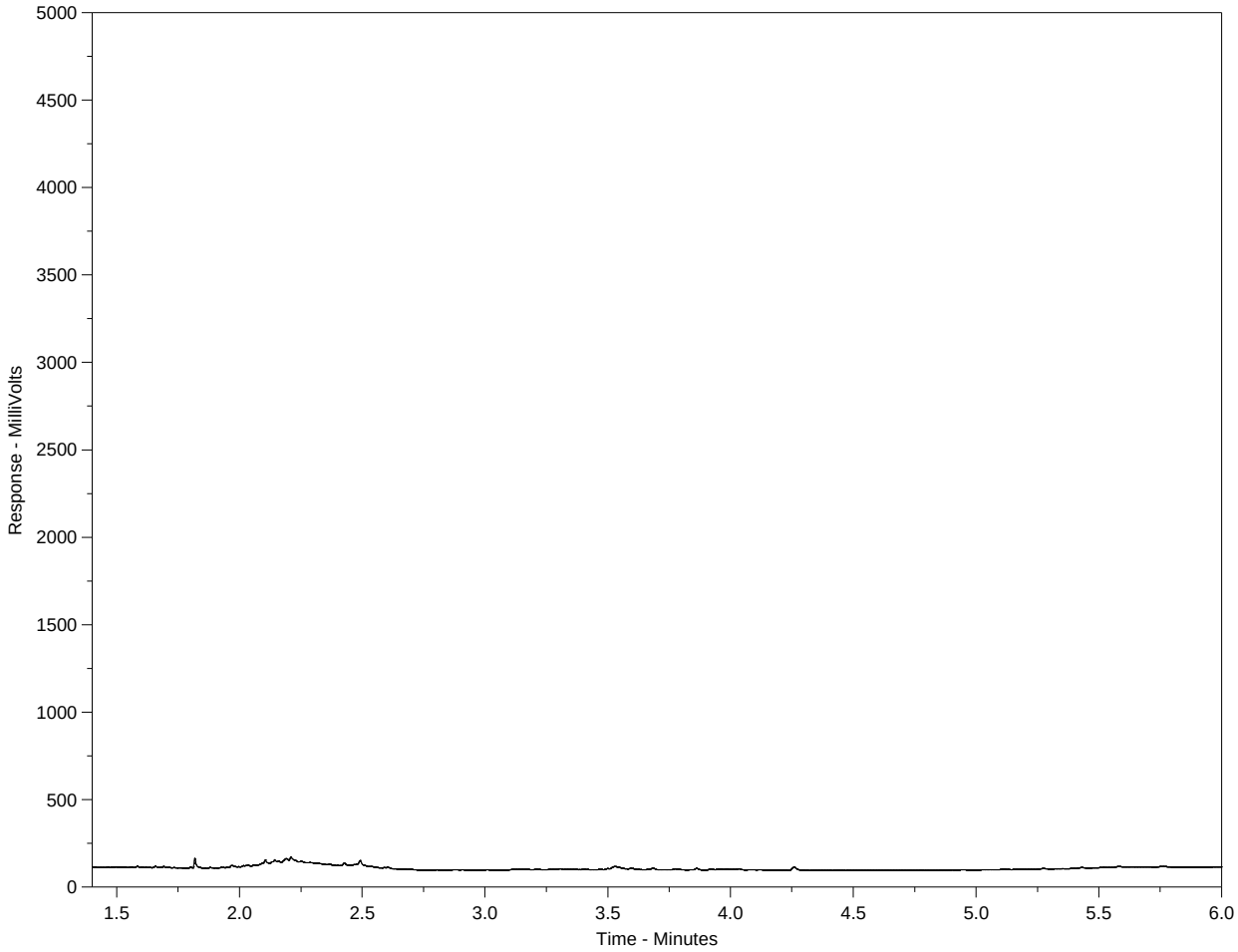
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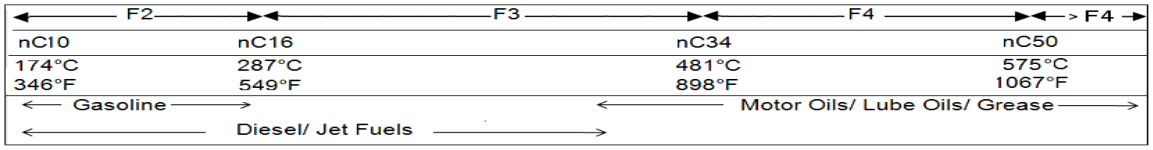
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2487835-16
Client ID: EX-06-45





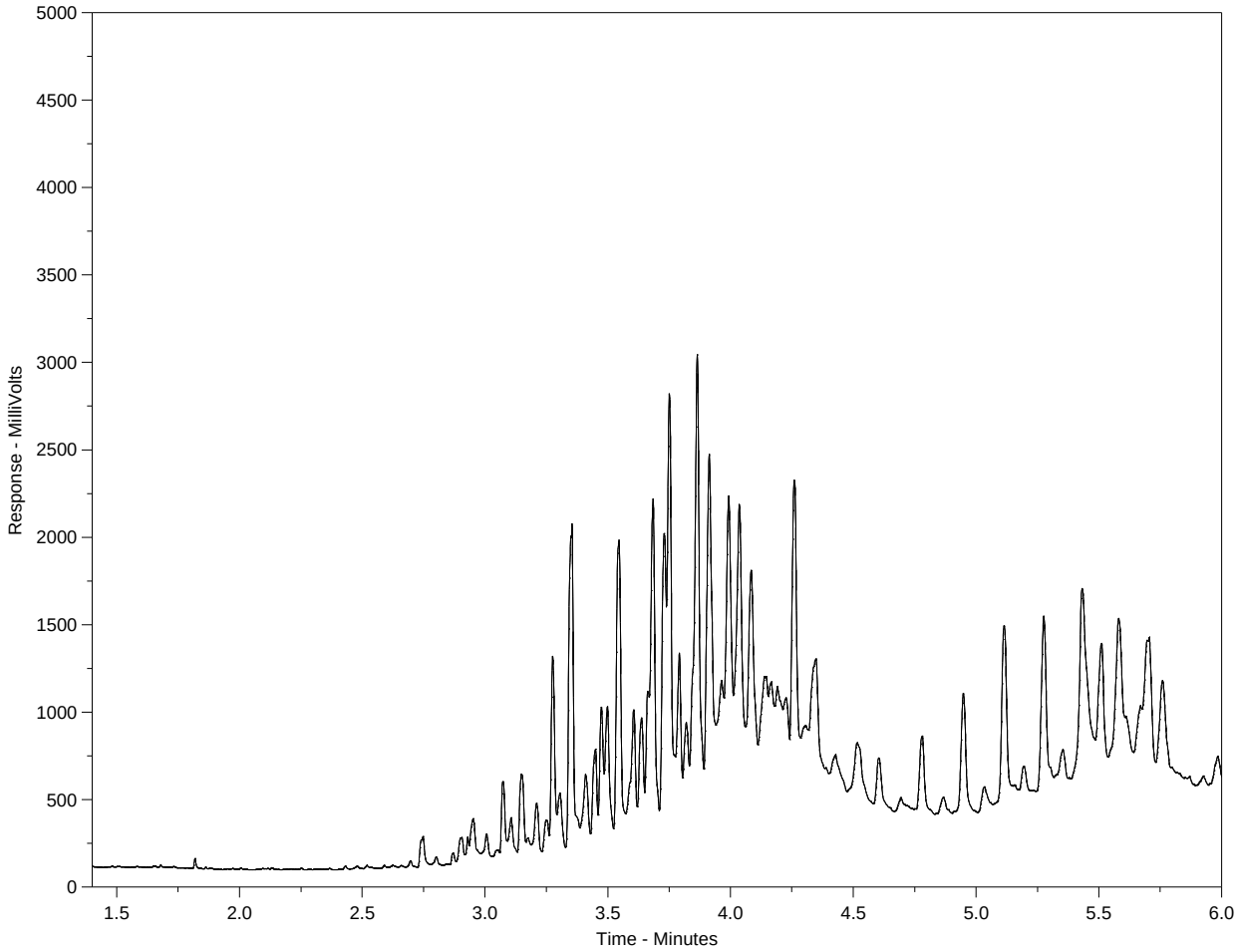
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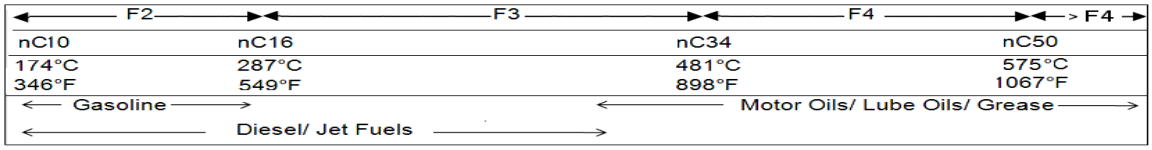
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2487835-17
Client ID: EX-06-49





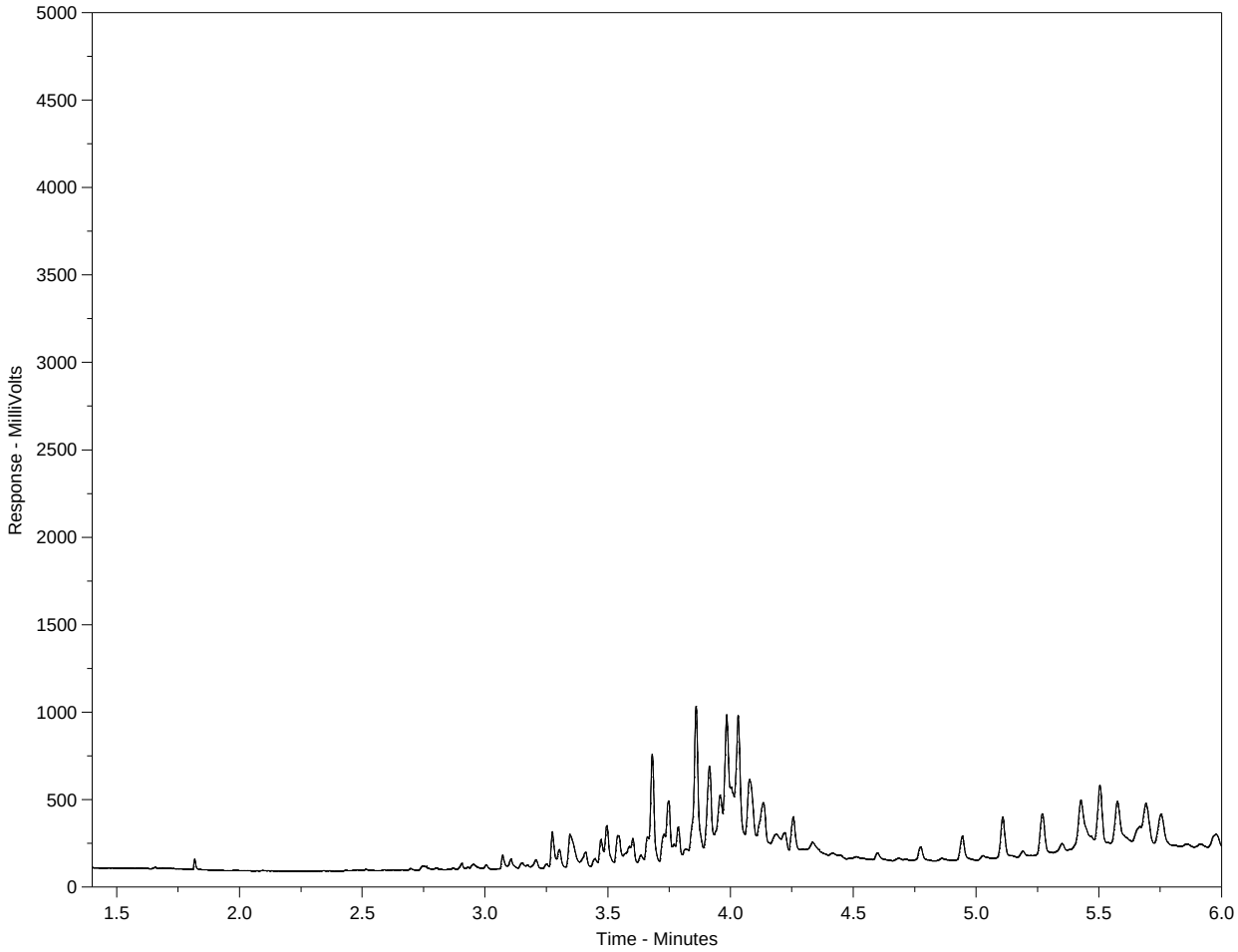
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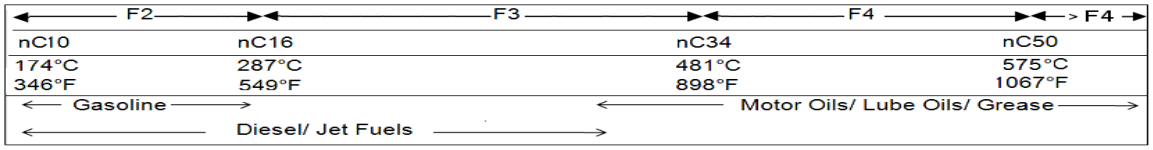
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2487835-18
Client ID: EX-06-54





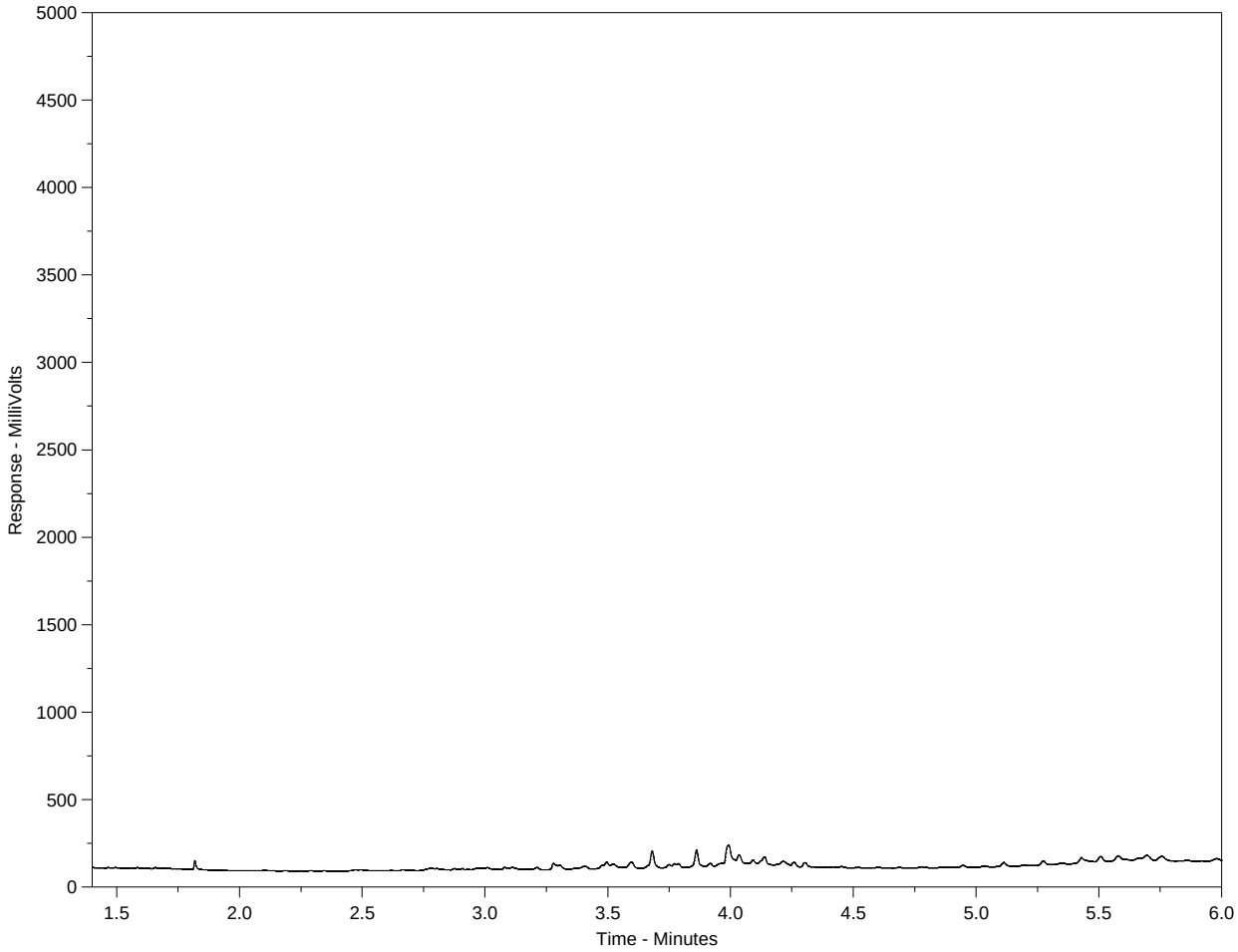
The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

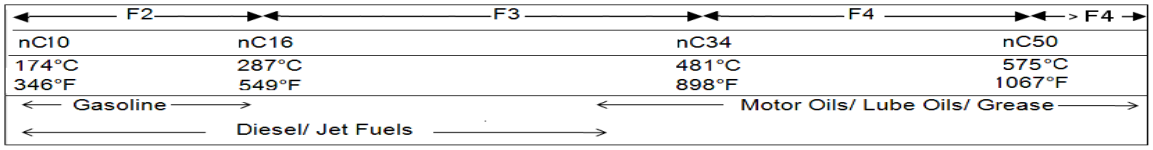
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2487835-19
Client ID: EX-06-57





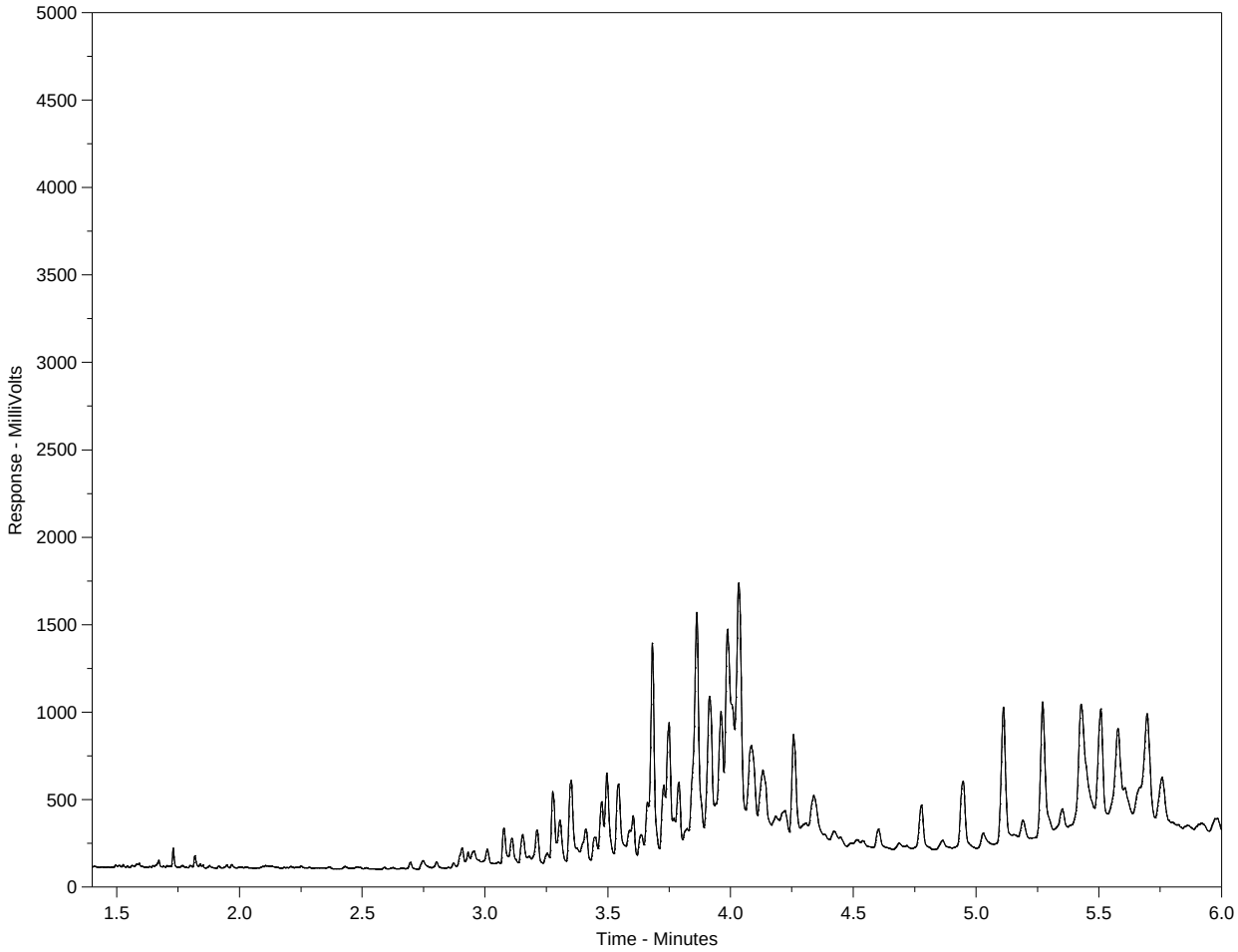
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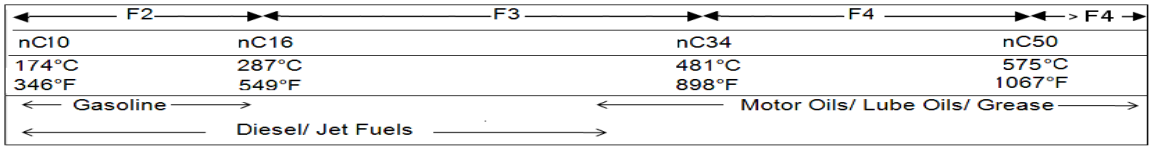
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2487835-20
Client ID: EX-06-59





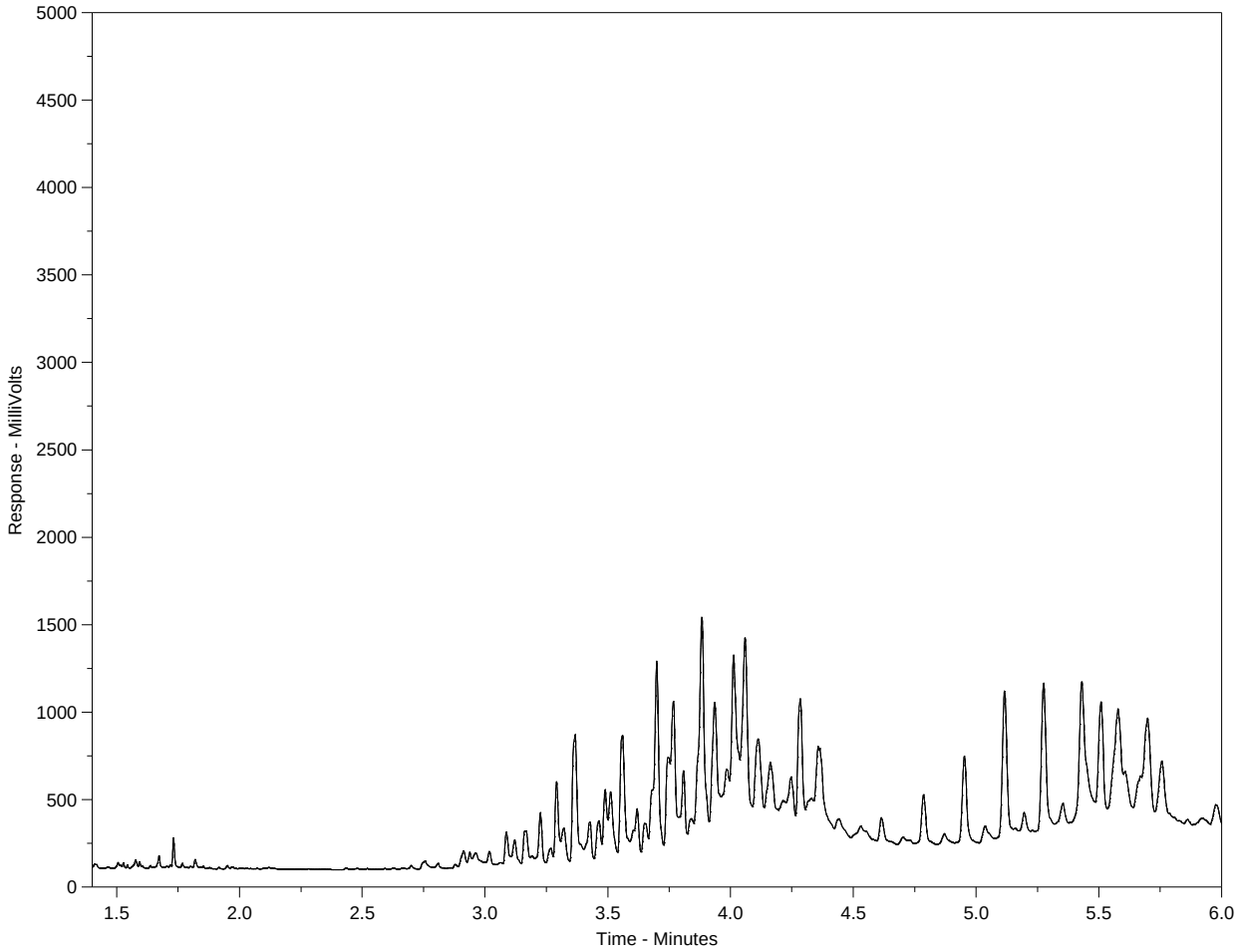
The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2487835-21
Client ID: EX-06-60



F2		F3		F4		> F4
nC10		nC16		nC34		nC50
174°C		287°C		481°C		575°C
346°F		549°F		898°F		1067°F
← Gasoline →				← Motor Oils/ Lube Oils/ Grease →		
← Diesel/ Jet Fuels →						

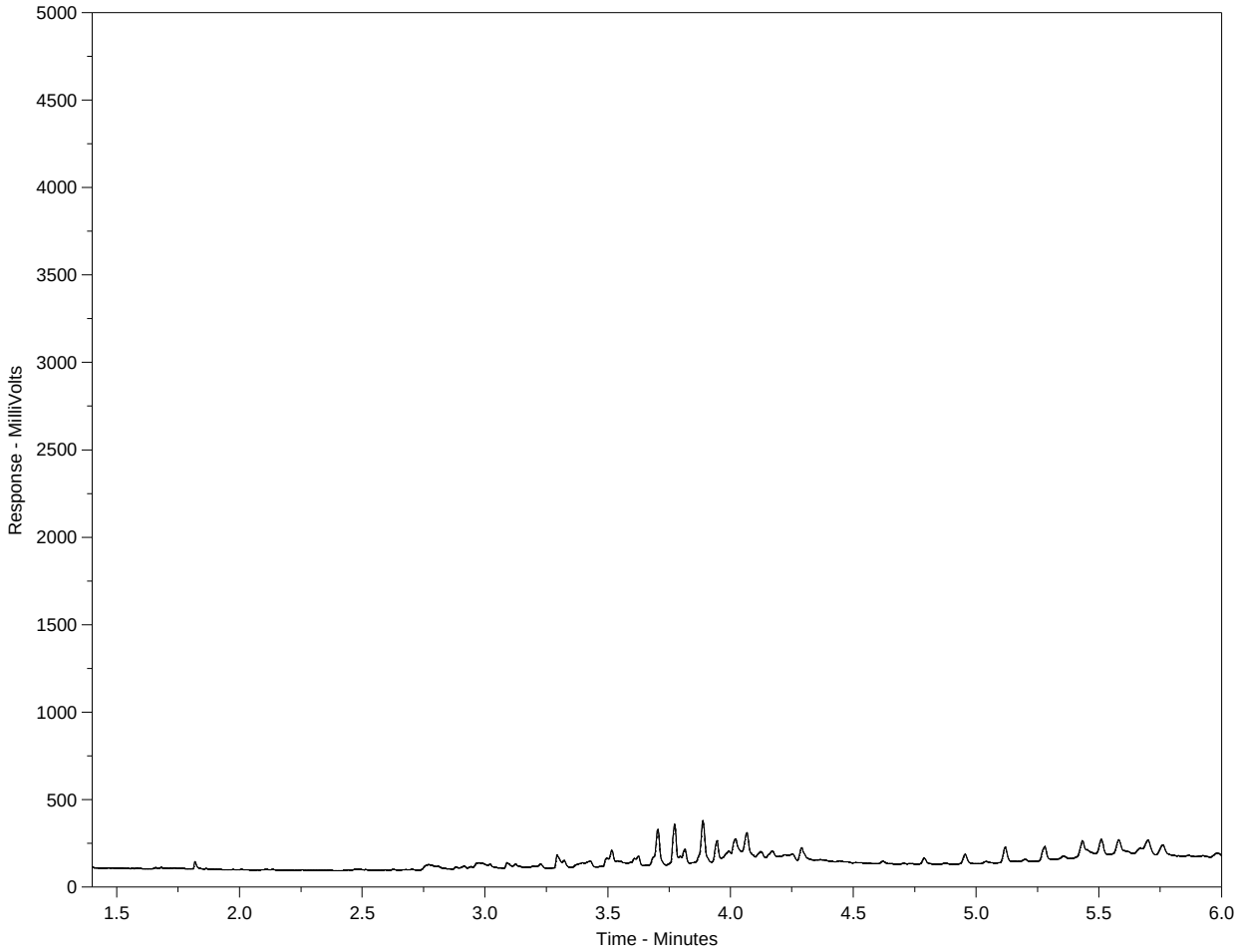
The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

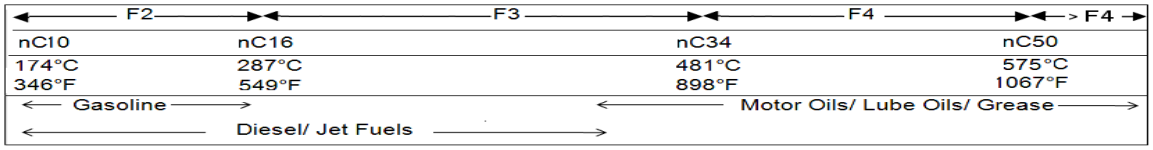
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
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Hydrocarbon Distribution Report

ALS Sample ID: L2487835-22
Client ID: EX-06-65





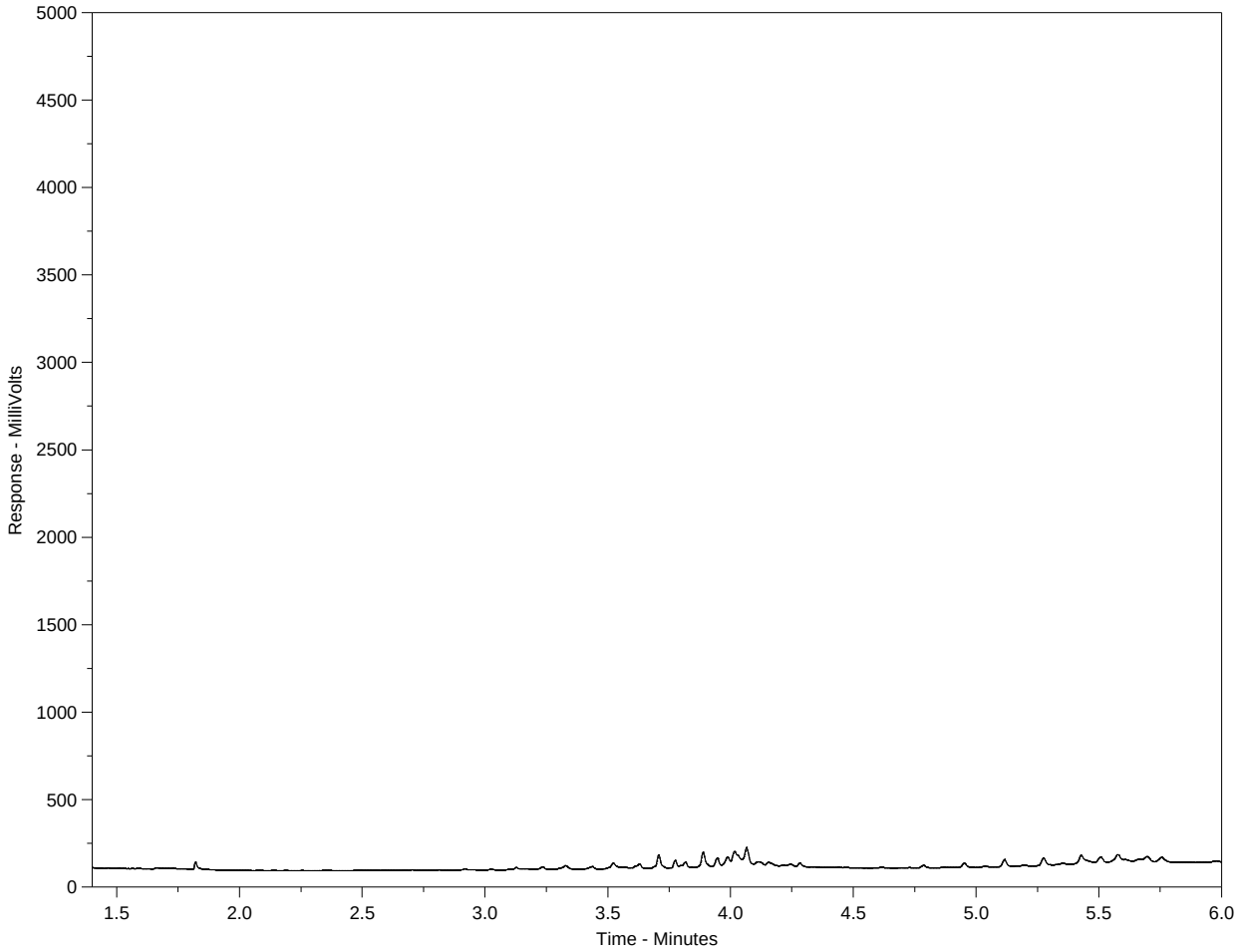
The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

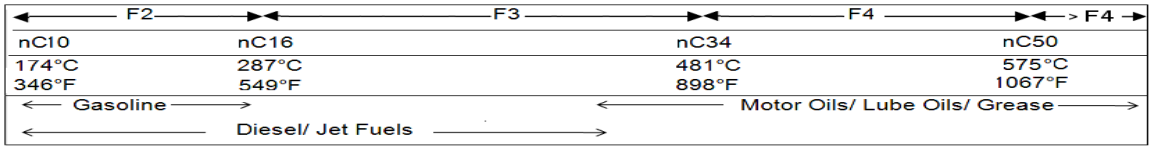
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
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Hydrocarbon Distribution Report

ALS Sample ID: L2487835-23
Client ID: EX-06-72





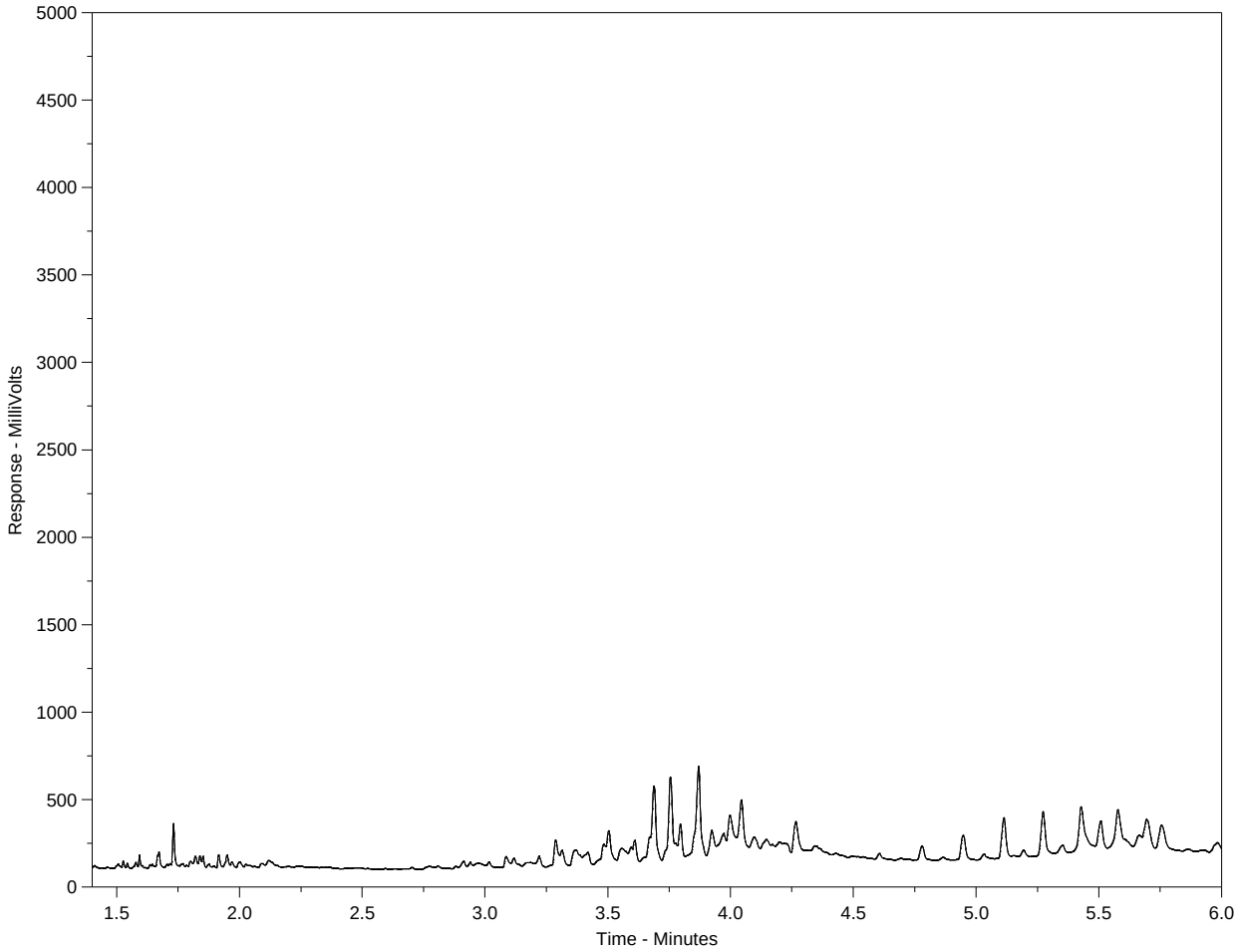
The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

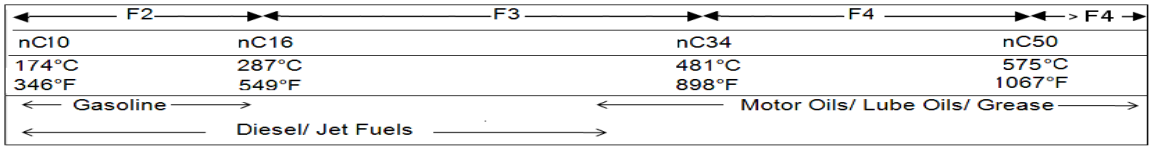
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2487835-24
Client ID: EX-06-74





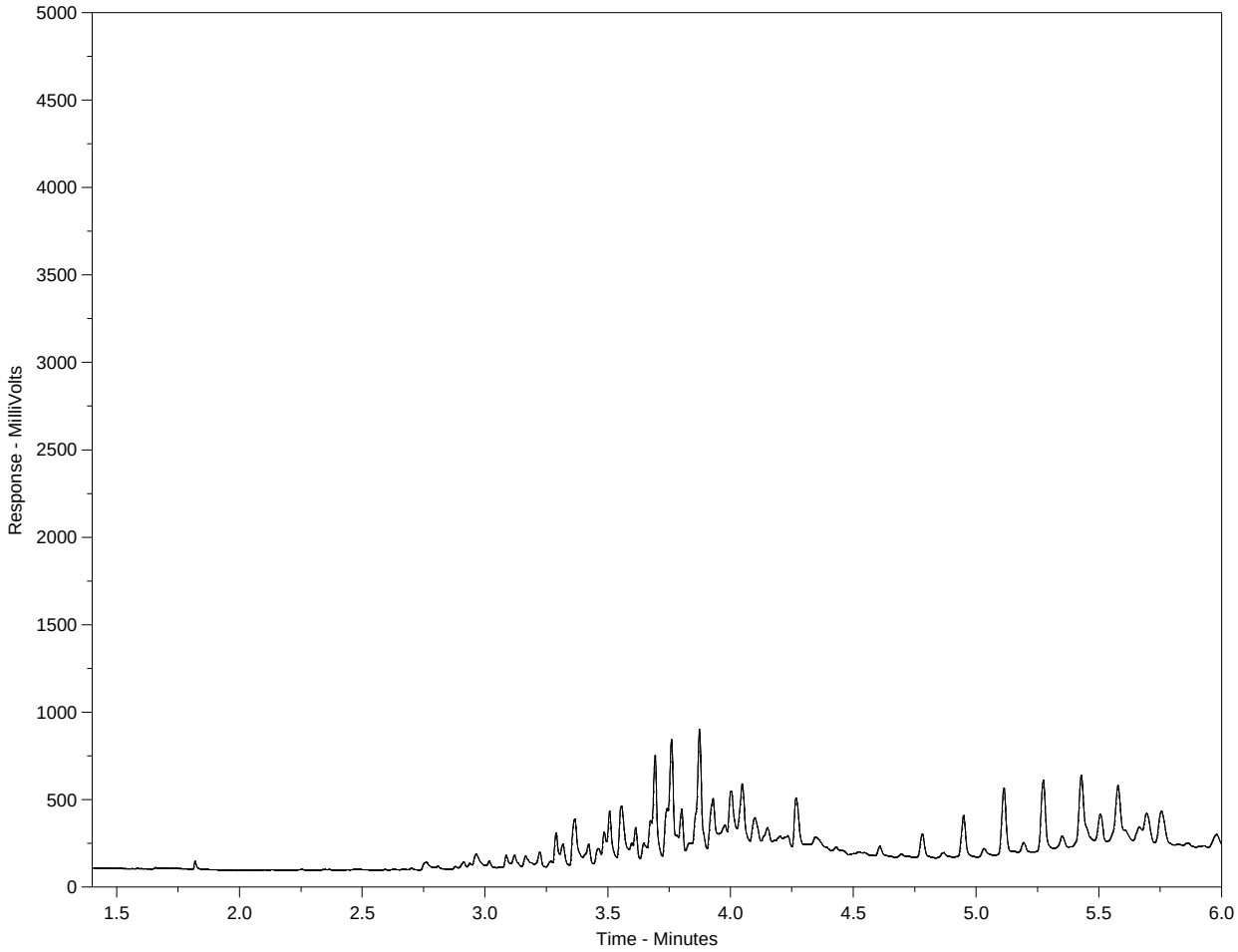
The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

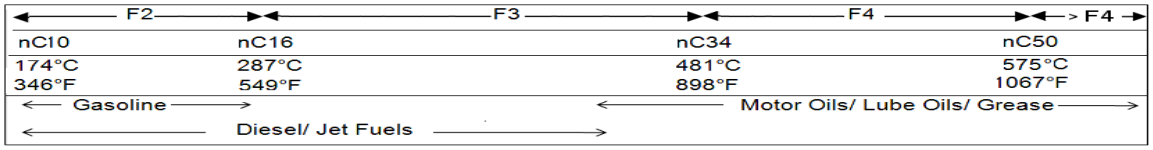
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2487835-25
Client ID: EX-06-78





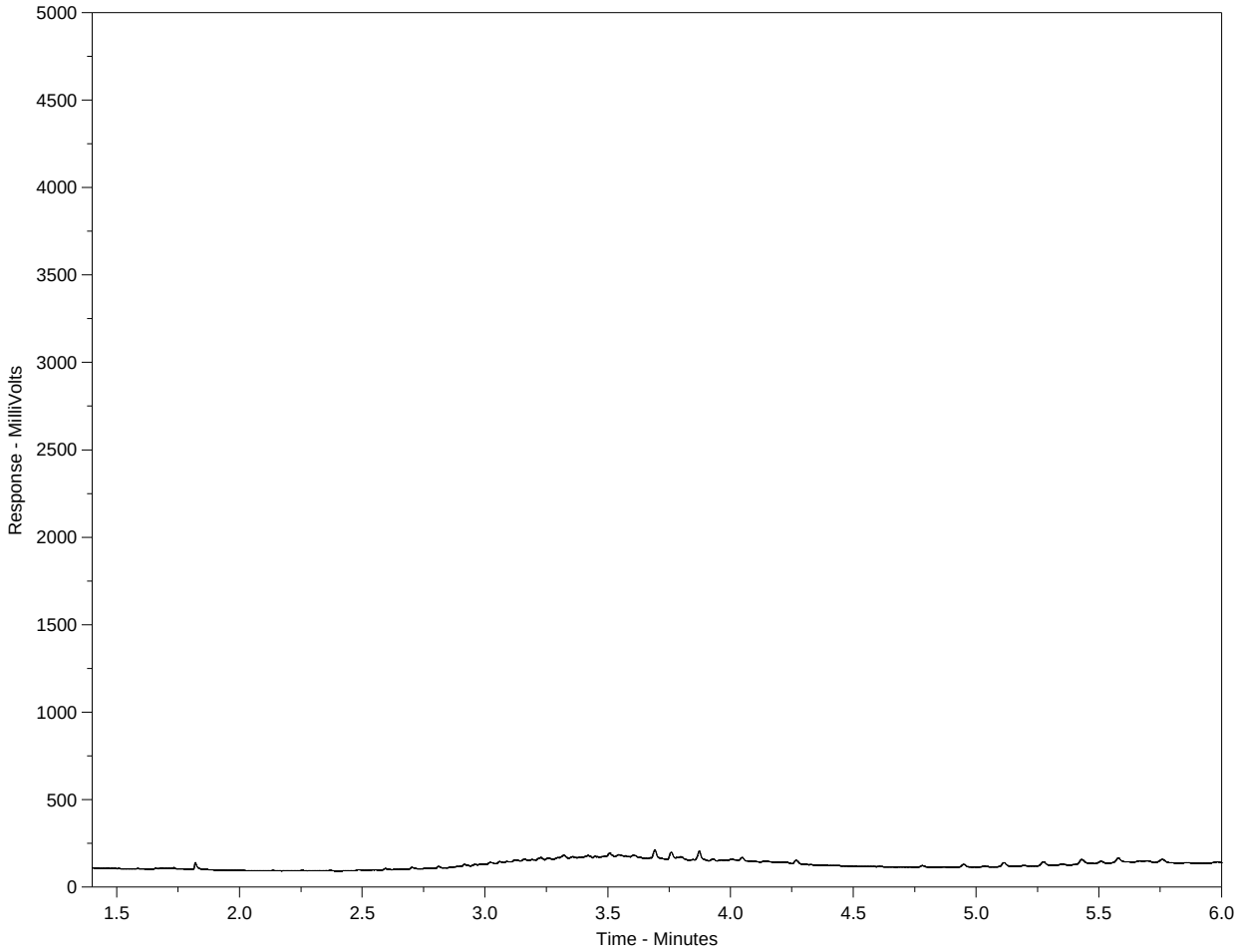
The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

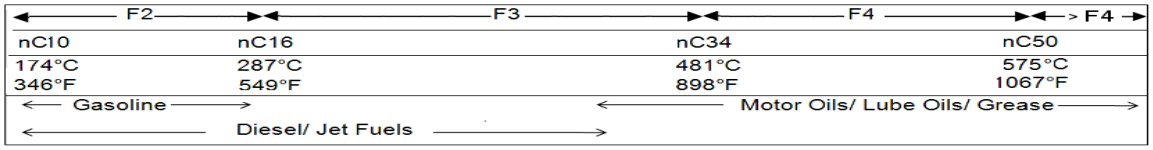
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2487835-26
Client ID: EX-06-79





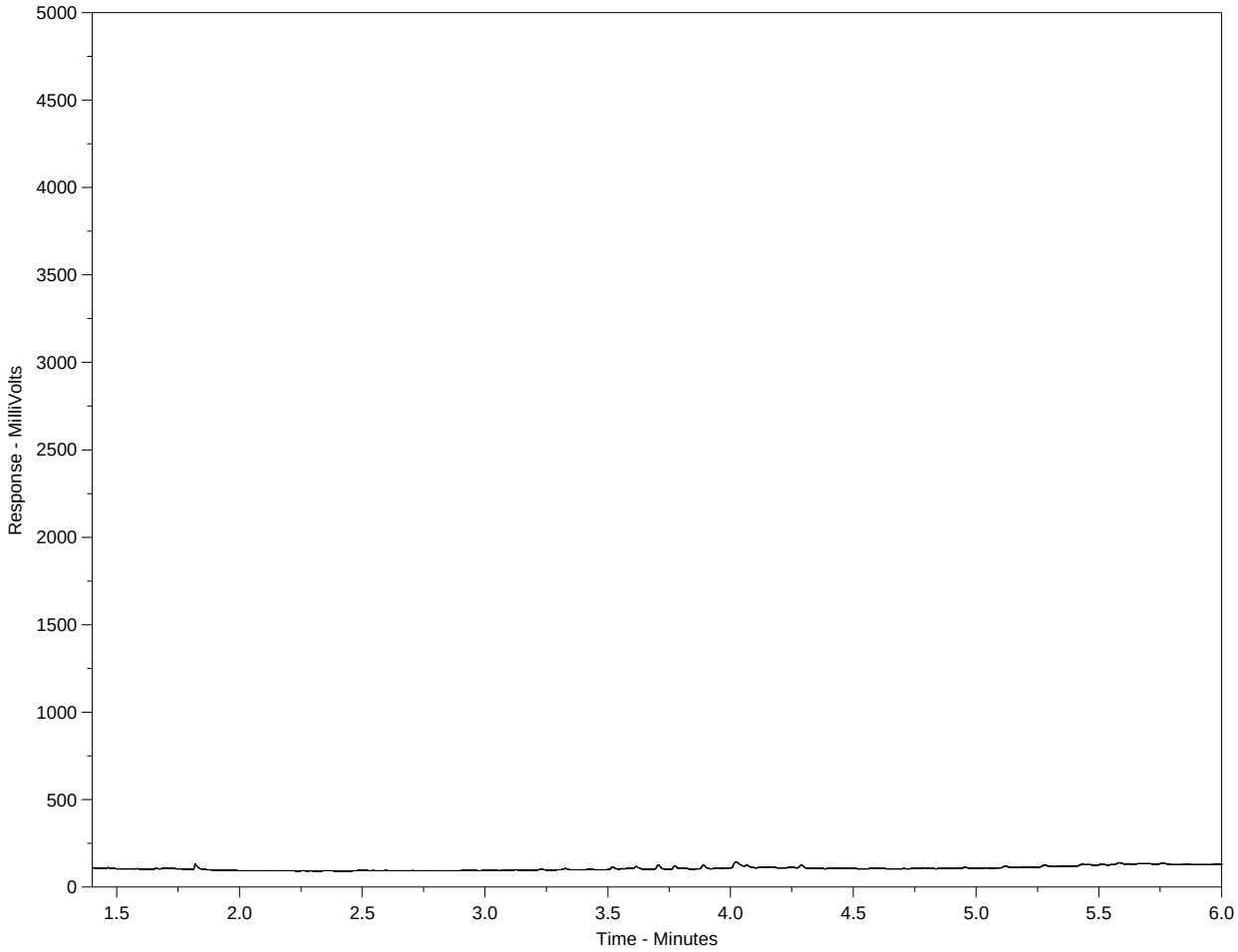
The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

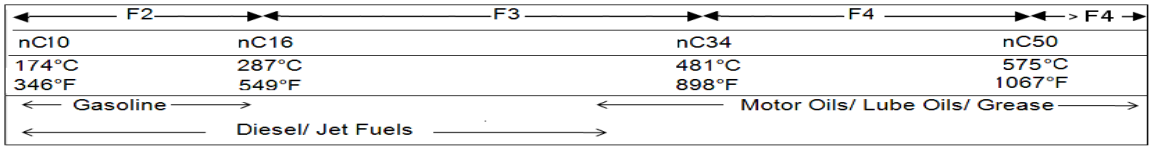
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2487835-27
Client ID: EX-06-80





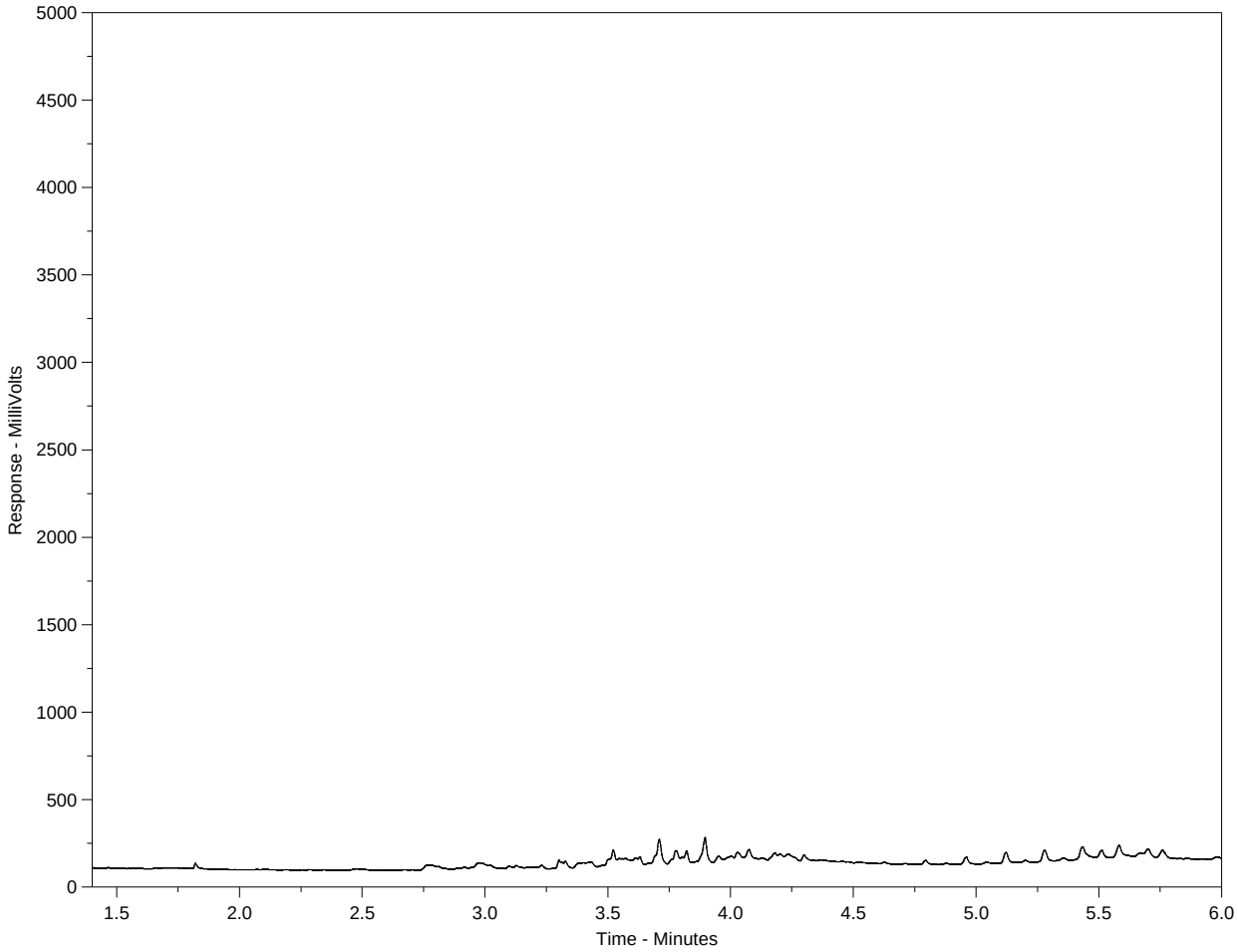
The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

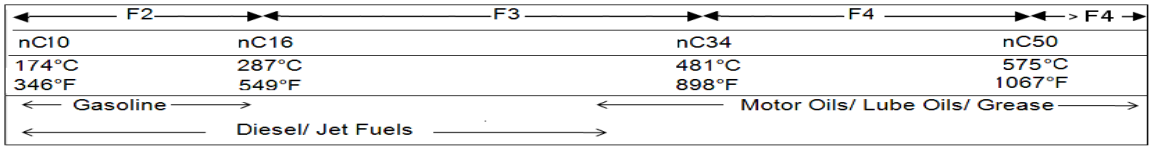
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2487835-28
Client ID: EX-06-83





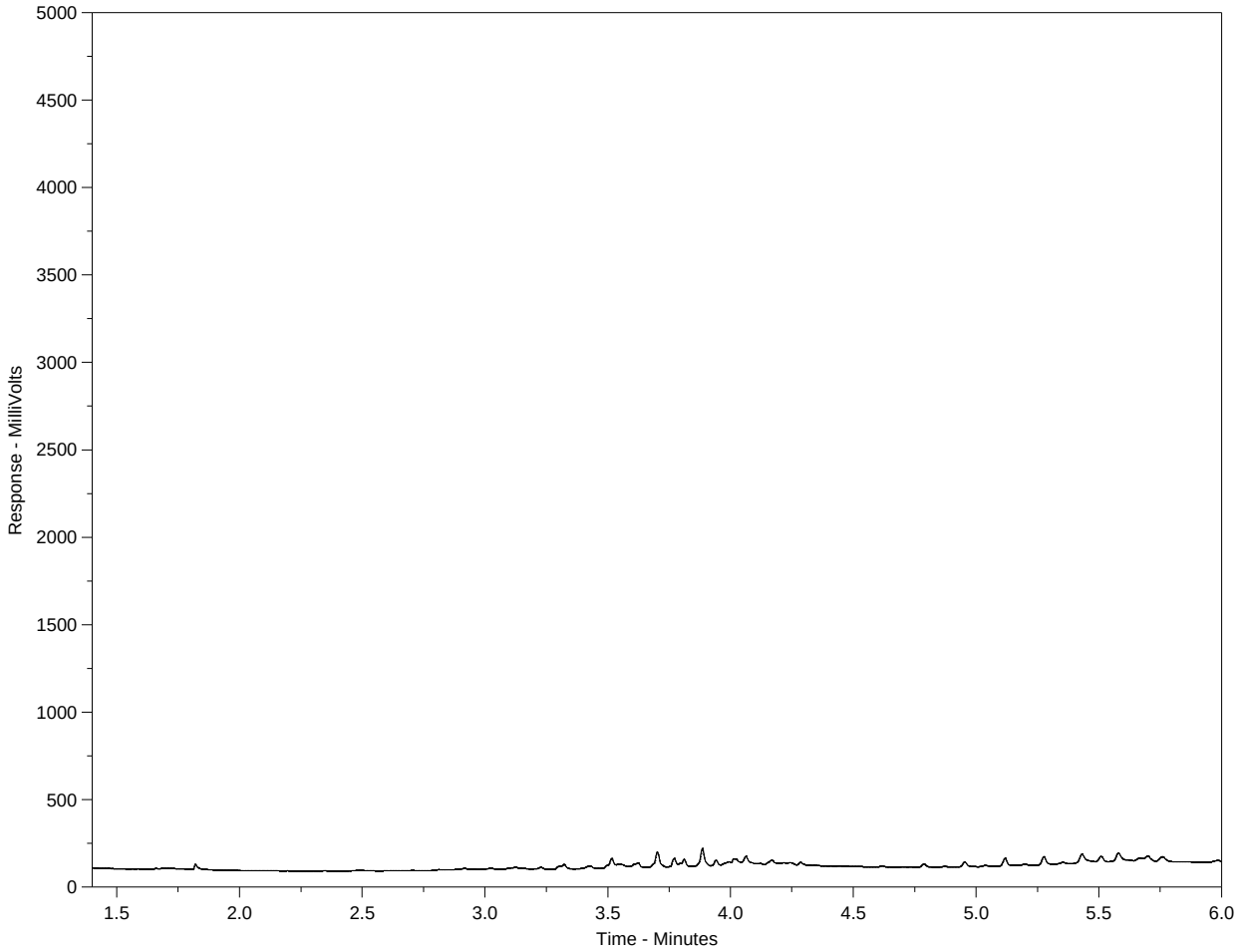
The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

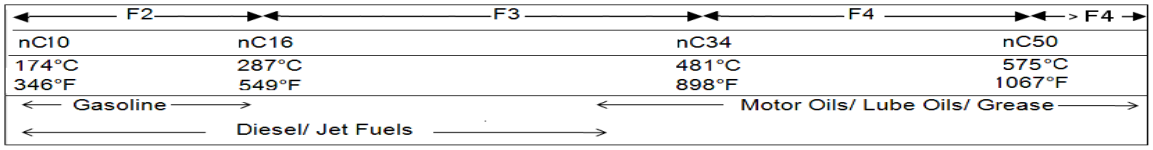
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2487835-29
Client ID: EX-06-86





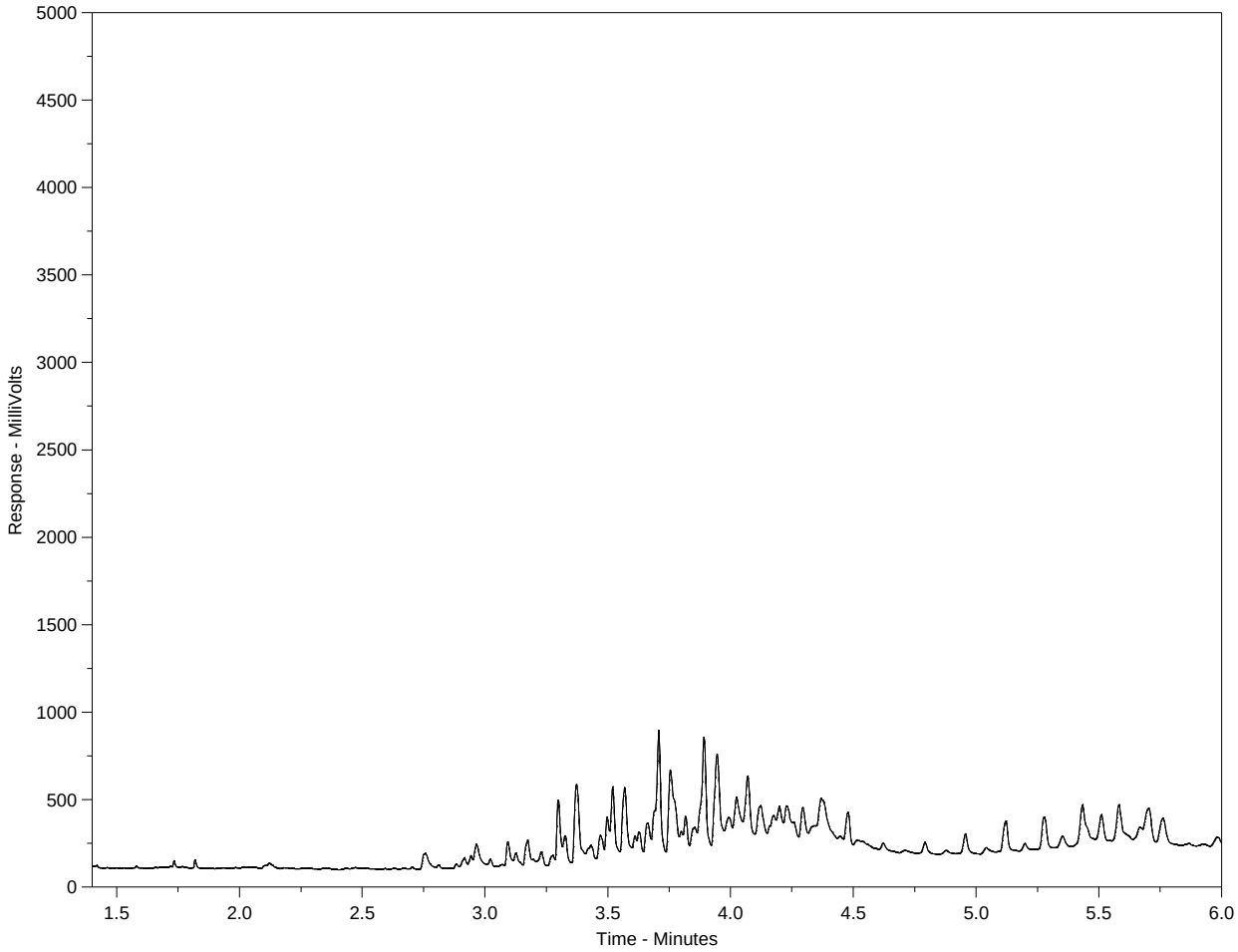
The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

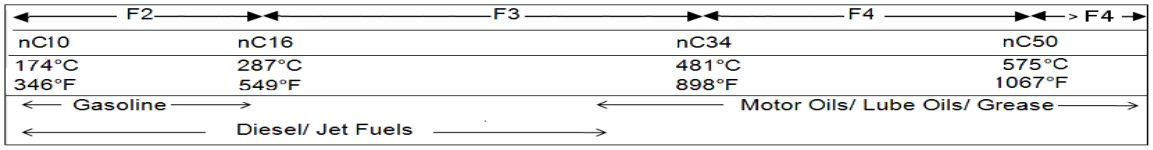
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
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Hydrocarbon Distribution Report

ALS Sample ID: L2487835-30
Client ID: EX-06-88





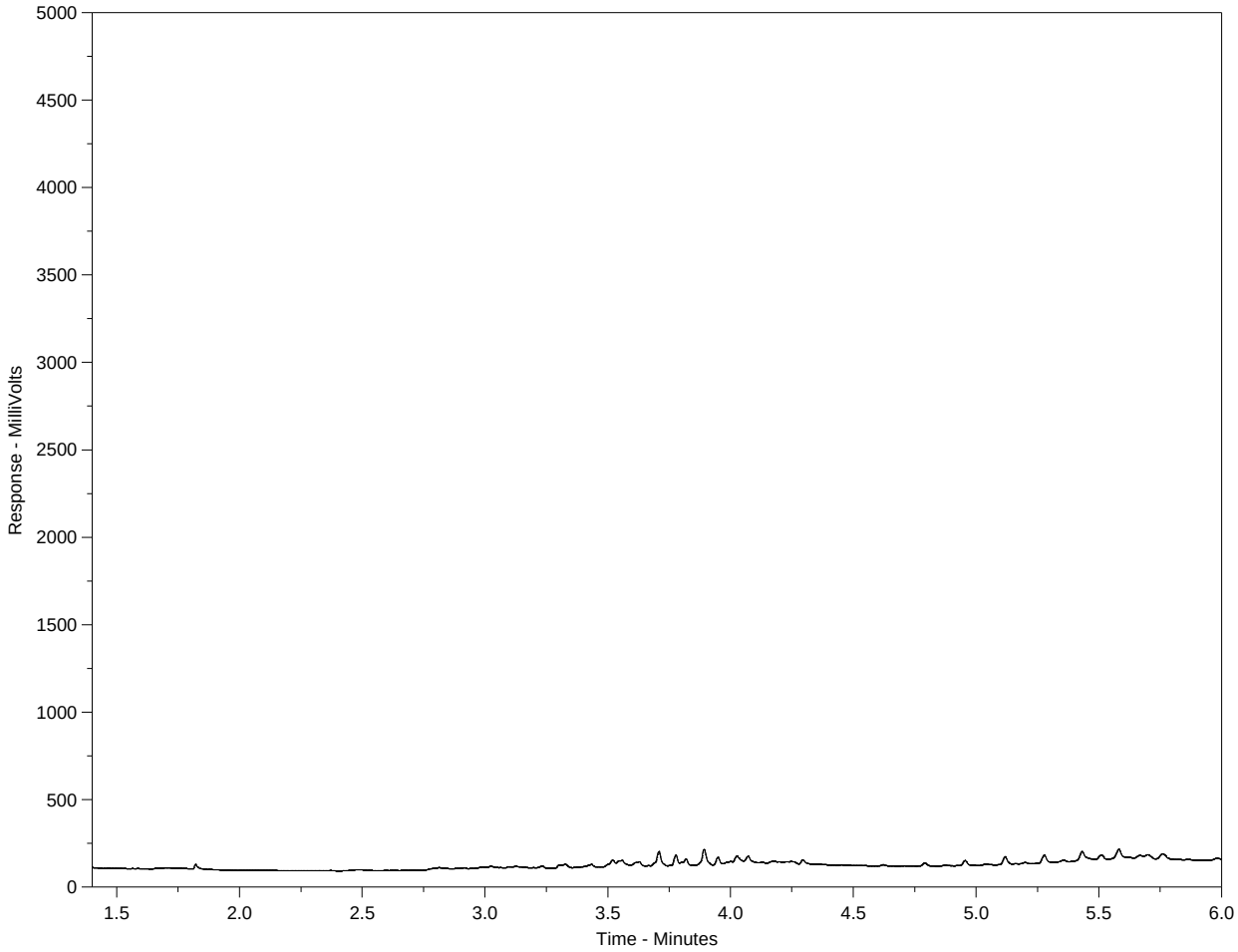
The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

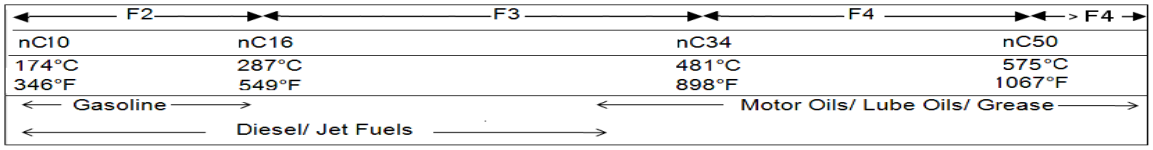
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2487835-31
Client ID: EX-06-91





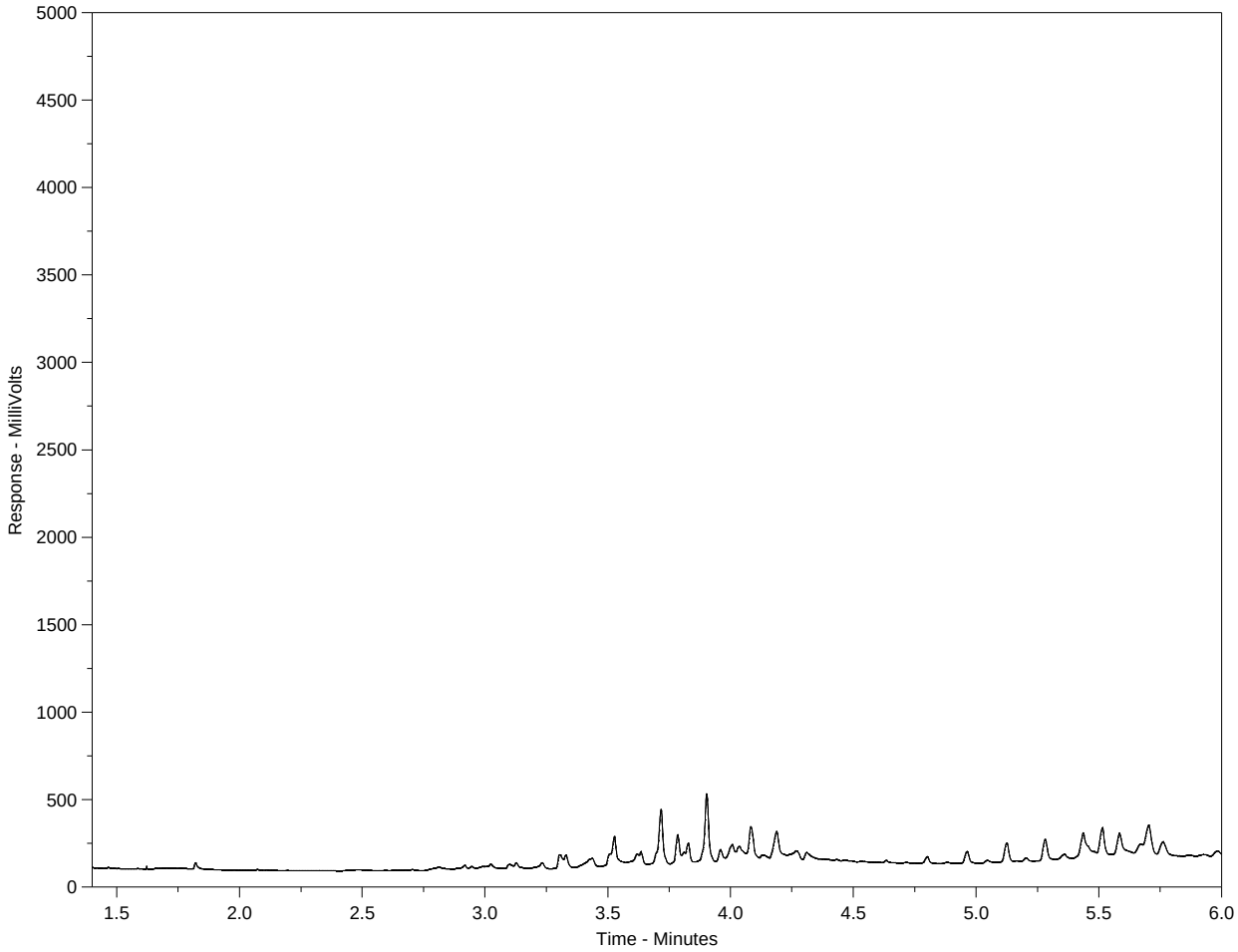
The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

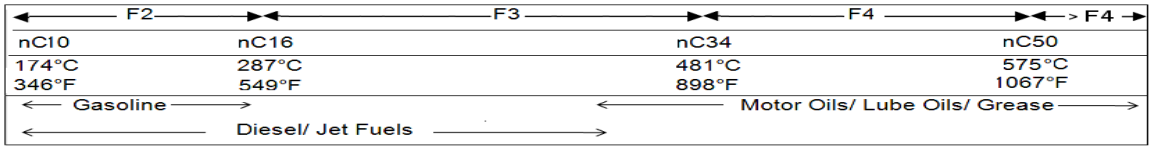
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2487835-32
Client ID: EX-06-93





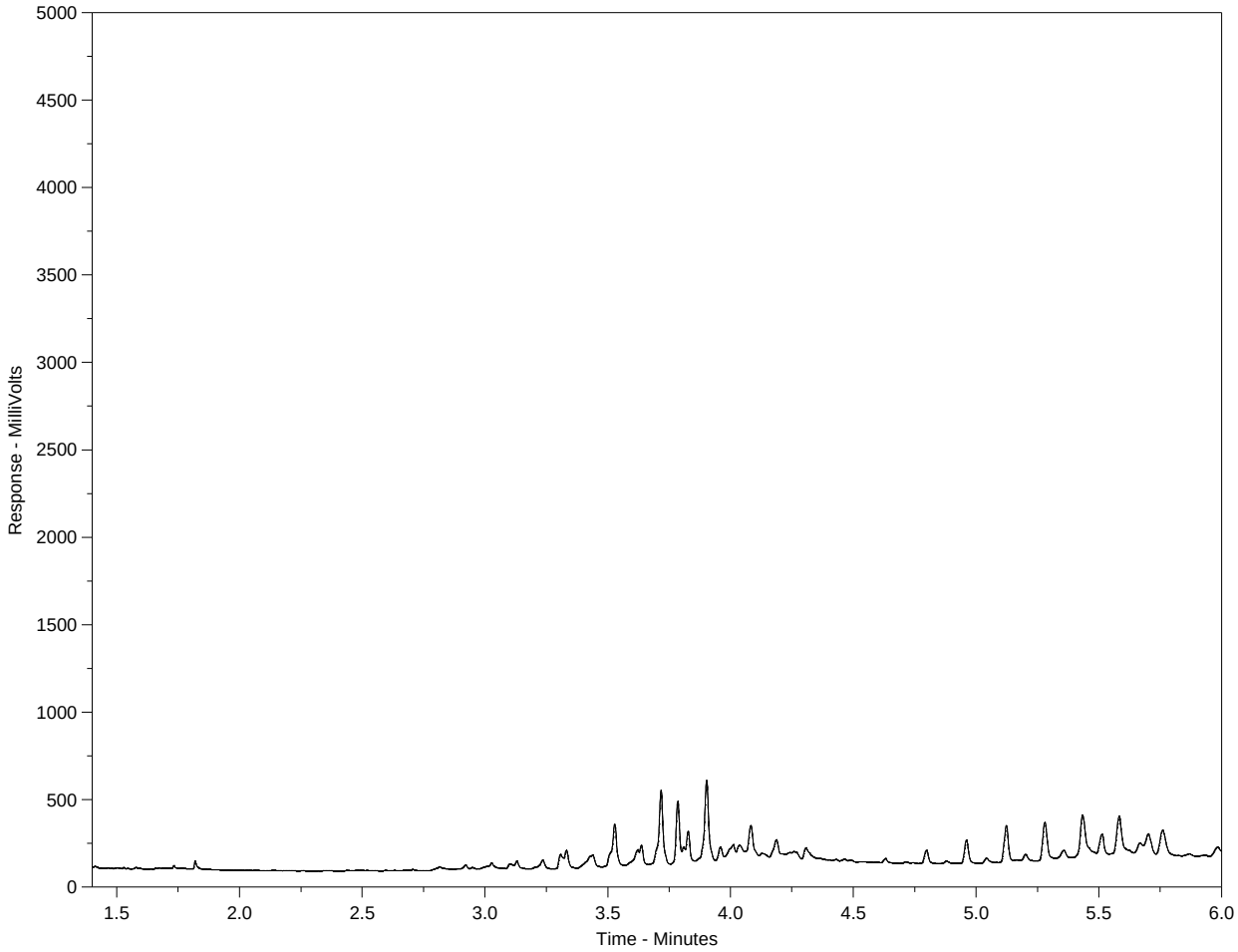
The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

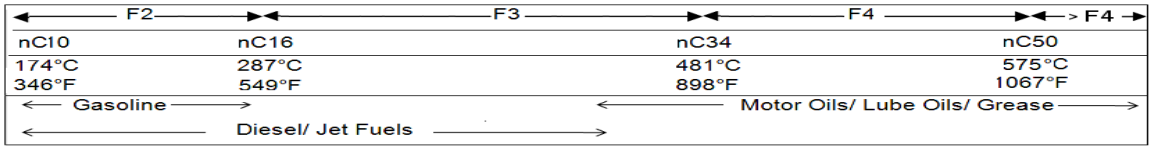
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2487835-33
Client ID: EX-06-94





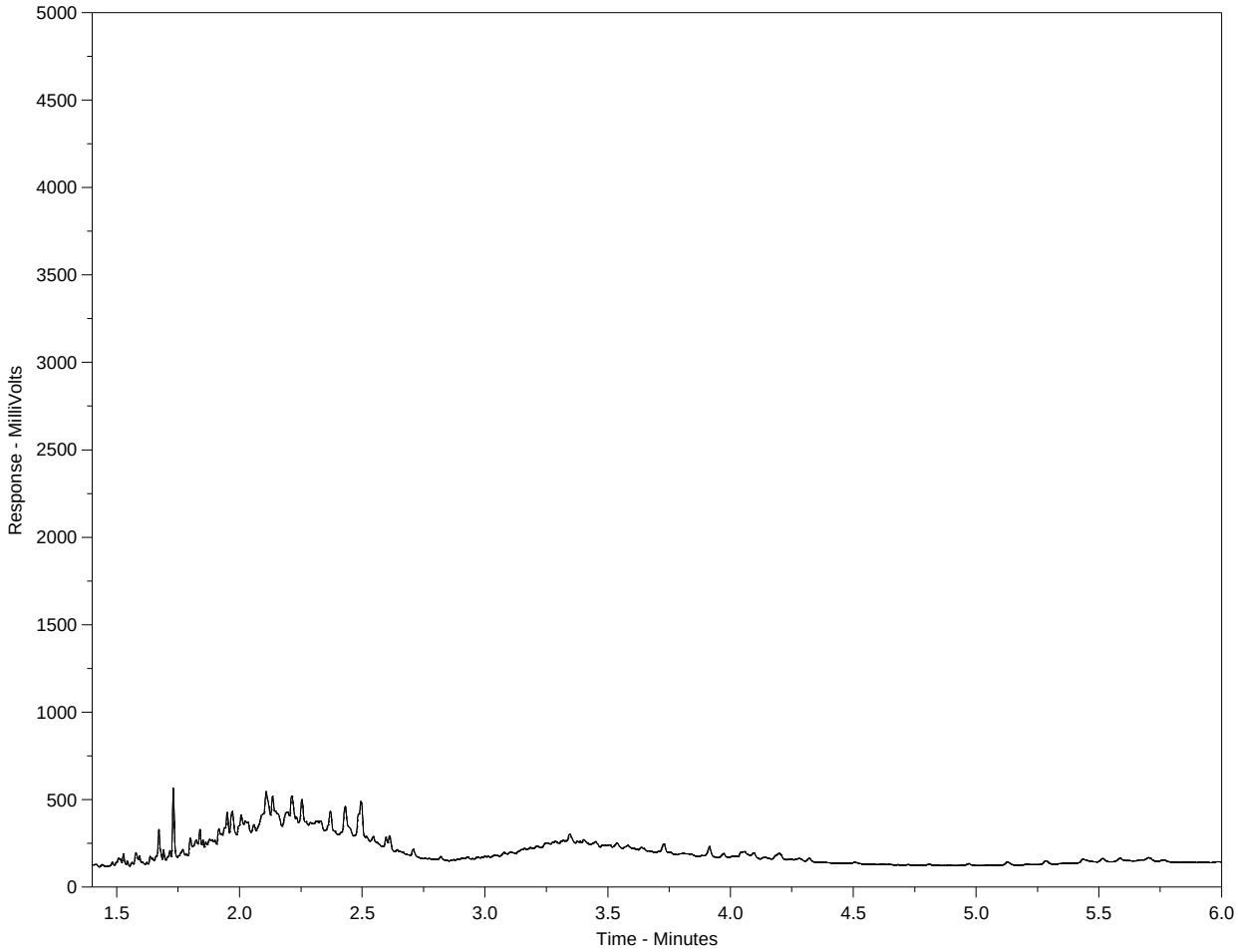
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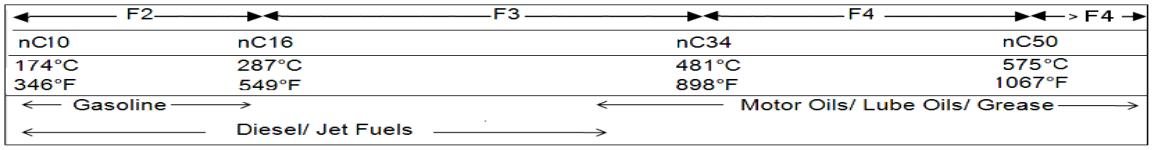
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2487835-34
Client ID: EX-07-04





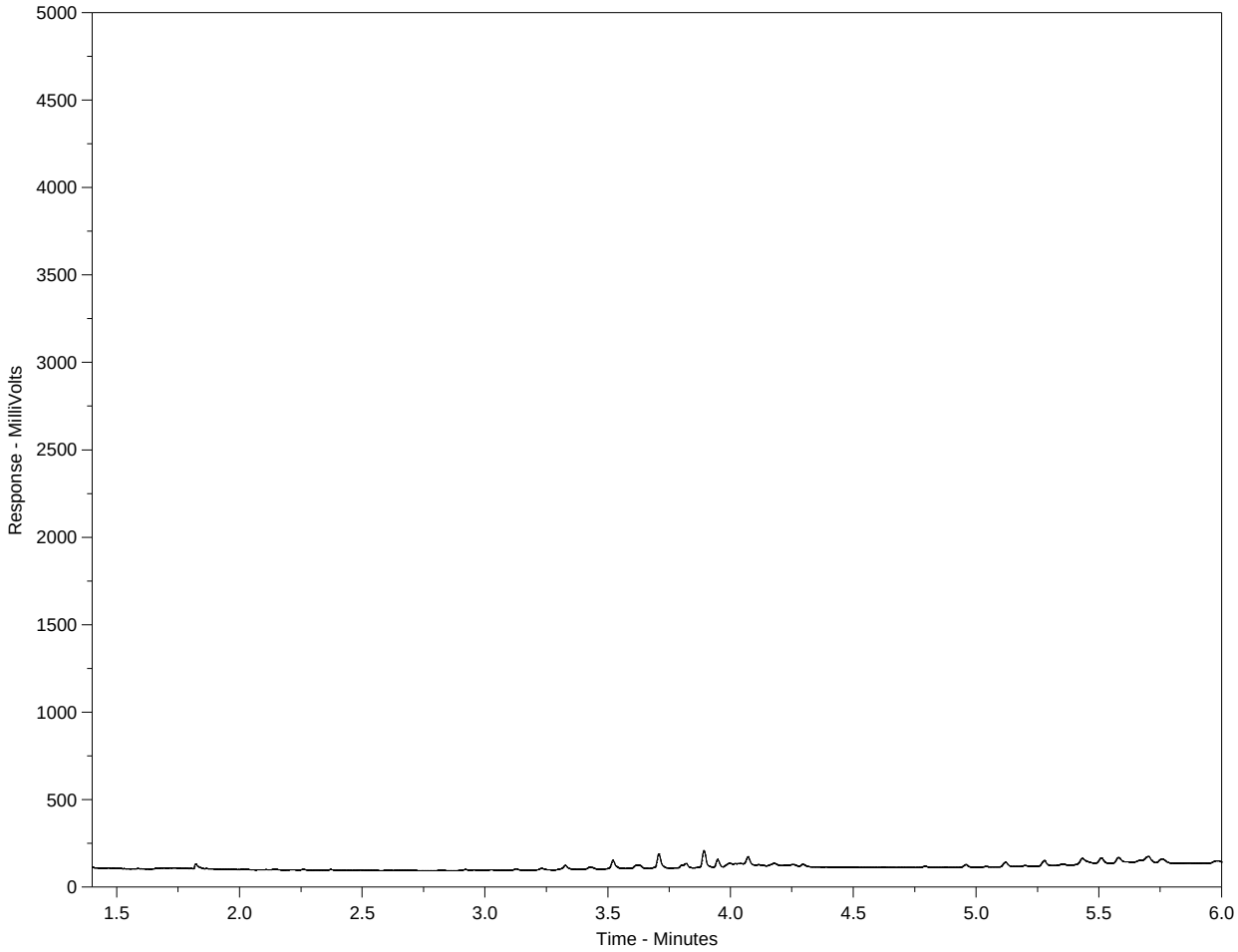
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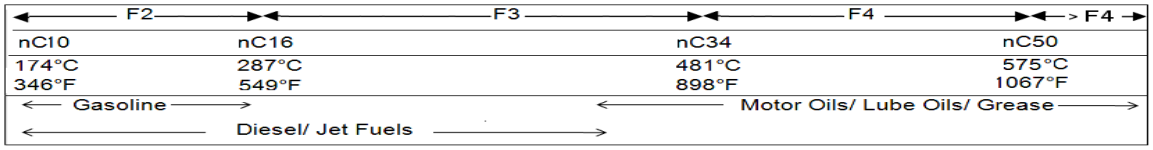
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2487835-35
Client ID: EX-08-02





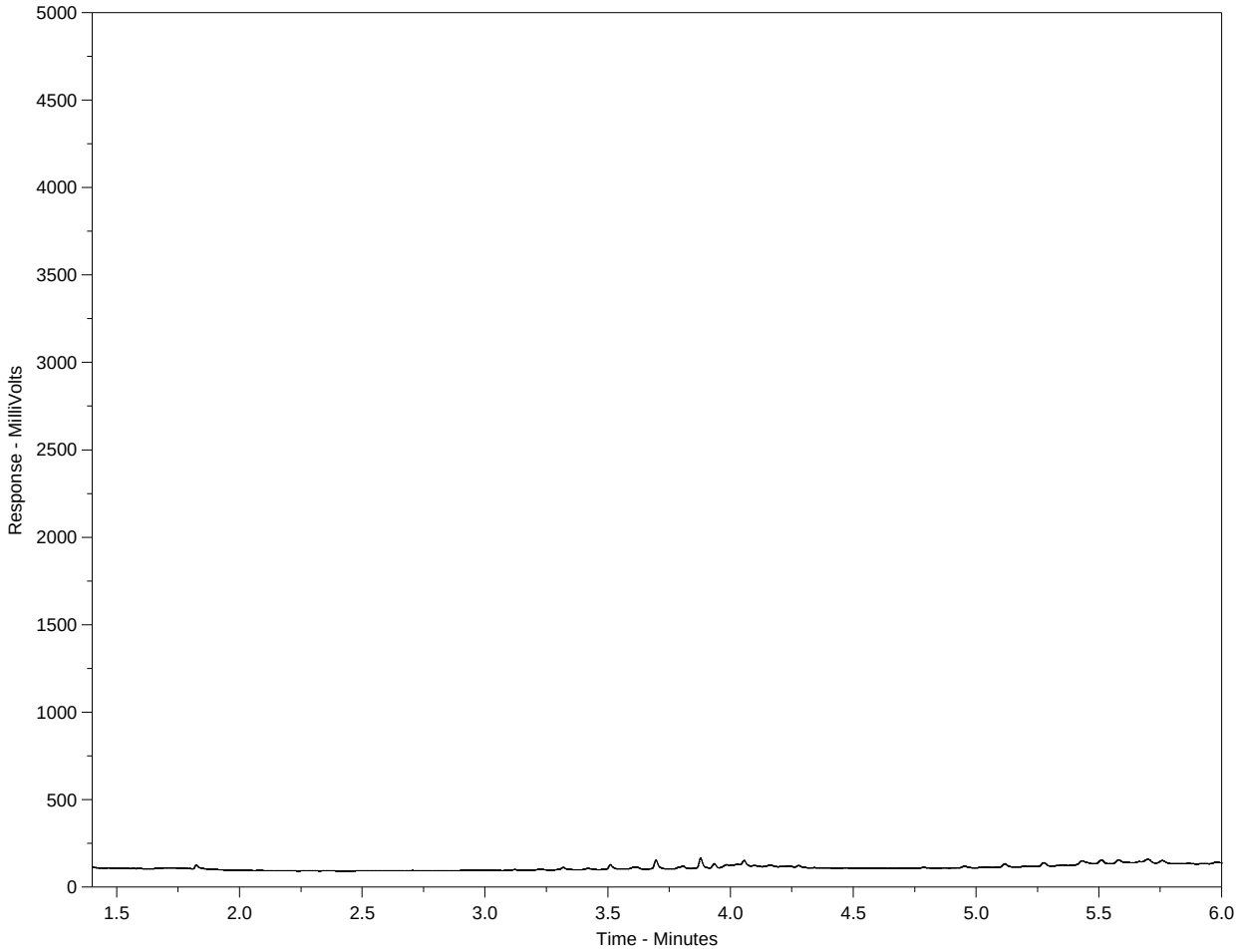
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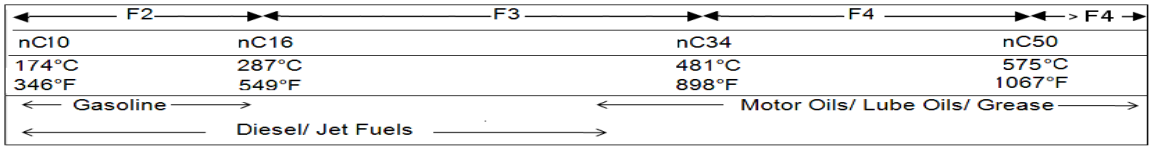
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2487835-36
Client ID: EX-08-06





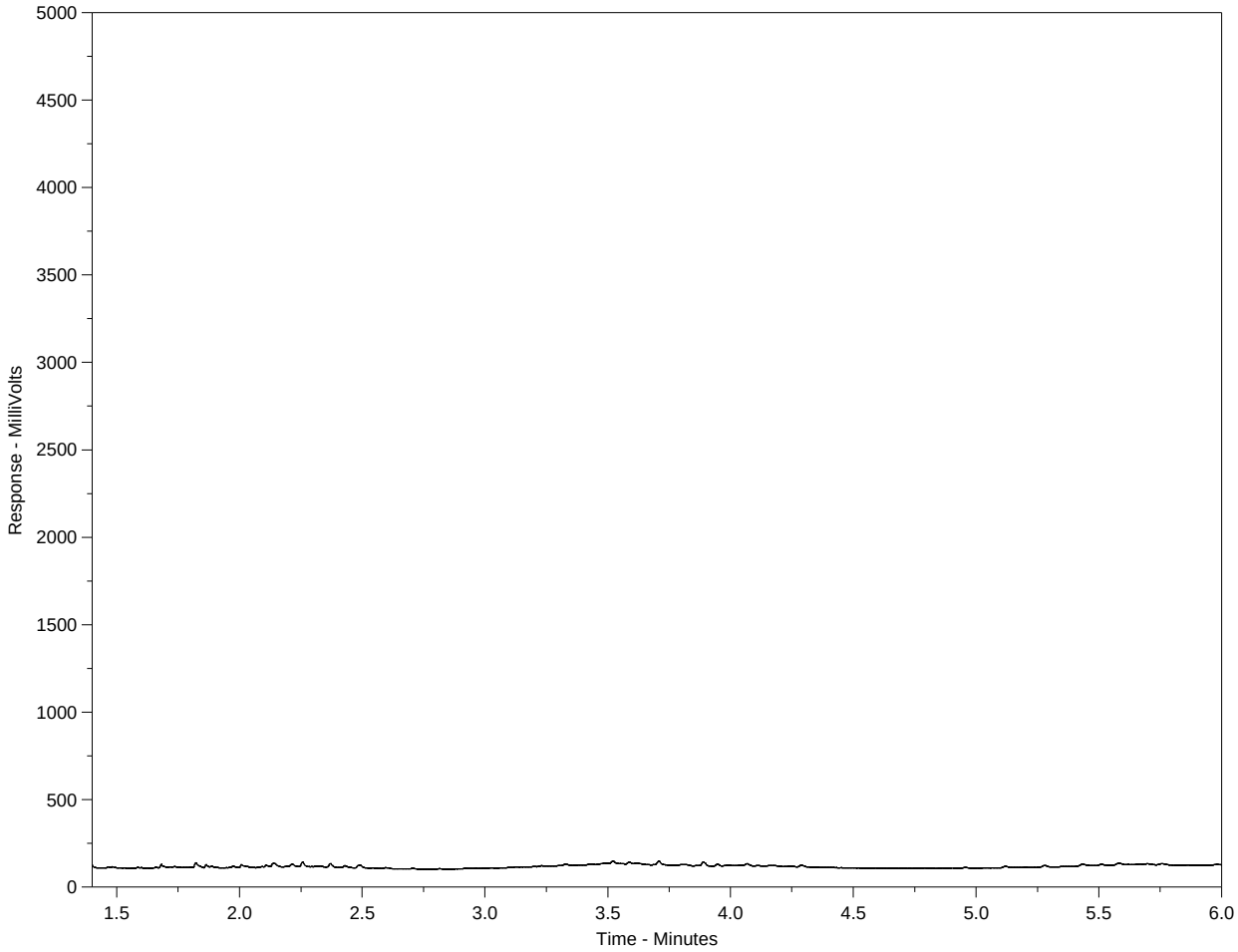
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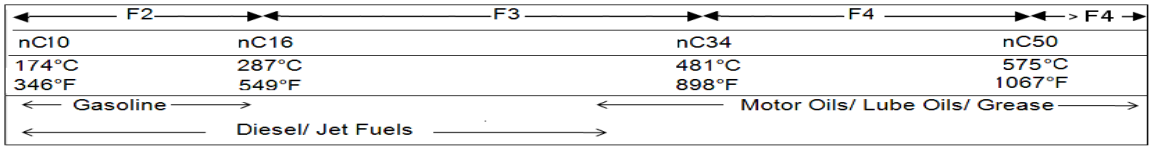
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2487835-37
Client ID: EX-08-09





The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number:

Page 1 of 4

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report ☑ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax k.lewis@mandalayresources.com
Email 2 sfiddler@golder.com
Email 3 jmusijowski@golder.com

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax
Email 2

Project Information

ALS Account # / Quote #: Q80711
Job #: 19136158
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only): L2487835
ALS Contact: Oliver Gregg
Sampler: J. Rogers

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐
EMERGENCY: 1 Business day [E - 100%] ☑ | Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	EX-06-06	02/08/20		Soil	3	✓		
	EX-06-20	03/08/20			3	✓		
	EX-06-21	08/08/20			3	✓		
	EX-06-22	08/08/20			3	✓		
	EX-06-23	05/08/20			3	✓		
	EX-06-24	↓			3	✓		
	EX-06-25	↓			3	✓		
	EX-06-26	08/08/20			3	✓		
	EX-06-27	08/08/20			3	✓		
	EX-06-30	06/08/20			3	✓		
	EX-06-35	08/08/20			3	✓		
	EX-06-36	06/08/20		↓	3	✓		

L2487835-COFC

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human consumption/ use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Jeff Rodgers	Date: 12/08/20	Time: 10:00	Received by: MA	Date: Aug 12/20	Time: 8:45	Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number:

Page 2 of 4

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report ☑ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax	k.lewis@mandalayresources.com
Email 2	sfiddler@golder.com
Email 3	jmusijowski@golder.com

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax	
Email 2	

Project Information

ALS Account # / Quote #:	Q80711
Job #:	19136158
PO / AFE:	
LSD:	

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (lab use only): L2487835 **ALS Contact:** Oliver Gregg **Sampler:** J. Rogers

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☑ | Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	EX-06-37	08/08/20		Soil	3	✓		
	EX-06-42	11			3	✓		
	EX-06-43	06/08/20			3	✓		
	EX-06-45	08/08/20			3	✓		
	EX-06-49	06/08/20			3	✓		
	EX-06-54	08/08/20			3	✓		
	EX-06-57	↓			3	✓		
	EX-06-59	↓			3	✓		
	EX-06-60	07/08/20			3	✓		
	EX-06-65	07/08/20			3	✓		
	EX-06-72	09/08/20			3	✓		
	EX-06-74	09/08/20		↓	3	✓		

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human consumption/ use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			

SHIPMENT RELEASE (client use)

Released by:	Date:	Time:
Jeff Rogers	12/08/20	10:00

INITIAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:
MA	Aug 12/20	2:45

FINAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number:

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report ☑ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax: k.lewis@mandalayresources.com
Email 2: sfiddler@golder.com
Email 3: jmusijowski@golder.com

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax:
Email 2:

Project Information

ALS Account # / Quote #: Q80711
Job #: 19136158
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only): L2487835
ALS Contact: Oliver Gregg
Sampler: J. Rogers

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

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Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	VOC's	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	EX-06-78	09/08/20		Soil	3	✓			
	EX-06-79	09/08/20			3	✓			
	EX-06-80	10/08/20			3	✓			
	EX-06-83	08/08/20			3	✓			
	EX-06-86	08/08/20			3	✓			
	EX-06-88	10/08/20			3	✓			
	EX-06-91	09/08/20			3	✓			
	EX-06-93	10/08/20			3	✓			
	EX-06-94	10/08/20			3	✓			
	EX-07-04	09/08/20			3	✓	✓		
	EX-08-02	10/08/20			3	✓			
	EX-08-06	10/08/20			3	✓			

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO
Are samples for human consumption/ use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Jeff Rogers	Date: 12/08/20	Time: 10:00	Received by: MA	Date: Aug 12/20	Time: 2:45	Received by:	Date:	Time:

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Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
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City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report ☑ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax k.lewis@mandalayresources.com
Email 2 sfiddler@golder.com
Email 3 jmusijowski@golder.com

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax
Email 2

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Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #: Q80711
Job #: 1913658
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only): L2487835
ALS Contact: Oliver Gregg
Sampler: J. Rogers

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	EX-08-09	10/08/20		Soil	3	✓		

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO
Are samples for human consumption/ use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			

SHIPMENT RELEASE (client use)

Released by:	Date:	Time:
Jeff Rogers	12/08/20	10:00

INITIAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:
MA	Aug 12/20	2:45

FINAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:

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1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

Dear Sir/Madam,

Please find enclosed our Purchase Order No. 5/08/SC dated 10.08.2020 for the supply of Electrical Switchgear.

Kindly confirm receipt and delivery schedule.

Thanking you,

Yours faithfully,

For Sharma Electricals

Authorised Signatory

GOLDER ASSOCIATES LTD
ATTN: Steven Fiddler
16820 107 Ave NW
Edmonton AB T5P 4C3

Date Received: 20-AUG-20
Report Date: 17-SEP-20 14:09 (MT)
Version: FINAL REV. 4

Client Phone: 780-483-3499

Certificate of Analysis

Lab Work Order #: L2491764

Project P.O. #: NOT SUBMITTED
Job Reference: 19136158
C of C Numbers:
Legal Site Desc:

Comments: ADDITIONAL 09-SEP-20 11:23

Harman Bhullar
Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2491764-1 EX-10-01							
Sampled By: R.Boyce on 16-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	16-AUG-20	22-AUG-20	R5183656
Toluene	0.530		0.050	mg/kg	16-AUG-20	22-AUG-20	R5183656
Ethylbenzene	<0.010		0.010	mg/kg	16-AUG-20	22-AUG-20	R5183656
m+p-Xylene	<0.050		0.050	mg/kg	16-AUG-20	22-AUG-20	R5183656
o-Xylene	<0.050		0.050	mg/kg	16-AUG-20	22-AUG-20	R5183656
Xylenes	<0.10		0.10	mg/kg	16-AUG-20	22-AUG-20	R5183656
Surrogate: 1,4-Difluorobenzene (SS)	90.0		70-130	%	16-AUG-20	22-AUG-20	R5183656
Surrogate: 4-Bromofluorobenzene (SS)	73.7		70-130	%	16-AUG-20	22-AUG-20	R5183656
Surrogate: 3,4-Dichlorotoluene (SS)	94.8		70-130	%	16-AUG-20	22-AUG-20	R5183656
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	88.3		70-130	%	21-AUG-20	21-AUG-20	R5196996
Chrom. to baseline at nC50	YES				21-AUG-20	21-AUG-20	R5196996
Prep/Analysis Dates					21-AUG-20	21-AUG-20	R5196996
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		17-SEP-20	
F1-BTEX	<10		10	mg/kg		17-SEP-20	
F2 (C10-C16)	<20		20	mg/kg		17-SEP-20	
F3 (C16-C34)	<20		20	mg/kg		17-SEP-20	
F4 (C34-C50)	<20		20	mg/kg		17-SEP-20	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		17-SEP-20	
Miscellaneous Parameters							
% Moisture	12.4		0.25	%		21-AUG-20	R5196418
Biogenic Toluene in Soil							
Styrene	<0.050		0.050	mg/kg	14-SEP-20	16-SEP-20	R5224401
alpha-Pinene	<0.050		0.050	mg/kg	14-SEP-20	16-SEP-20	R5224401
m-Cymene	<0.050		0.050	mg/kg	14-SEP-20	16-SEP-20	R5224401
p-Cymene	<0.050		0.050	mg/kg	14-SEP-20	16-SEP-20	R5224401
o-Cymene	<0.050		0.050	mg/kg	14-SEP-20	16-SEP-20	R5224401
Benzaldehyde	<0.050		0.050	mg/kg	14-SEP-20	16-SEP-20	R5224401
Toluene Ratio	1.00				14-SEP-20	16-SEP-20	R5224401
Cymene Ratio	0.00				14-SEP-20	16-SEP-20	R5224401
Surrogate: 1,4-Difluorobenzene	84.7		70-130	%	14-SEP-20	16-SEP-20	R5224401
Surrogate: 4-Bromofluorobenzene	78.8		70-130	%	14-SEP-20	16-SEP-20	R5224401
L2491764-2 EX-10-04							
Sampled By: R.Boyce on 16-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	16-AUG-20	22-AUG-20	R5183656
Toluene	0.701		0.050	mg/kg	16-AUG-20	22-AUG-20	R5183656
Ethylbenzene	<0.010		0.010	mg/kg	16-AUG-20	22-AUG-20	R5183656
m+p-Xylene	<0.050		0.050	mg/kg	16-AUG-20	22-AUG-20	R5183656
o-Xylene	<0.050		0.050	mg/kg	16-AUG-20	22-AUG-20	R5183656
Xylenes	<0.10		0.10	mg/kg	16-AUG-20	22-AUG-20	R5183656
Surrogate: 1,4-Difluorobenzene (SS)	94.0		70-130	%	16-AUG-20	22-AUG-20	R5183656
Surrogate: 4-Bromofluorobenzene (SS)	76.8		70-130	%	16-AUG-20	22-AUG-20	R5183656
Surrogate: 3,4-Dichlorotoluene (SS)	101.6		70-130	%	16-AUG-20	22-AUG-20	R5183656
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	92.3		70-130	%	21-AUG-20	21-AUG-20	R5196996
Chrom. to baseline at nC50	YES				21-AUG-20	21-AUG-20	R5196996

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2491764-2 EX-10-04							
Sampled By: R.Boyce on 16-AUG-20							
Matrix: SOIL							
CCME Total Extractable Hydrocarbons							
Prep/Analysis Dates					21-AUG-20	21-AUG-20	R5196996
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		22-AUG-20	
F1-BTEX	<10		10	mg/kg		22-AUG-20	
F2 (C10-C16)	<20		20	mg/kg		22-AUG-20	
F3 (C16-C34)	<20		20	mg/kg		22-AUG-20	
F4 (C34-C50)	<20		20	mg/kg		22-AUG-20	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		22-AUG-20	
Miscellaneous Parameters							
% Moisture	12.4		0.25	%		21-AUG-20	R5196418
L2491764-3 EX-10-09							
Sampled By: R.Boyce on 16-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	16-AUG-20	22-AUG-20	R5183656
Toluene	0.214		0.050	mg/kg	16-AUG-20	22-AUG-20	R5183656
Ethylbenzene	<0.010		0.010	mg/kg	16-AUG-20	22-AUG-20	R5183656
m+p-Xylene	<0.050		0.050	mg/kg	16-AUG-20	22-AUG-20	R5183656
o-Xylene	<0.050		0.050	mg/kg	16-AUG-20	22-AUG-20	R5183656
Xylenes	<0.10		0.10	mg/kg	16-AUG-20	22-AUG-20	R5183656
Surrogate: 1,4-Difluorobenzene (SS)	78.7		70-130	%	16-AUG-20	22-AUG-20	R5183656
Surrogate: 4-Bromofluorobenzene (SS)	70.2		70-130	%	16-AUG-20	22-AUG-20	R5183656
Surrogate: 3,4-Dichlorotoluene (SS)	86.9		70-130	%	16-AUG-20	22-AUG-20	R5183656
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	90.5		70-130	%	21-AUG-20	21-AUG-20	R5196996
Chrom. to baseline at nC50	YES				21-AUG-20	21-AUG-20	R5196996
Prep/Analysis Dates					21-AUG-20	21-AUG-20	R5196996
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		22-AUG-20	
F1-BTEX	<10		10	mg/kg		22-AUG-20	
F2 (C10-C16)	<20		20	mg/kg		22-AUG-20	
F3 (C16-C34)	<20		20	mg/kg		22-AUG-20	
F4 (C34-C50)	<20		20	mg/kg		22-AUG-20	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		22-AUG-20	
Miscellaneous Parameters							
% Moisture	15.5		0.25	%		21-AUG-20	R5196418
L2491764-4 EX-10-06							
Sampled By: R.Boyce on 16-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	16-AUG-20	22-AUG-20	R5183656
Toluene	0.249		0.050	mg/kg	16-AUG-20	22-AUG-20	R5183656
Ethylbenzene	<0.010		0.010	mg/kg	16-AUG-20	22-AUG-20	R5183656
m+p-Xylene	<0.050		0.050	mg/kg	16-AUG-20	22-AUG-20	R5183656
o-Xylene	<0.050		0.050	mg/kg	16-AUG-20	22-AUG-20	R5183656
Xylenes	<0.10		0.10	mg/kg	16-AUG-20	22-AUG-20	R5183656
Surrogate: 1,4-Difluorobenzene (SS)	71.4		70-130	%	16-AUG-20	22-AUG-20	R5183656
Surrogate: 4-Bromofluorobenzene (SS)	60.9	SOL:MI	70-130	%	16-AUG-20	22-AUG-20	R5183656
Surrogate: 3,4-Dichlorotoluene (SS)	74.0		70-130	%	16-AUG-20	22-AUG-20	R5183656

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2491764-4 EX-10-06							
Sampled By: R.Boyce on 16-AUG-20							
Matrix: SOIL							
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	91.3		70-130	%	21-AUG-20	21-AUG-20	R5196996
Chrom. to baseline at nC50	YES				21-AUG-20	21-AUG-20	R5196996
Prep/Analysis Dates					21-AUG-20	21-AUG-20	R5196996
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		17-SEP-20	
F1-BTEX	<10		10	mg/kg		17-SEP-20	
F2 (C10-C16)	<20		20	mg/kg		17-SEP-20	
F3 (C16-C34)	80		20	mg/kg		17-SEP-20	
F4 (C34-C50)	25		20	mg/kg		17-SEP-20	
Total Hydrocarbons (C6-C50)	105		20	mg/kg		17-SEP-20	
Miscellaneous Parameters							
% Moisture	19.1		0.25	%		21-AUG-20	R5196418
Biogenic Toluene in Soil							
Styrene	<0.050		0.050	mg/kg	14-SEP-20	16-SEP-20	R5224401
alpha-Pinene	<0.050		0.050	mg/kg	14-SEP-20	16-SEP-20	R5224401
m-Cymene	<0.050		0.050	mg/kg	14-SEP-20	16-SEP-20	R5224401
p-Cymene	<0.050		0.050	mg/kg	14-SEP-20	16-SEP-20	R5224401
o-Cymene	<0.050		0.050	mg/kg	14-SEP-20	16-SEP-20	R5224401
Benzaldehyde	<0.050		0.050	mg/kg	14-SEP-20	16-SEP-20	R5224401
Toluene Ratio	1.00				14-SEP-20	16-SEP-20	R5224401
Cymene Ratio	0.00				14-SEP-20	16-SEP-20	R5224401
Surrogate: 1,4-Difluorobenzene	79.4		70-130	%	14-SEP-20	16-SEP-20	R5224401
Surrogate: 4-Bromofluorobenzene	72.3		70-130	%	14-SEP-20	16-SEP-20	R5224401
L2491764-5 EX-10-08							
Sampled By: R.Boyce on 16-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	16-AUG-20	22-AUG-20	R5183656
Toluene	0.400		0.050	mg/kg	16-AUG-20	22-AUG-20	R5183656
Ethylbenzene	<0.010		0.010	mg/kg	16-AUG-20	22-AUG-20	R5183656
m+p-Xylene	<0.050		0.050	mg/kg	16-AUG-20	22-AUG-20	R5183656
o-Xylene	<0.050		0.050	mg/kg	16-AUG-20	22-AUG-20	R5183656
Xylenes	<0.10		0.10	mg/kg	16-AUG-20	22-AUG-20	R5183656
Surrogate: 1,4-Difluorobenzene (SS)	87.7		70-130	%	16-AUG-20	22-AUG-20	R5183656
Surrogate: 4-Bromofluorobenzene (SS)	72.2		70-130	%	16-AUG-20	22-AUG-20	R5183656
Surrogate: 3,4-Dichlorotoluene (SS)	96.9		70-130	%	16-AUG-20	22-AUG-20	R5183656
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	91.3		70-130	%	21-AUG-20	21-AUG-20	R5196996
Chrom. to baseline at nC50	YES				21-AUG-20	21-AUG-20	R5196996
Prep/Analysis Dates					21-AUG-20	21-AUG-20	R5196996
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		17-SEP-20	
F1-BTEX	<10		10	mg/kg		17-SEP-20	
F2 (C10-C16)	<20		20	mg/kg		17-SEP-20	
F3 (C16-C34)	<20		20	mg/kg		17-SEP-20	
F4 (C34-C50)	<20		20	mg/kg		17-SEP-20	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		17-SEP-20	
Miscellaneous Parameters							
% Moisture	14.0		0.25	%		21-AUG-20	R5196418
Biogenic Toluene in Soil							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2491764-5 EX-10-08							
Sampled By: R.Boyce on 16-AUG-20							
Matrix: SOIL							
Biogenic Toluene in Soil							
Styrene	<0.050		0.050	mg/kg	14-SEP-20	16-SEP-20	R5224401
alpha-Pinene	<0.050		0.050	mg/kg	14-SEP-20	16-SEP-20	R5224401
m-Cymene	<0.050		0.050	mg/kg	14-SEP-20	16-SEP-20	R5224401
p-Cymene	<0.050		0.050	mg/kg	14-SEP-20	16-SEP-20	R5224401
o-Cymene	<0.050		0.050	mg/kg	14-SEP-20	16-SEP-20	R5224401
Benzaldehyde	<0.050		0.050	mg/kg	14-SEP-20	16-SEP-20	R5224401
Toluene Ratio	1.00				14-SEP-20	16-SEP-20	R5224401
Cymene Ratio	0.00				14-SEP-20	16-SEP-20	R5224401
Surrogate: 1,4-Difluorobenzene	85.0		70-130	%	14-SEP-20	16-SEP-20	R5224401
Surrogate: 4-Bromofluorobenzene	79.1		70-130	%	14-SEP-20	16-SEP-20	R5224401
L2491764-6 EX-09-01							
Sampled By: R.Boyce on 16-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.0811		0.0050	mg/kg	16-AUG-20	22-AUG-20	R5183656
Toluene	0.922		0.050	mg/kg	16-AUG-20	22-AUG-20	R5183656
Ethylbenzene	0.037		0.010	mg/kg	16-AUG-20	22-AUG-20	R5183656
m+p-Xylene	<0.050		0.050	mg/kg	16-AUG-20	22-AUG-20	R5183656
o-Xylene	<0.050		0.050	mg/kg	16-AUG-20	22-AUG-20	R5183656
Xylenes	<0.10		0.10	mg/kg	16-AUG-20	22-AUG-20	R5183656
Surrogate: 1,4-Difluorobenzene (SS)	87.1		70-130	%	16-AUG-20	22-AUG-20	R5183656
Surrogate: 4-Bromofluorobenzene (SS)	72.2		70-130	%	16-AUG-20	22-AUG-20	R5183656
Surrogate: 3,4-Dichlorotoluene (SS)	93.5		70-130	%	16-AUG-20	22-AUG-20	R5183656
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	87.3		70-130	%	21-AUG-20	21-AUG-20	R5196996
Chrom. to baseline at nC50	YES				21-AUG-20	21-AUG-20	R5196996
Prep/Analysis Dates					21-AUG-20	21-AUG-20	R5196996
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		22-AUG-20	
F1-BTEX	<10		10	mg/kg		22-AUG-20	
F2 (C10-C16)	<20		20	mg/kg		22-AUG-20	
F3 (C16-C34)	<20		20	mg/kg		22-AUG-20	
F4 (C34-C50)	<20		20	mg/kg		22-AUG-20	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		22-AUG-20	
Miscellaneous Parameters							
% Moisture	12.4		0.25	%		21-AUG-20	R5196418
L2491764-7 EX-09-09							
Sampled By: R.Boyce on 16-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.0129		0.0050	mg/kg	16-AUG-20	22-AUG-20	R5183656
Toluene	0.509		0.050	mg/kg	16-AUG-20	22-AUG-20	R5183656
Ethylbenzene	0.038		0.010	mg/kg	16-AUG-20	22-AUG-20	R5183656
m+p-Xylene	<0.050		0.050	mg/kg	16-AUG-20	22-AUG-20	R5183656
o-Xylene	<0.050		0.050	mg/kg	16-AUG-20	22-AUG-20	R5183656
Xylenes	<0.10		0.10	mg/kg	16-AUG-20	22-AUG-20	R5183656
Surrogate: 1,4-Difluorobenzene (SS)	89.5		70-130	%	16-AUG-20	22-AUG-20	R5183656
Surrogate: 4-Bromofluorobenzene (SS)	78.0		70-130	%	16-AUG-20	22-AUG-20	R5183656
Surrogate: 3,4-Dichlorotoluene (SS)	93.9		70-130	%	16-AUG-20	22-AUG-20	R5183656

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2491764-7 EX-09-09							
Sampled By: R.Boyce on 16-AUG-20							
Matrix: SOIL							
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	88.9		70-130	%	21-AUG-20	21-AUG-20	R5196996
Chrom. to baseline at nC50	YES				21-AUG-20	21-AUG-20	R5196996
Prep/Analysis Dates					21-AUG-20	21-AUG-20	R5196996
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		17-SEP-20	
F1-BTEX	<10		10	mg/kg		17-SEP-20	
F2 (C10-C16)	<20		20	mg/kg		17-SEP-20	
F3 (C16-C34)	<20		20	mg/kg		17-SEP-20	
F4 (C34-C50)	<20		20	mg/kg		17-SEP-20	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		17-SEP-20	
Miscellaneous Parameters							
% Moisture	11.4		0.25	%		21-AUG-20	R5196418
Biogenic Toluene in Soil							
Styrene	<0.050		0.050	mg/kg	14-SEP-20	16-SEP-20	R5224401
alpha-Pinene	<0.050		0.050	mg/kg	14-SEP-20	16-SEP-20	R5224401
m-Cymene	<0.050		0.050	mg/kg	14-SEP-20	16-SEP-20	R5224401
p-Cymene	<0.050		0.050	mg/kg	14-SEP-20	16-SEP-20	R5224401
o-Cymene	<0.050		0.050	mg/kg	14-SEP-20	16-SEP-20	R5224401
Benzaldehyde	<0.30	DLCI	0.30	mg/kg	14-SEP-20	16-SEP-20	R5224401
Toluene Ratio	0.909				14-SEP-20	16-SEP-20	R5224401
Cymene Ratio	0.00				14-SEP-20	16-SEP-20	R5224401
Surrogate: 1,4-Difluorobenzene	77.8		70-130	%	14-SEP-20	16-SEP-20	R5224401
Surrogate: 4-Bromofluorobenzene	80.9		70-130	%	14-SEP-20	16-SEP-20	R5224401
L2491764-8 EX-09-06							
Sampled By: R.Boyce on 16-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	16-AUG-20	22-AUG-20	R5183656
Toluene	0.364		0.050	mg/kg	16-AUG-20	22-AUG-20	R5183656
Ethylbenzene	<0.010		0.010	mg/kg	16-AUG-20	22-AUG-20	R5183656
m+p-Xylene	<0.050		0.050	mg/kg	16-AUG-20	22-AUG-20	R5183656
o-Xylene	<0.050		0.050	mg/kg	16-AUG-20	22-AUG-20	R5183656
Xylenes	<0.10		0.10	mg/kg	16-AUG-20	22-AUG-20	R5183656
Surrogate: 1,4-Difluorobenzene (SS)	92.8		70-130	%	16-AUG-20	22-AUG-20	R5183656
Surrogate: 4-Bromofluorobenzene (SS)	75.9		70-130	%	16-AUG-20	22-AUG-20	R5183656
Surrogate: 3,4-Dichlorotoluene (SS)	103.2		70-130	%	16-AUG-20	22-AUG-20	R5183656
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	90.7		70-130	%	21-AUG-20	21-AUG-20	R5196996
Chrom. to baseline at nC50	YES				21-AUG-20	21-AUG-20	R5196996
Prep/Analysis Dates					21-AUG-20	21-AUG-20	R5196996
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		22-AUG-20	
F1-BTEX	<10		10	mg/kg		22-AUG-20	
F2 (C10-C16)	<20		20	mg/kg		22-AUG-20	
F3 (C16-C34)	63		20	mg/kg		22-AUG-20	
F4 (C34-C50)	23		20	mg/kg		22-AUG-20	
Total Hydrocarbons (C6-C50)	86		20	mg/kg		22-AUG-20	
Miscellaneous Parameters							
% Moisture	8.75		0.25	%		21-AUG-20	R5196418

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2491764-9 EX-09-09-D							
Sampled By: R.Boyce on 16-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.0137		0.0050	mg/kg	16-AUG-20	22-AUG-20	R5183656
Toluene	1.33		0.050	mg/kg	16-AUG-20	22-AUG-20	R5183656
Ethylbenzene	0.079		0.010	mg/kg	16-AUG-20	22-AUG-20	R5183656
m+p-Xylene	0.080		0.050	mg/kg	16-AUG-20	22-AUG-20	R5183656
o-Xylene	<0.050		0.050	mg/kg	16-AUG-20	22-AUG-20	R5183656
Xylenes	<0.10		0.10	mg/kg	16-AUG-20	22-AUG-20	R5183656
Surrogate: 1,4-Difluorobenzene (SS)	87.1		70-130	%	16-AUG-20	22-AUG-20	R5183656
Surrogate: 4-Bromofluorobenzene (SS)	80.1		70-130	%	16-AUG-20	22-AUG-20	R5183656
Surrogate: 3,4-Dichlorotoluene (SS)	89.8		70-130	%	16-AUG-20	22-AUG-20	R5183656
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	93.1		70-130	%	21-AUG-20	21-AUG-20	R5196996
Chrom. to baseline at nC50	YES				21-AUG-20	21-AUG-20	R5196996
Prep/Analysis Dates					21-AUG-20	21-AUG-20	R5196996
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		17-SEP-20	
F1-BTEX	<10		10	mg/kg		17-SEP-20	
F2 (C10-C16)	<20		20	mg/kg		17-SEP-20	
F3 (C16-C34)	<20		20	mg/kg		17-SEP-20	
F4 (C34-C50)	<20		20	mg/kg		17-SEP-20	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		17-SEP-20	
Miscellaneous Parameters							
% Moisture	10.8		0.25	%		21-AUG-20	R5196418
Biogenic Toluene in Soil							
Styrene	<0.050		0.050	mg/kg	14-SEP-20	16-SEP-20	R5224401
alpha-Pinene	<0.050		0.050	mg/kg	14-SEP-20	16-SEP-20	R5224401
m-Cymene	0.079		0.050	mg/kg	14-SEP-20	16-SEP-20	R5224401
p-Cymene	<0.050		0.050	mg/kg	14-SEP-20	16-SEP-20	R5224401
o-Cymene	<0.050		0.050	mg/kg	14-SEP-20	16-SEP-20	R5224401
Benzaldehyde	<0.75	DLCI	0.75	mg/kg	14-SEP-20	16-SEP-20	R5224401
Toluene Ratio	0.885				14-SEP-20	16-SEP-20	R5224401
Cymene Ratio	0.00				14-SEP-20	16-SEP-20	R5224401
Surrogate: 1,4-Difluorobenzene	71.3		70-130	%	14-SEP-20	16-SEP-20	R5224401
Surrogate: 4-Bromofluorobenzene	83.2		70-130	%	14-SEP-20	16-SEP-20	R5224401
L2491764-10 EX-09-12							
Sampled By: R.Boyce on 16-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	16-AUG-20	22-AUG-20	R5183656
Toluene	0.187		0.050	mg/kg	16-AUG-20	22-AUG-20	R5183656
Ethylbenzene	<0.010		0.010	mg/kg	16-AUG-20	22-AUG-20	R5183656
m+p-Xylene	<0.050		0.050	mg/kg	16-AUG-20	22-AUG-20	R5183656
o-Xylene	<0.050		0.050	mg/kg	16-AUG-20	22-AUG-20	R5183656
Xylenes	<0.10		0.10	mg/kg	16-AUG-20	22-AUG-20	R5183656
Surrogate: 1,4-Difluorobenzene (SS)	87.7		70-130	%	16-AUG-20	22-AUG-20	R5183656
Surrogate: 4-Bromofluorobenzene (SS)	76.9		70-130	%	16-AUG-20	22-AUG-20	R5183656
Surrogate: 3,4-Dichlorotoluene (SS)	90.2		70-130	%	16-AUG-20	22-AUG-20	R5183656
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	91.3		70-130	%	21-AUG-20	21-AUG-20	R5196996
Chrom. to baseline at nC50	YES				21-AUG-20	21-AUG-20	R5196996

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2491764-10 EX-09-12							
Sampled By: R.Boyce on 16-AUG-20							
Matrix: SOIL							
CCME Total Extractable Hydrocarbons							
Prep/Analysis Dates					21-AUG-20	21-AUG-20	R5196996
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		22-AUG-20	
F1-BTEX	<10		10	mg/kg		22-AUG-20	
F2 (C10-C16)	<20		20	mg/kg		22-AUG-20	
F3 (C16-C34)	<20		20	mg/kg		22-AUG-20	
F4 (C34-C50)	<20		20	mg/kg		22-AUG-20	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		22-AUG-20	
Miscellaneous Parameters							
% Moisture	9.36		0.25	%		21-AUG-20	R5196418
L2491764-11 EX-09-11							
Sampled By: R.Boyce on 16-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.0650		0.0050	mg/kg	16-AUG-20	22-AUG-20	R5183656
Toluene	0.400		0.050	mg/kg	16-AUG-20	22-AUG-20	R5183656
Ethylbenzene	0.043		0.010	mg/kg	16-AUG-20	22-AUG-20	R5183656
m+p-Xylene	<0.050		0.050	mg/kg	16-AUG-20	22-AUG-20	R5183656
o-Xylene	<0.050		0.050	mg/kg	16-AUG-20	22-AUG-20	R5183656
Xylenes	<0.10		0.10	mg/kg	16-AUG-20	22-AUG-20	R5183656
Surrogate: 1,4-Difluorobenzene (SS)	86.0		70-130	%	16-AUG-20	22-AUG-20	R5183656
Surrogate: 4-Bromofluorobenzene (SS)	74.4		70-130	%	16-AUG-20	22-AUG-20	R5183656
Surrogate: 3,4-Dichlorotoluene (SS)	90.8		70-130	%	16-AUG-20	22-AUG-20	R5183656
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	86.6		70-130	%	21-AUG-20	21-AUG-20	R5196996
Chrom. to baseline at nC50	YES				21-AUG-20	21-AUG-20	R5196996
Prep/Analysis Dates					21-AUG-20	21-AUG-20	R5196996
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		22-AUG-20	
F1-BTEX	<10		10	mg/kg		22-AUG-20	
F2 (C10-C16)	<20		20	mg/kg		22-AUG-20	
F3 (C16-C34)	<20		20	mg/kg		22-AUG-20	
F4 (C34-C50)	<20		20	mg/kg		22-AUG-20	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		22-AUG-20	
Miscellaneous Parameters							
% Moisture	10.4		0.25	%		21-AUG-20	R5196418
L2491764-12 EX-09-14							
Sampled By: R.Boyce on 16-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	16-AUG-20	22-AUG-20	R5183656
Toluene	0.196		0.050	mg/kg	16-AUG-20	22-AUG-20	R5183656
Ethylbenzene	<0.010		0.010	mg/kg	16-AUG-20	22-AUG-20	R5183656
m+p-Xylene	<0.050		0.050	mg/kg	16-AUG-20	22-AUG-20	R5183656
o-Xylene	<0.050		0.050	mg/kg	16-AUG-20	22-AUG-20	R5183656
Xylenes	<0.10		0.10	mg/kg	16-AUG-20	22-AUG-20	R5183656
Surrogate: 1,4-Difluorobenzene (SS)	79.8		70-130	%	16-AUG-20	22-AUG-20	R5183656
Surrogate: 4-Bromofluorobenzene (SS)	73.3		70-130	%	16-AUG-20	22-AUG-20	R5183656
Surrogate: 3,4-Dichlorotoluene (SS)	96.4		70-130	%	16-AUG-20	22-AUG-20	R5183656

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2491764-12 EX-09-14							
Sampled By: R.Boyce on 16-AUG-20							
Matrix: SOIL							
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	93.7		70-130	%	21-AUG-20	21-AUG-20	R5196996
Chrom. to baseline at nC50	YES				21-AUG-20	21-AUG-20	R5196996
Prep/Analysis Dates					21-AUG-20	21-AUG-20	R5196996
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		22-AUG-20	
F1-BTEX	<10		10	mg/kg		22-AUG-20	
F2 (C10-C16)	<20		20	mg/kg		22-AUG-20	
F3 (C16-C34)	<20		20	mg/kg		22-AUG-20	
F4 (C34-C50)	<20		20	mg/kg		22-AUG-20	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		22-AUG-20	
Miscellaneous Parameters							
% Moisture	11.8		0.25	%		21-AUG-20	R5196418
L2491764-13 EX-09-07							
Sampled By: R.Boyce on 16-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.0117		0.0050	mg/kg	16-AUG-20	22-AUG-20	R5183656
Toluene	0.301		0.050	mg/kg	16-AUG-20	22-AUG-20	R5183656
Ethylbenzene	0.025		0.010	mg/kg	16-AUG-20	22-AUG-20	R5183656
m+p-Xylene	<0.050		0.050	mg/kg	16-AUG-20	22-AUG-20	R5183656
o-Xylene	<0.050		0.050	mg/kg	16-AUG-20	22-AUG-20	R5183656
Xylenes	<0.10		0.10	mg/kg	16-AUG-20	22-AUG-20	R5183656
Surrogate: 1,4-Difluorobenzene (SS)	91.9		70-130	%	16-AUG-20	22-AUG-20	R5183656
Surrogate: 4-Bromofluorobenzene (SS)	76.9		70-130	%	16-AUG-20	22-AUG-20	R5183656
Surrogate: 3,4-Dichlorotoluene (SS)	101.8		70-130	%	16-AUG-20	22-AUG-20	R5183656
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	91.6		70-130	%	21-AUG-20	21-AUG-20	R5196996
Chrom. to baseline at nC50	YES				21-AUG-20	21-AUG-20	R5196996
Prep/Analysis Dates					21-AUG-20	21-AUG-20	R5196996
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		22-AUG-20	
F1-BTEX	<10		10	mg/kg		22-AUG-20	
F2 (C10-C16)	<20		20	mg/kg		22-AUG-20	
F3 (C16-C34)	<20		20	mg/kg		22-AUG-20	
F4 (C34-C50)	<20		20	mg/kg		22-AUG-20	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		22-AUG-20	
Miscellaneous Parameters							
% Moisture	8.46		0.25	%		21-AUG-20	R5196418
L2491764-14 EX-09-04							
Sampled By: R.Boyce on 16-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	16-AUG-20	22-AUG-20	R5183656
Toluene	1.39		0.050	mg/kg	16-AUG-20	22-AUG-20	R5183656
Ethylbenzene	<0.010		0.010	mg/kg	16-AUG-20	22-AUG-20	R5183656
m+p-Xylene	<0.050		0.050	mg/kg	16-AUG-20	22-AUG-20	R5183656
o-Xylene	<0.050		0.050	mg/kg	16-AUG-20	22-AUG-20	R5183656
Xylenes	<0.10		0.10	mg/kg	16-AUG-20	22-AUG-20	R5183656
Surrogate: 1,4-Difluorobenzene (SS)	85.8		70-130	%	16-AUG-20	22-AUG-20	R5183656

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2491764-14 EX-09-04							
Sampled By: R.Boyce on 16-AUG-20							
Matrix: SOIL							
BTEX and F1							
Surrogate: 4-Bromofluorobenzene (SS)	81.0		70-130	%	16-AUG-20	22-AUG-20	R5183656
Surrogate: 3,4-Dichlorotoluene (SS)	87.0		70-130	%	16-AUG-20	22-AUG-20	R5183656
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	93.2		70-130	%	21-AUG-20	21-AUG-20	R5196996
Chrom. to baseline at nC50	YES				21-AUG-20	21-AUG-20	R5196996
Prep/Analysis Dates					21-AUG-20	21-AUG-20	R5196996
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		17-SEP-20	
F1-BTEX	<10		10	mg/kg		17-SEP-20	
F2 (C10-C16)	<20		20	mg/kg		17-SEP-20	
F3 (C16-C34)	210		20	mg/kg		17-SEP-20	
F4 (C34-C50)	34		20	mg/kg		17-SEP-20	
Total Hydrocarbons (C6-C50)	244		20	mg/kg		17-SEP-20	
Miscellaneous Parameters							
% Moisture	8.01		0.25	%		21-AUG-20	R5196418
Biogenic Toluene in Soil							
Styrene	<0.050		0.050	mg/kg	14-SEP-20	16-SEP-20	R5224401
alpha-Pinene	<0.050		0.050	mg/kg	14-SEP-20	16-SEP-20	R5224401
m-Cymene	<0.050		0.050	mg/kg	14-SEP-20	16-SEP-20	R5224401
p-Cymene	<0.050		0.050	mg/kg	14-SEP-20	16-SEP-20	R5224401
o-Cymene	<0.050		0.050	mg/kg	14-SEP-20	16-SEP-20	R5224401
Benzaldehyde	<0.050		0.050	mg/kg	14-SEP-20	16-SEP-20	R5224401
Toluene Ratio	1.00				14-SEP-20	16-SEP-20	R5224401
Cymene Ratio	0.00				14-SEP-20	16-SEP-20	R5224401
Surrogate: 1,4-Difluorobenzene	78.5		70-130	%	14-SEP-20	16-SEP-20	R5224401
Surrogate: 4-Bromofluorobenzene	87.7		70-130	%	14-SEP-20	16-SEP-20	R5224401

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
DLCI	Detection Limit Raised: Chromatographic Interference due to co-elution.
SOL:MI	Surrogate recovery outside acceptable limits due to matrix interference

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BIOTOL-MEOH-HS-MS-CL	Soil	Biogenic Toluene in Soil	EPA 8260C/5021A

Volatile Organic Compounds (VOCs) are analyzed by static headspace GC-MS. Methanol extracts from soil samples are mixed with water in headspace vials, and heated and agitated on a headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law. Substances useful for the qualitative identification of Biogenic Toluene sources are included with this test. Cymene Ratio is the ratio of para-Cymene to Total Cymenes. Toluene Ratio is the ratio of Toluene to Total BTEX. Where both Cymene and Toluene ratios are near 1.00, Biogenic Toluene sources tend to be indicated, particularly for peat/muskeg sample types, as per published literature on the subject. Contact ALS for references.

BTXS,F1-MEOH-ED	Soil	BTEX and F1	EPA 8260C/5021A and CWS PHC Tier 1

This analysis involves the extraction of a subsample of the sediment/soil with methanol added in the field at the time of subsampling. The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. BTX Target compound concentrations are measured using mass spectrometry detection. The instrumental portion of F1 analysis is carried out in accordance with the Canada Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method (2001).

ETL-TVH,TEH-CCME-ED	Soil	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F2-4-TMB-ED	Soil	CCME Total Extractable Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

This analysis is carried out in accordance with the "Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method, Canadian Council of Ministers of the Environment" For C10 to C50 hydrocarbons (F2, F3, F4) and gravimetric heavy hydrocarbons (F4G-sg), a subsample of the sediment/soil is extracted with 1:1 hexane:acetone using a rotary extractor. The extract undergoes a silica-gel clean-up to remove polar compounds. F2, F3 & F4 are analyzed by on-column GC/FID, and F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where F4 (C34-C50) and F4G-sg results are reported for a sample, the larger of the reported values is used for comparison against the relevant CCME standard for F4.
7. The gravimetric heavy hydrocarbon results (F4G-sg), cannot be added to the C6 to C50 hydrocarbon results.
8. This method is validated for use.
9. Data from analysis of quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram.

PREP-MOISTURE-ED	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)

The weighed portion of soil is placed in a 105°C oven to dry to a constant weight; the drying time will vary based on the moisture content of the soil. The dried soil weight is then used to calculate % moisture.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
ED	ALS ENVIRONMENTAL - EDMONTON, ALBERTA, CANADA
CL	ALS ENVIRONMENTAL - CALGARY, ALBERTA, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Client: GOLDER ASSOCIATES LTD
16820 107 Ave NW
Edmonton AB T5P 4C3
Contact: Steven Fiddler

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BIOTOL-MEOH-HS-MS-CL	**Soil**							
Batch R5224401								
WG3403690-2 LCS								
Styrene			81.1		%		70-130	16-SEP-20
alpha-Pinene			90.9		%		70-130	16-SEP-20
m-Cymene			114.7		%		70-130	16-SEP-20
p-Cymene			117.3		%		70-130	16-SEP-20
o-Cymene			93.8		%		70-130	16-SEP-20
Benzaldehyde			85.5		%		70-130	16-SEP-20
WG3403690-1 MB								
Styrene			<0.050		mg/kg		0.05	16-SEP-20
alpha-Pinene			<0.050		mg/kg		0.05	16-SEP-20
m-Cymene			<0.050		mg/kg		0.05	16-SEP-20
p-Cymene			<0.050		mg/kg		0.05	16-SEP-20
o-Cymene			<0.050		mg/kg		0.05	16-SEP-20
Benzaldehyde			<0.050		mg/kg		0.05	16-SEP-20
Surrogate: 1,4-Difluorobenzene			112.4		%		70-130	16-SEP-20
Surrogate: 4-Bromofluorobenzene			105.8		%		70-130	16-SEP-20
BTXS,F1-MEOH-ED	**Soil**							
Batch R5183656								
WG3388507-2 LCS								
Benzene			84.1		%		70-130	22-AUG-20
Toluene			87.4		%		70-130	22-AUG-20
Ethylbenzene			97.0		%		70-130	22-AUG-20
m+p-Xylene			99.2		%		70-130	22-AUG-20
o-Xylene			101.8		%		70-130	22-AUG-20
WG3388507-1 MB								
Benzene			<0.0050		mg/kg		0.005	22-AUG-20
Toluene			<0.050		mg/kg		0.05	22-AUG-20
Ethylbenzene			<0.010		mg/kg		0.01	22-AUG-20
m+p-Xylene			<0.050		mg/kg		0.05	22-AUG-20
o-Xylene			<0.050		mg/kg		0.05	22-AUG-20
Surrogate: 1,4-Difluorobenzene (SS)			85.6		%		70-130	22-AUG-20
Surrogate: 4-Bromofluorobenzene (SS)			72.8		%		70-130	22-AUG-20
Surrogate: 3,4-Dichlorotoluene (SS)			93.1		%		70-130	22-AUG-20
F2-4-TMB-ED	**Soil**							

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-4-TMB-ED	**Soil**							
Batch R5196996								
WG3388467-4 DUP		**L2491764-14**						
F2 (C10-C16)		<20	<20	RPD-NA	mg/kg	N/A	40	21-AUG-20
F3 (C16-C34)		210	170		mg/kg	21	40	21-AUG-20
F4 (C34-C50)		34	30		mg/kg	13	40	21-AUG-20
WG3388467-3 IRM		**ALS PHC RM3**						
F2 (C10-C16)			95.3		%		70-130	21-AUG-20
F3 (C16-C34)			99.9		%		70-130	21-AUG-20
F4 (C34-C50)			77.9		%		70-130	21-AUG-20
WG3388467-2 LCS		**DIESEL/MOTOR OIL**						
F2 (C10-C16)			94.8		%		70-130	21-AUG-20
F3 (C16-C34)			101.6		%		70-130	21-AUG-20
F4 (C34-C50)			100.9		%		70-130	21-AUG-20
WG3388467-1 MB								
F2 (C10-C16)			<20		mg/kg		20	21-AUG-20
F3 (C16-C34)			<20		mg/kg		20	21-AUG-20
F4 (C34-C50)			<20		mg/kg		20	21-AUG-20
Surrogate: 2-Bromobenzotrifluoride			88.6		%		70-130	21-AUG-20
PREP-MOISTURE-ED	**Soil**							
Batch R5196418								
WG3388512-3 DUP		**L2491764-5**						
% Moisture		14.0	13.1		%	6.5	20	21-AUG-20
WG3388512-2 LCS								
% Moisture			101.0		%		90-110	21-AUG-20
WG3388512-1 MB								
% Moisture			<0.25		%		0.25	21-AUG-20

Quality Control Report

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

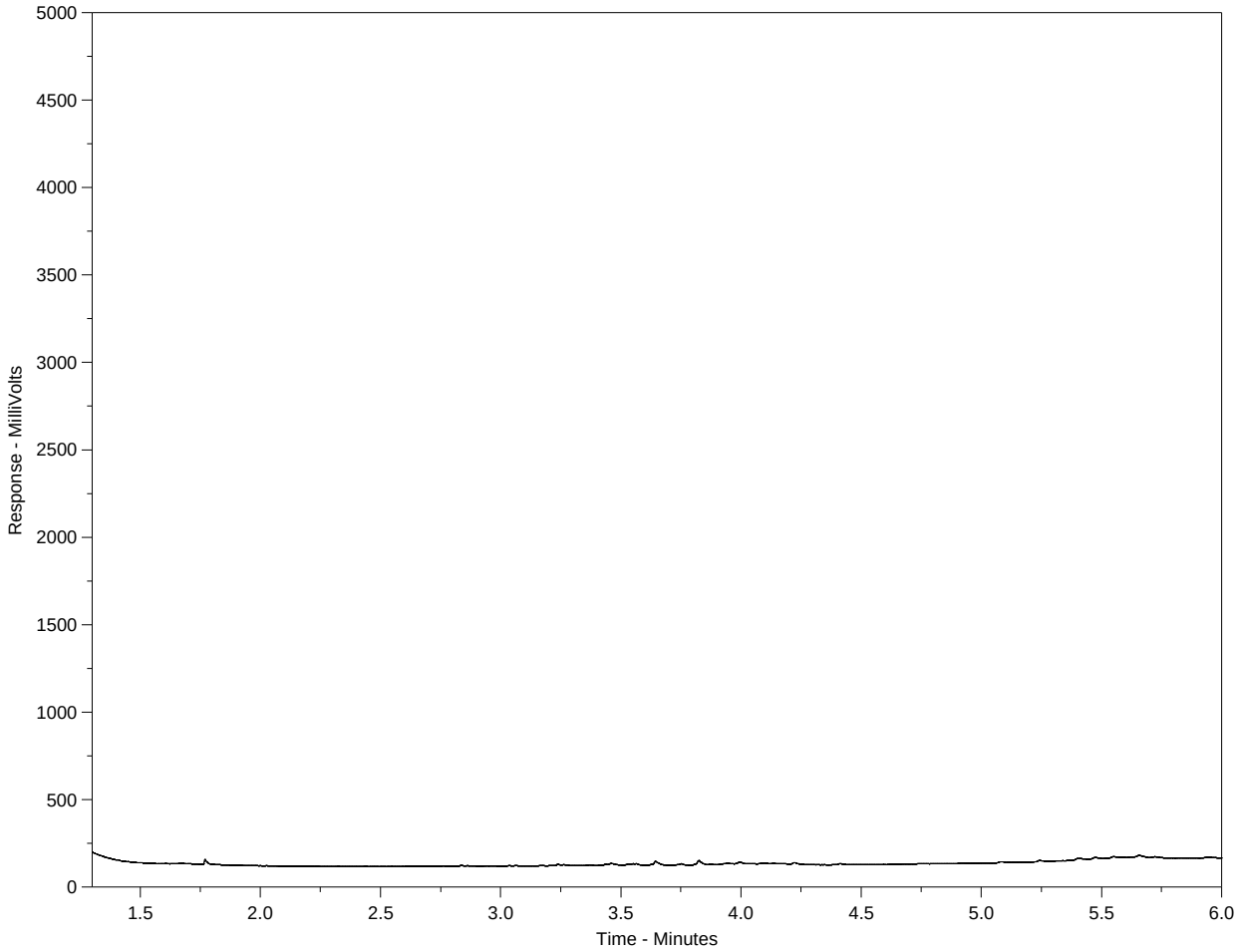
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

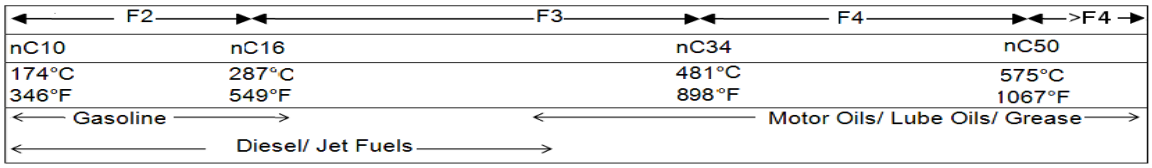
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

Hydrocarbon Distribution Report

ALS Sample ID: L2491764-1
Client ID: EX-10-01





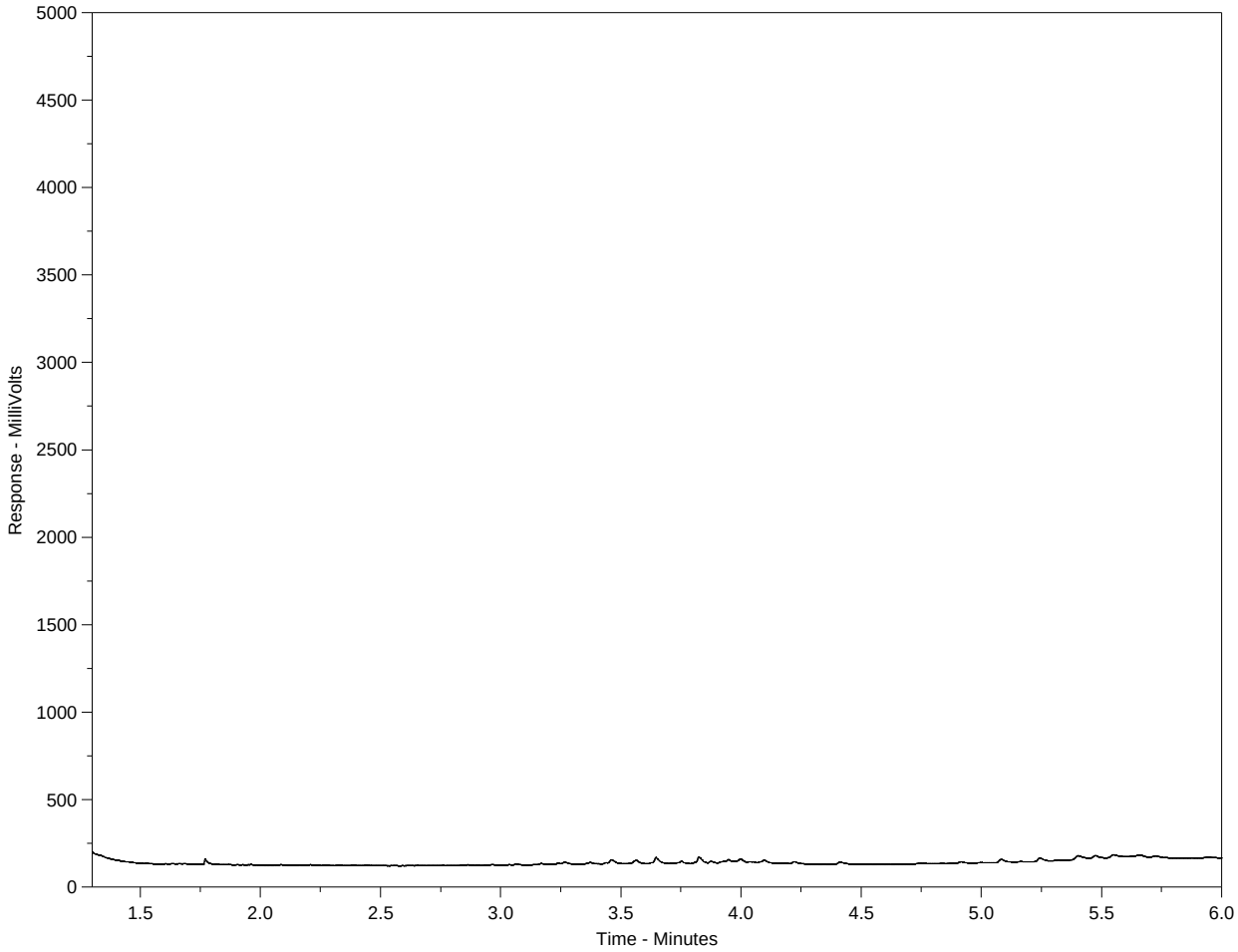
The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

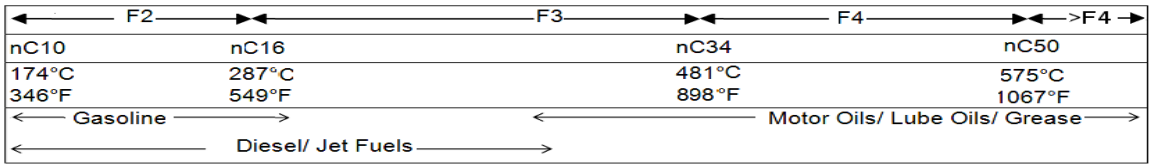
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2491764-2
Client ID: EX-10-04





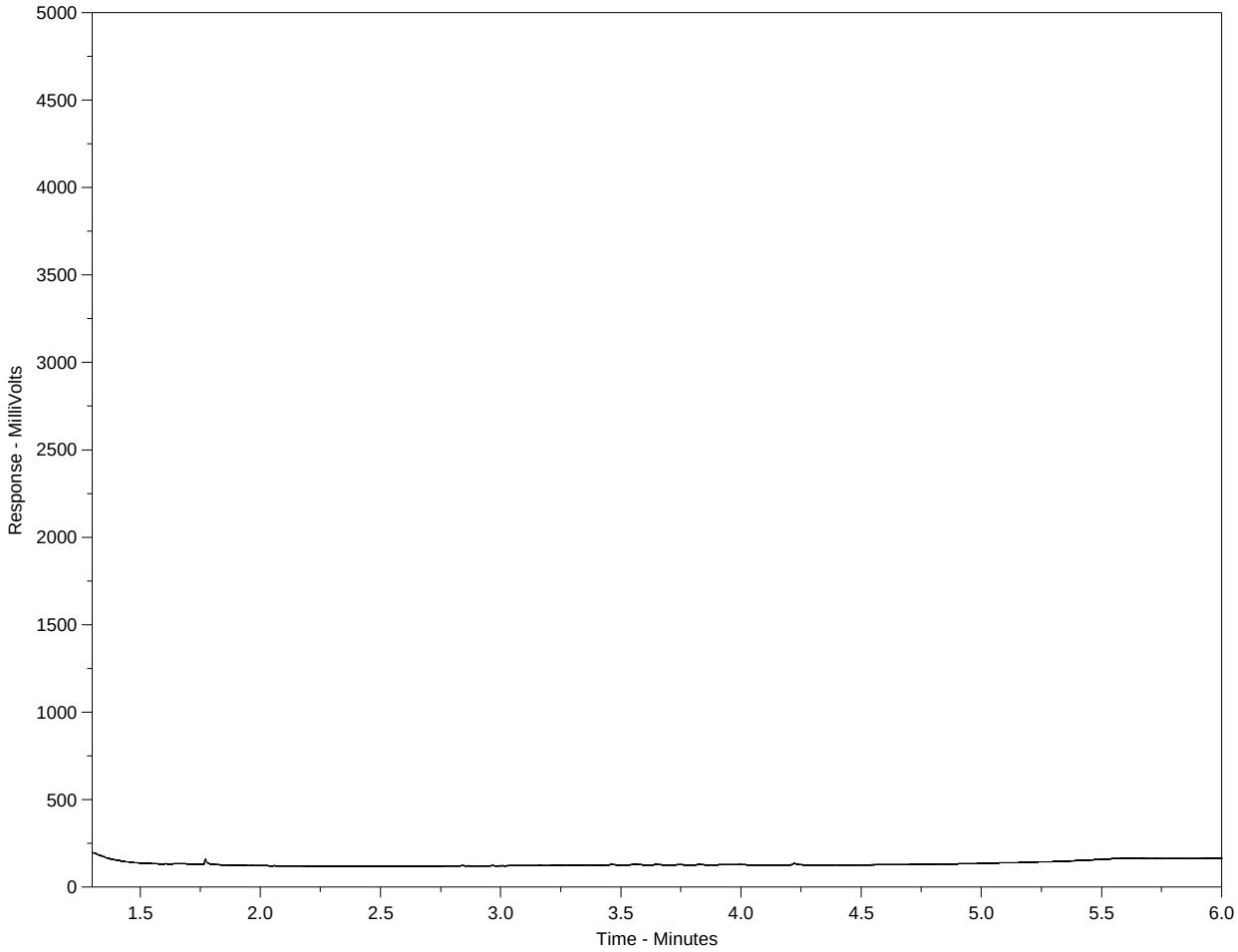
The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

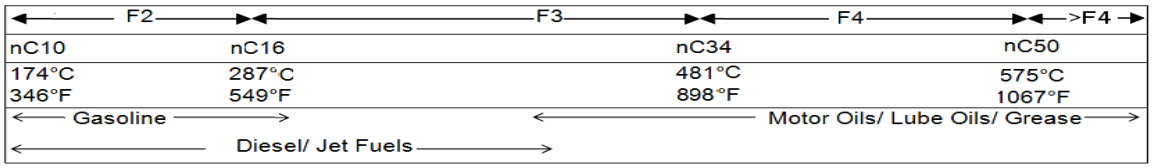
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2491764-3
Client ID: EX-10-09





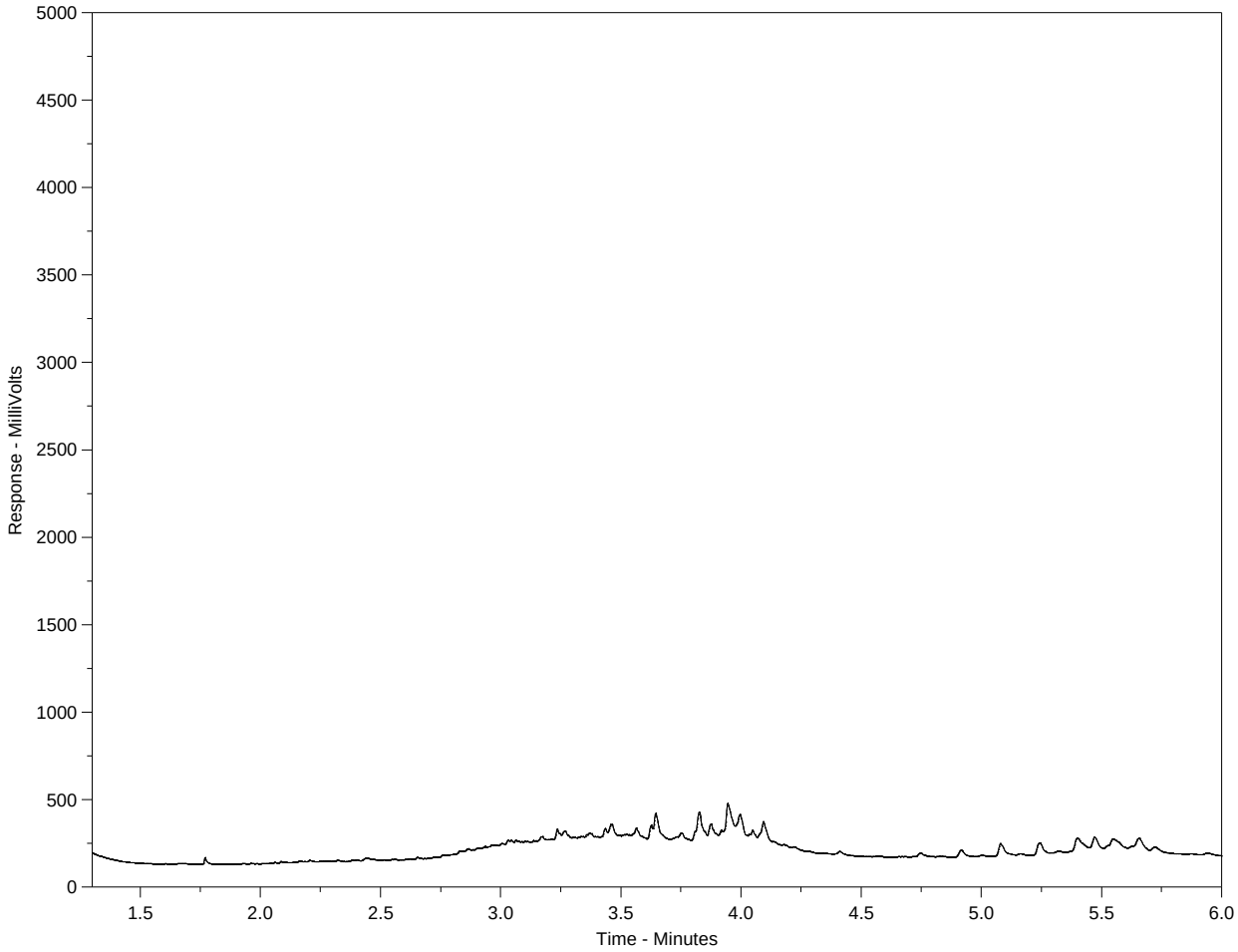
The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

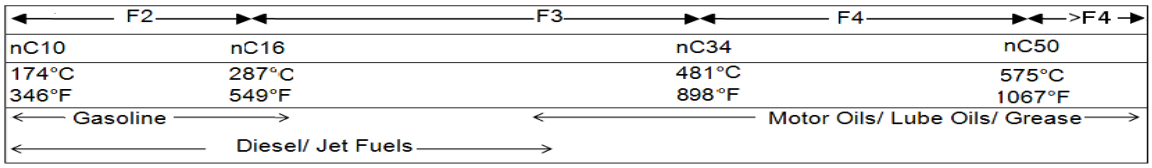
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2491764-4
Client ID: EX-10-06





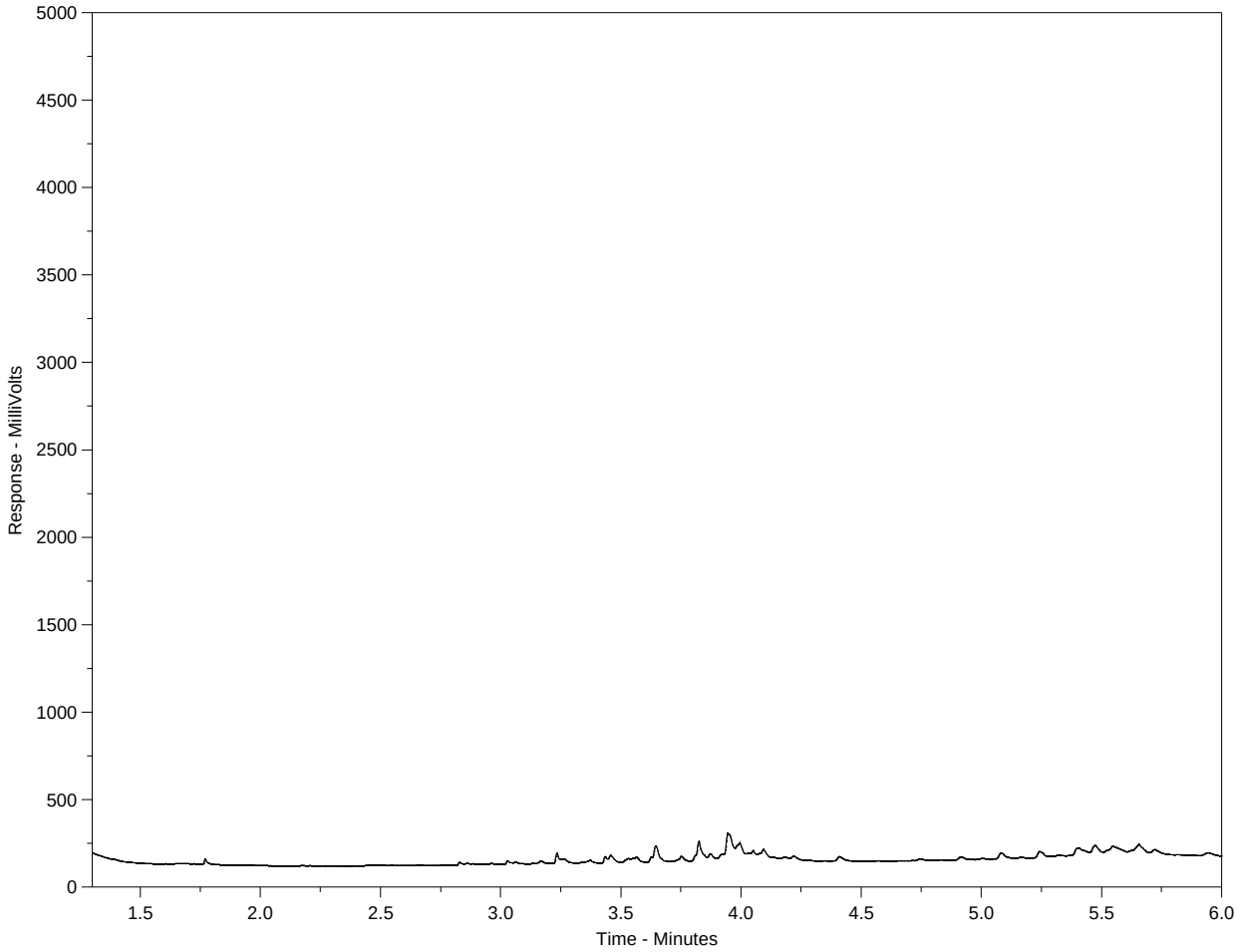
The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

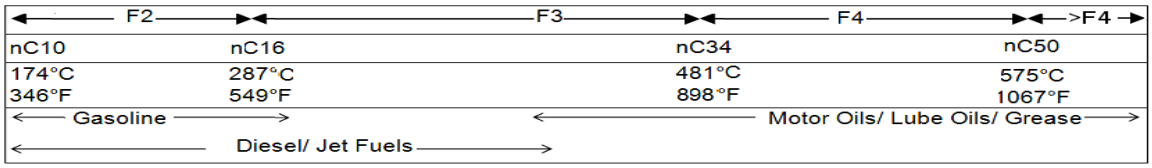
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2491764-5
Client ID: EX-10-08





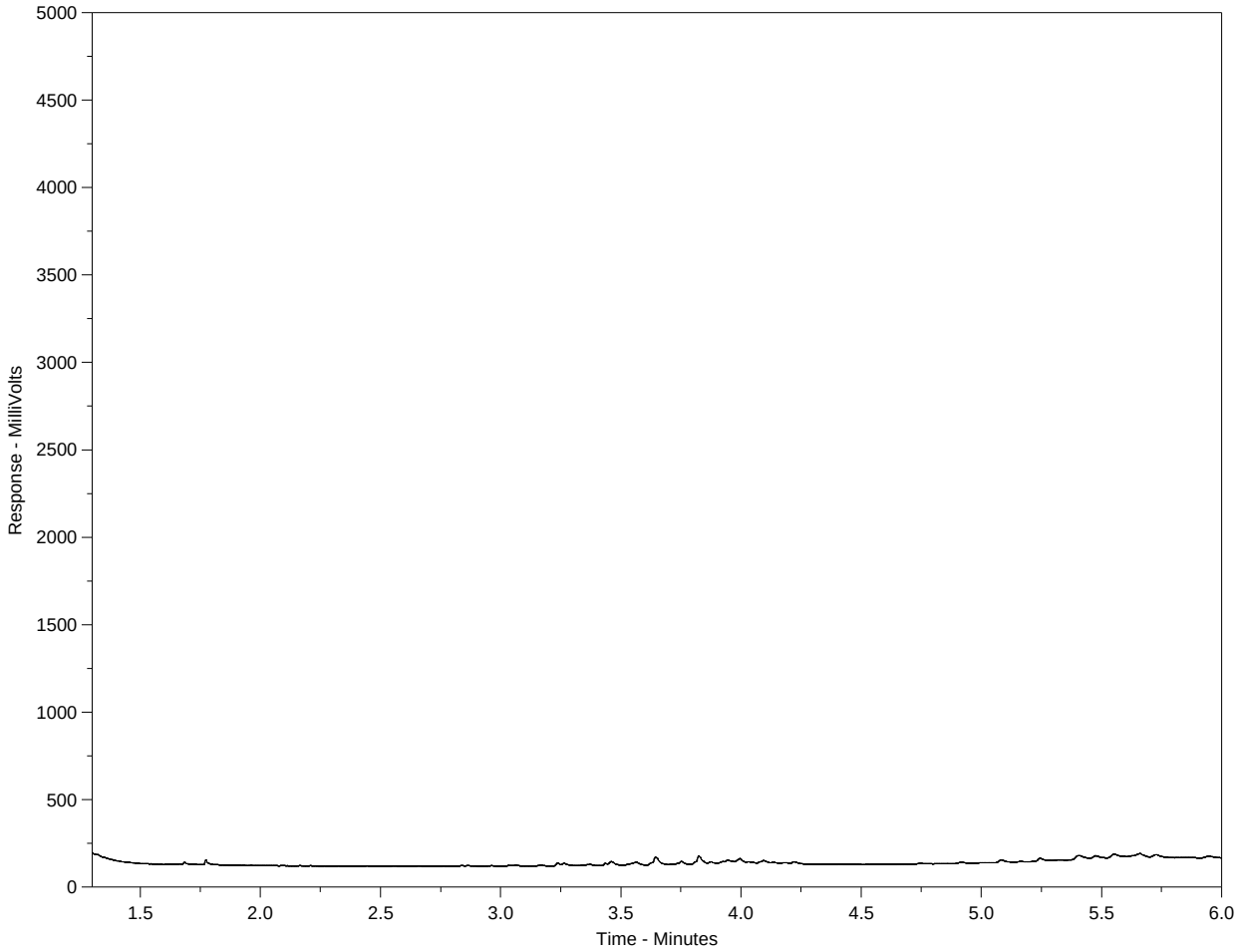
The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

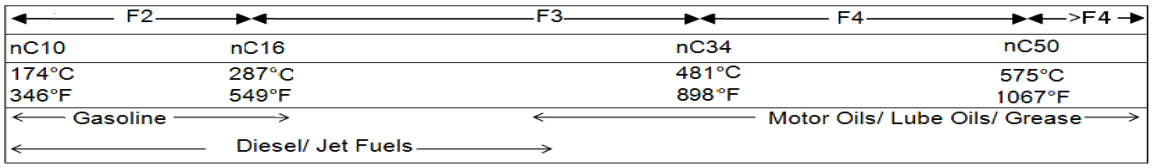
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2491764-6
Client ID: EX-09-01





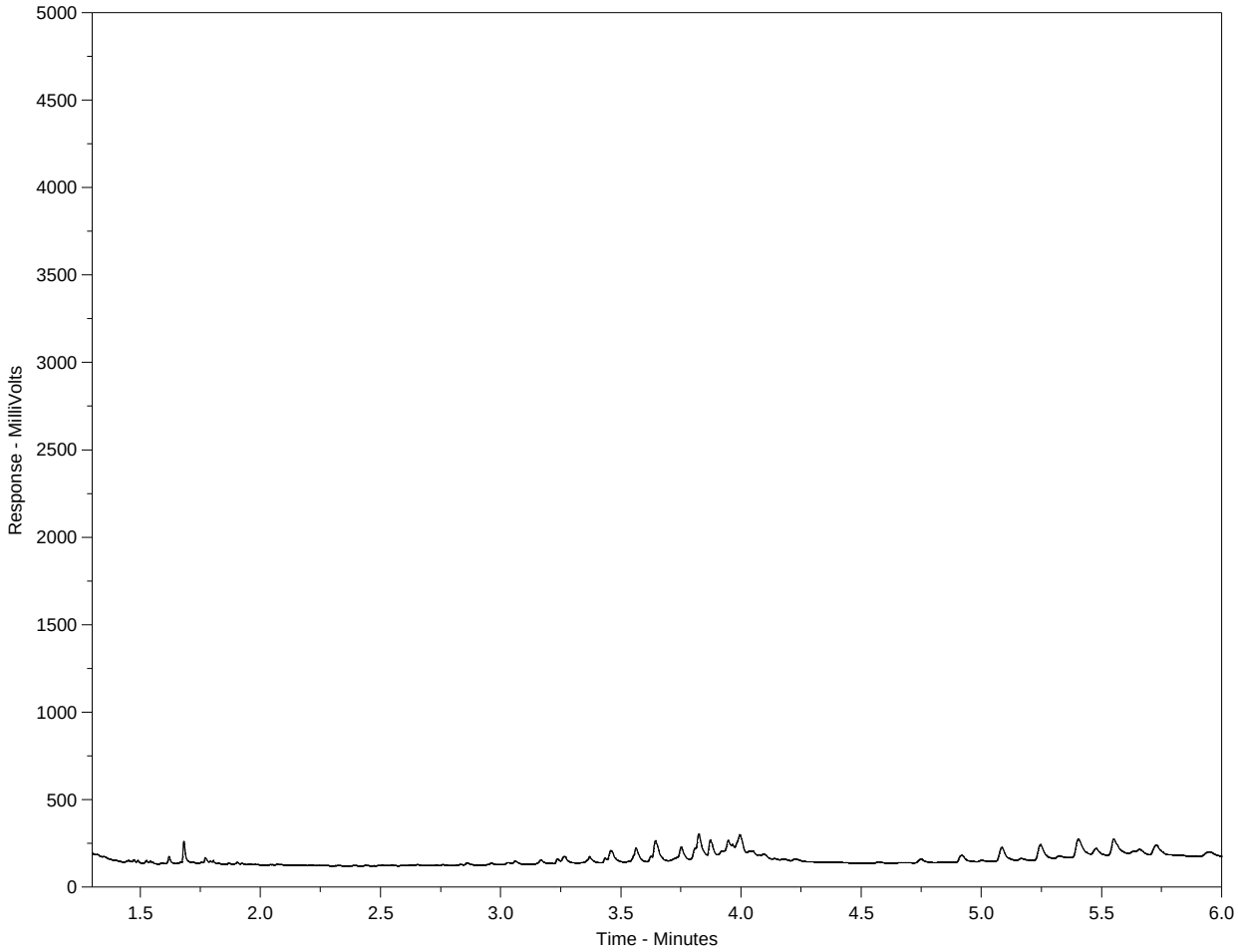
The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

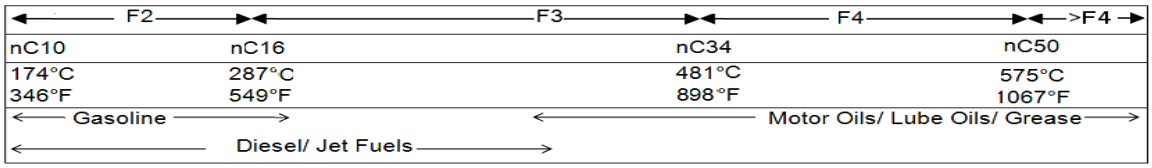
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2491764-7
Client ID: EX-09-09





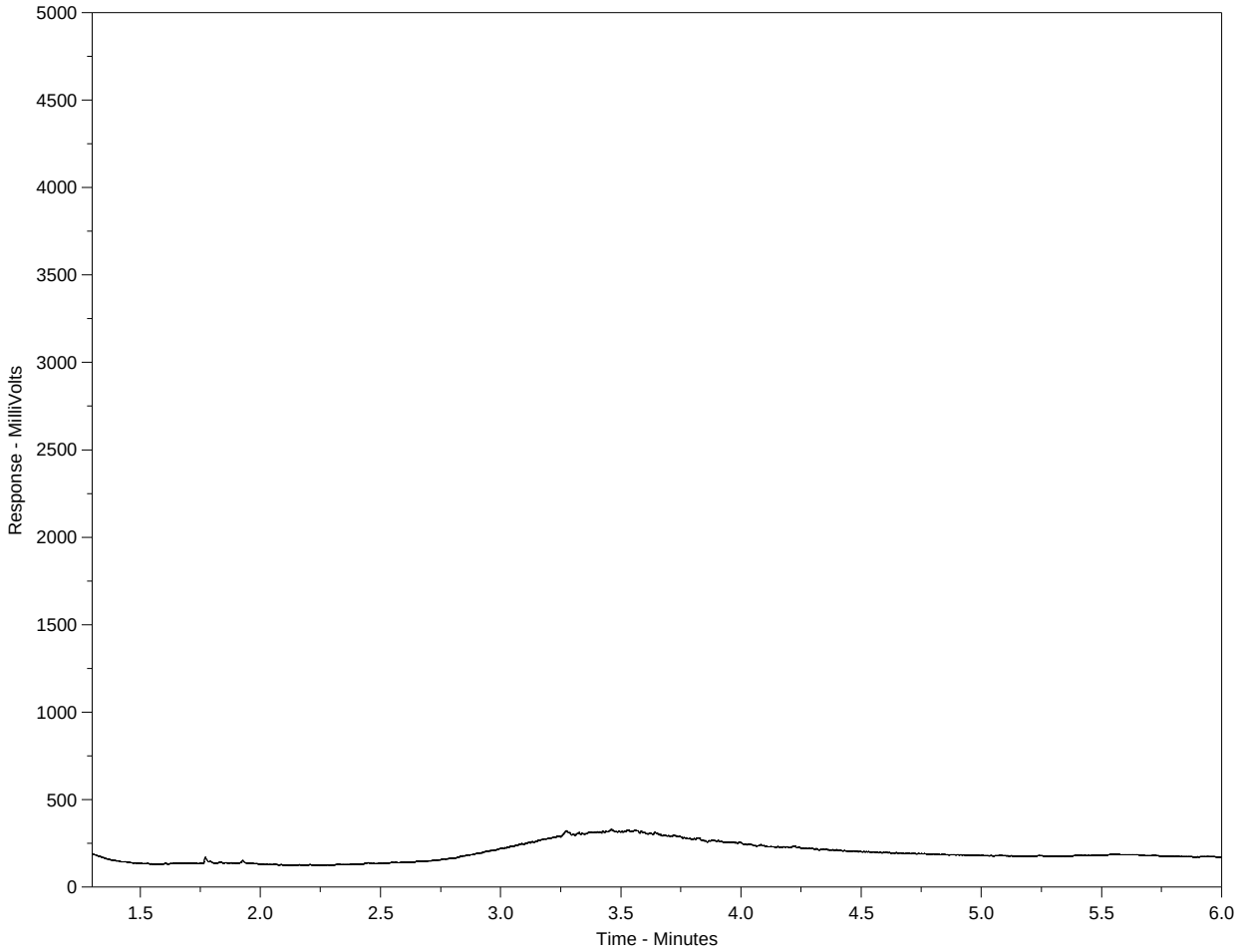
The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

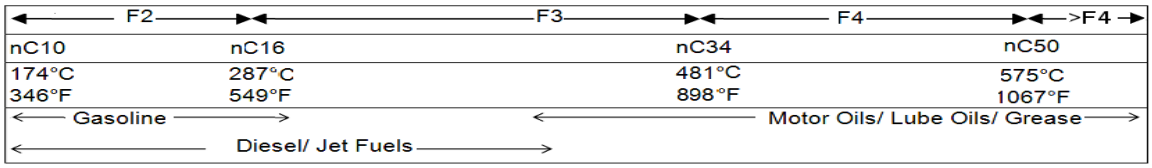
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
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Hydrocarbon Distribution Report

ALS Sample ID: L2491764-8
Client ID: EX-09-06





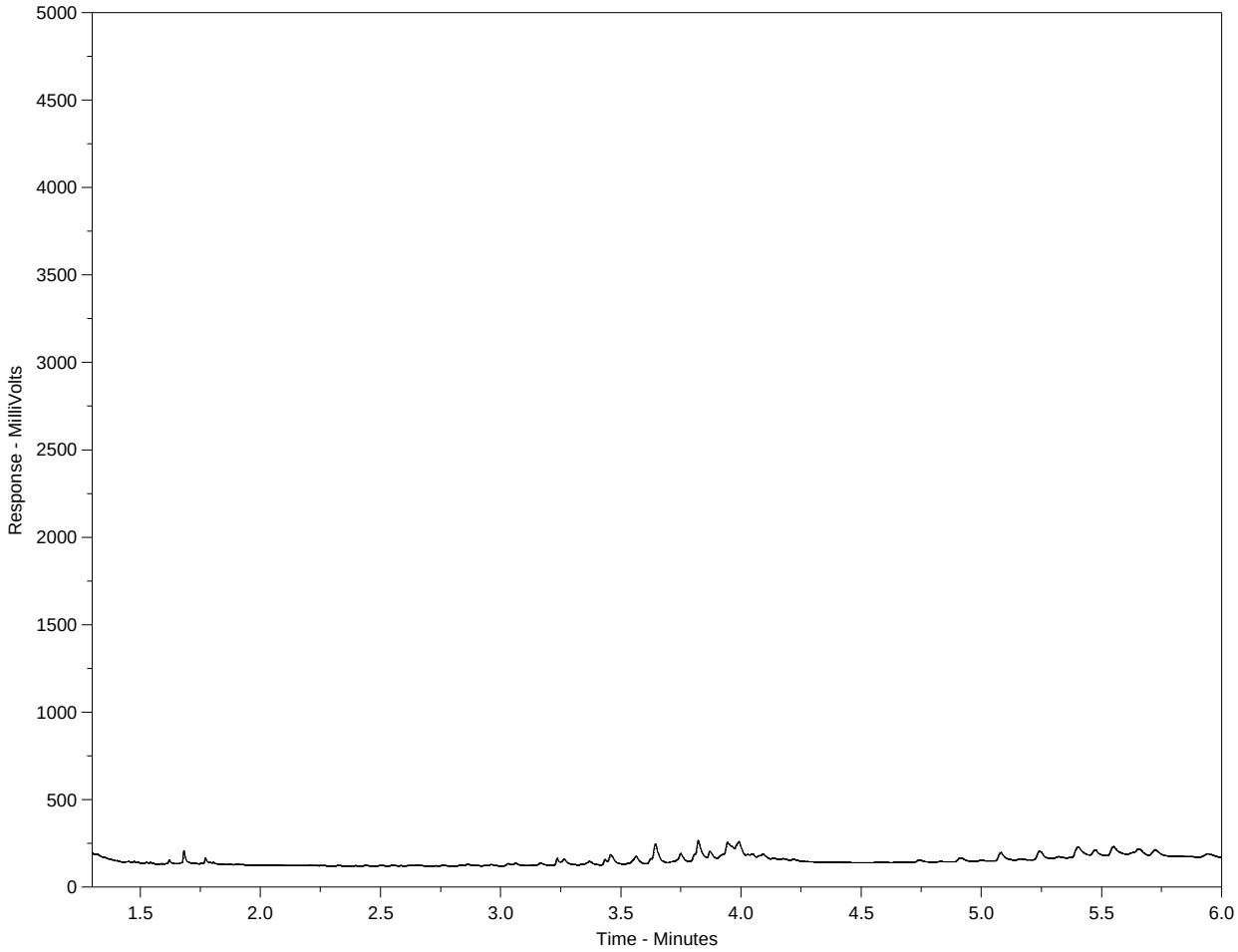
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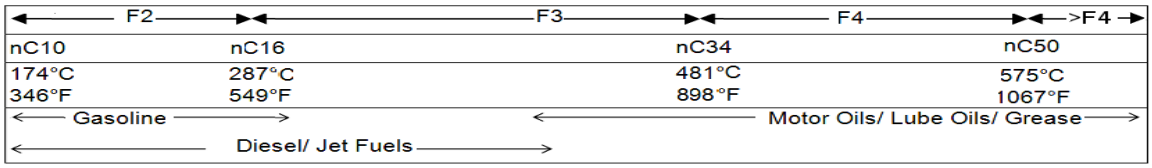
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
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Hydrocarbon Distribution Report

ALS Sample ID: L2491764-9
Client ID: EX-09-09-D





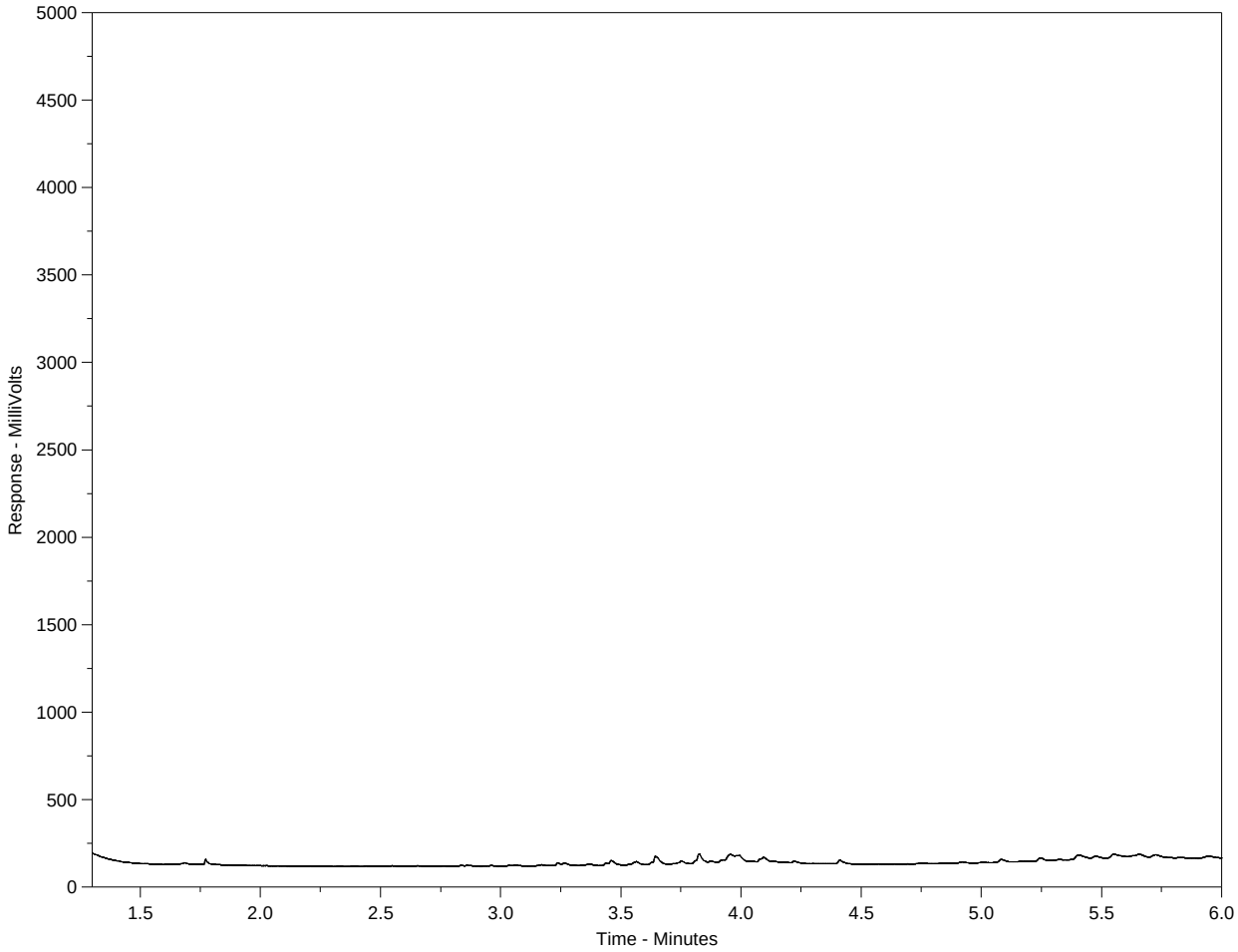
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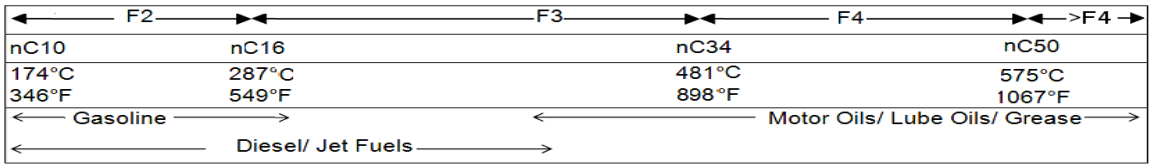
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
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Hydrocarbon Distribution Report

ALS Sample ID: L2491764-10
Client ID: EX-09-12





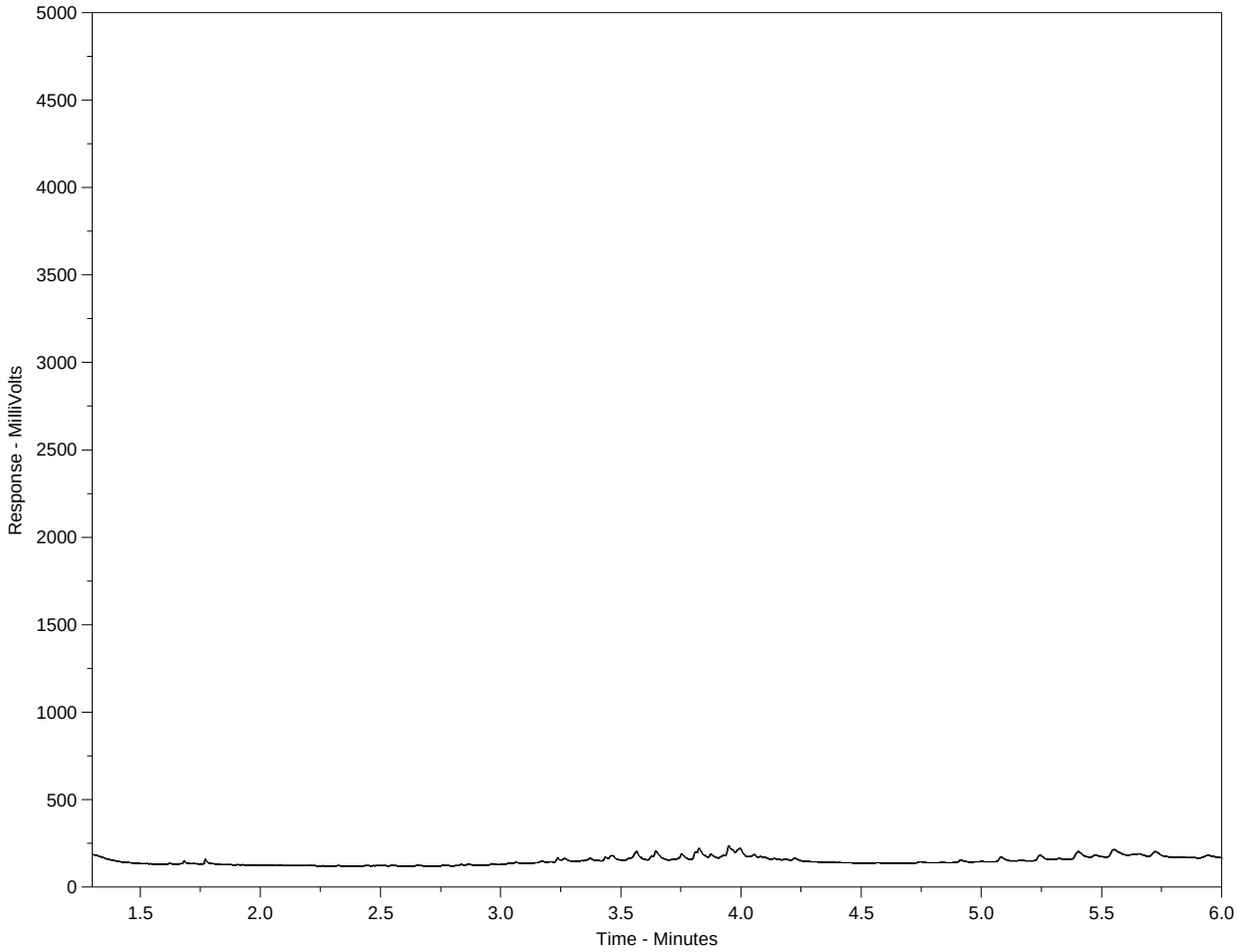
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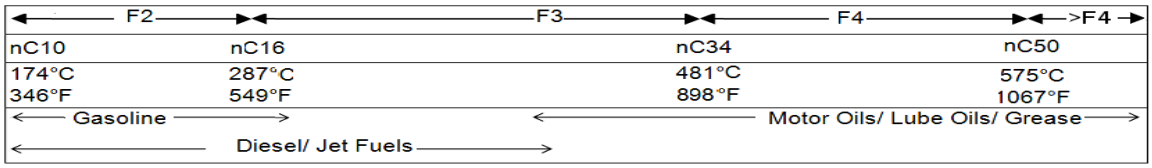
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2491764-11
Client ID: EX-09-11





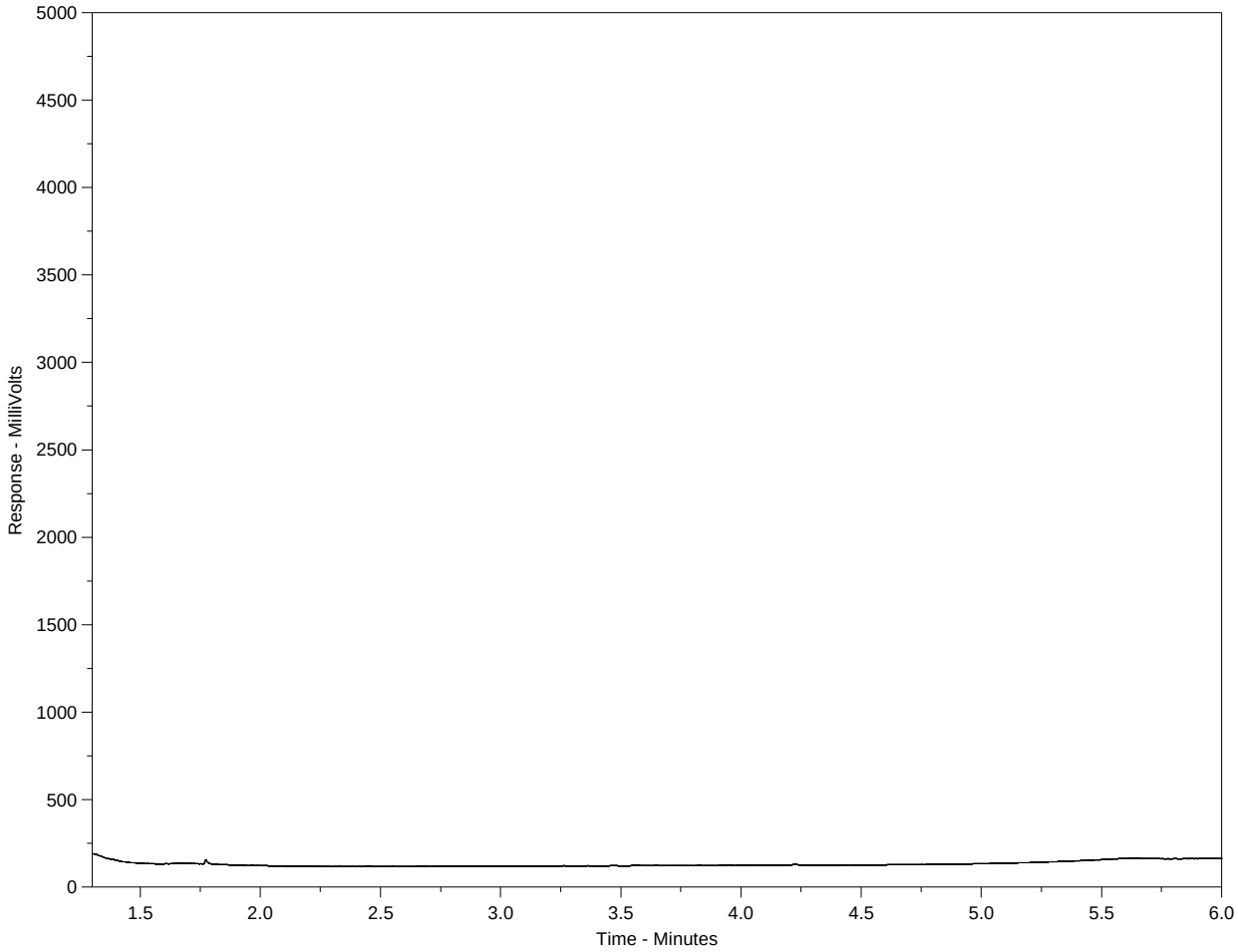
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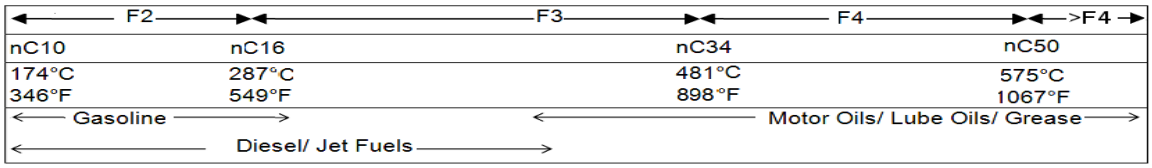
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
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Hydrocarbon Distribution Report

ALS Sample ID: L2491764-12
Client ID: EX-09-14





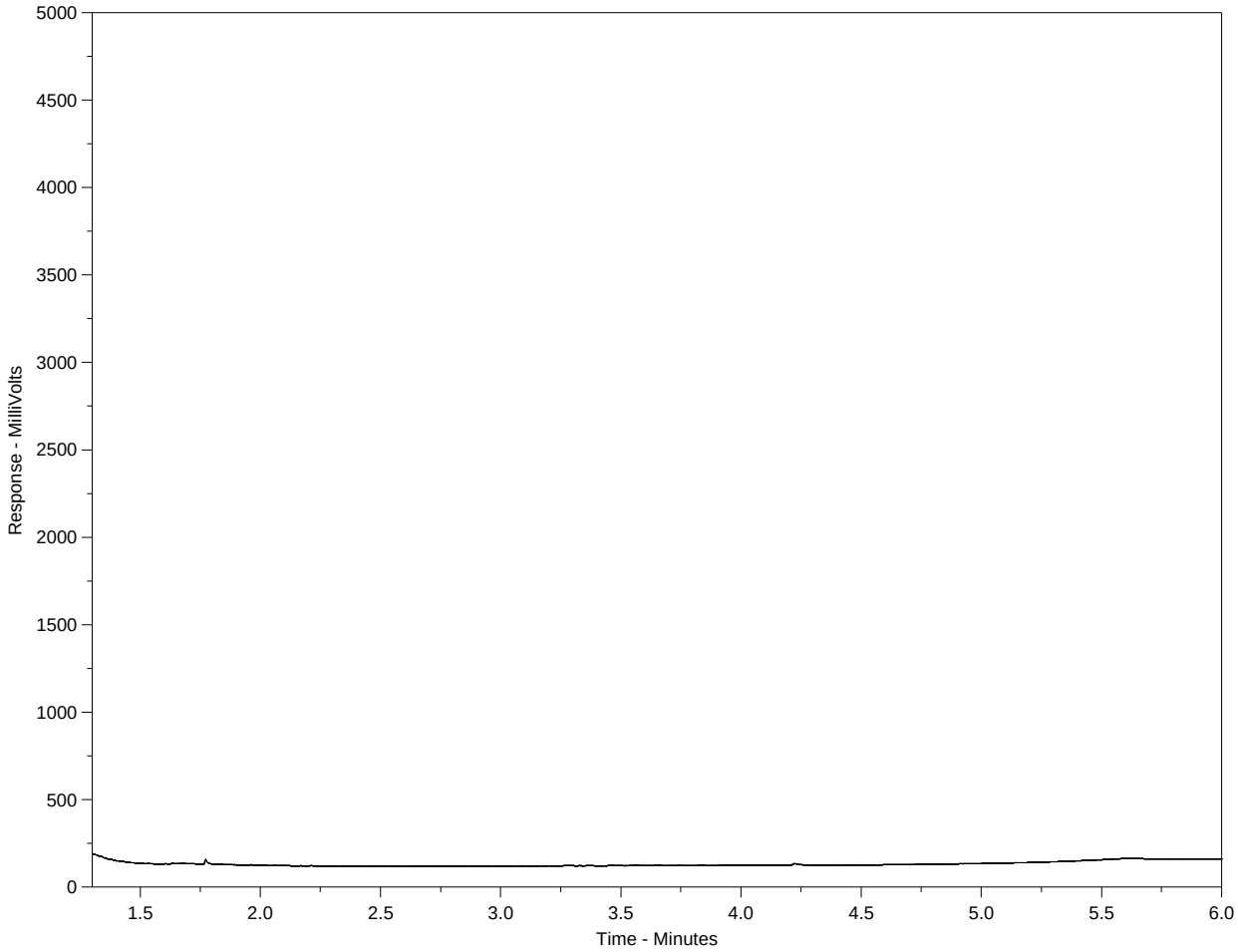
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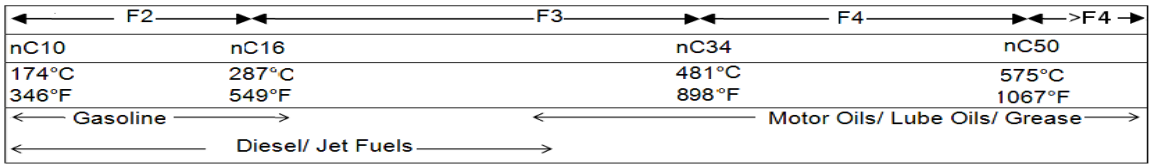
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2491764-13
Client ID: EX-09-07





The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number:

Page 1 of 2

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)

Quality Control (QC) Report with Report ☑ YES ☐ NO

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: k.lewis@mandalayresources.com

Email 2: sfiddler@golder.com

Email 3: jmusijowski@golder.com

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax:

Email 2:

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☑ | Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #: Q80711

Job #: 19136158

PO / AFE:

LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#

Major/Minor Code: Routing Code:

Requisitioner:

Location:

ALS Lab Work Order # (lab use only): L2491764

ALS Contact: Oliver Gregg Sampler: R. Boyce

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	EX-10-01	15-Aug-20		Soil	3	X		
	EX-10-04					X		
	EX-10-09					X		
	EX-10-06					X		
	EX-10-08					X		
	EX-09-01					X		
	EX-09-09					X		
	EX-09-06					X		
	EX-09-09-D					X		
	EX-09-12					X		
	EX-09-11					X		
	EX-09-14					X		

L2491764-COFC

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human consumption/ use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please upload to EQUIS Code: 2016 EEM – Lupin* Facility Code: 36896427

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
1-4							

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Rebecca Boyce	Date: Aug 19/20	Time: 8:00	Received by:	Date: Aug 20/20	Time: 9:00	Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCT 2018 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number:

Page 2 of 2

Report To	Contact and company name below will appear on the final report	Report Format / Distribution	Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)
Company:	Lupin Mines Inc.	Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)	Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply
Contact:	Karyn Lewis	Quality Control (QC) Report with Report ☑ YES ☐ NO	PRIORITY (Business Days): 4 day [P4-20%] ☐ / 3 day [P3-25%] ☐ / 2 day [P2-50%] ☐ — EMERGENCY: 1 Business day [E - 100%] ☑ / Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐
Phone:		☐ Compare Results to Criteria on Report - provide details below if box checked	
	Company address below will appear on the final report	Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	
Street:	76 Richmond Street, Suite 330	Email 1 or Fax: k.lewis@mandalayresources.com	Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm
City/Province:	Toronto ON	Email 2: sfiddler@golder.com	For tests that can not be performed according to the service level selected, you will be contacted.
Postal Code:	M5C 1P1	Email 3: jmusijowski@golder.com	
Invoice To	Same as Report To ☑ YES ☐ NO	**Invoice Distribution**	**Analysis Request**
	Copy of Invoice with Report ☑ YES ☐ NO	Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	
Company:		Email 1 or Fax	
Contact:	k.lewis@mandalayresources.com	Email 2	

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:	Q80711	AFE/Cost Center:	PO#
Job #:	19136158	Major/Minor Code:	Routing Code:
PO / AFE:		Requisitioner:	
LSD:		Location:	
ALS Lab Work Order # (lab use only):	L2491764	ALS Contact: Oliver Gregg	Sampler: R. Boyce

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	EX-09-07	16-Aug-20		Soil	3	X		
	EX-09-04	16-Aug-20		Soil	3	X		

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Are samples taken from a Regulated DW System? ☐ YES ☐ NO	Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427
Are samples for human consumption/ use? ☐ YES ☐ NO	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen	☐	SIF Observations	Yes ☐	No	☐
Ice Packs	☑ Ice Cubes ☐	Custody seal intact	Yes ☐	No	☐
Cooling Initiated	☐				

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
1.9							

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Rebecca Boyce	Date: Aug 19/20	Time: 8:00	Received by:	Date: Aug 20/20	Time: 9:00	Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

GOLDER ASSOCIATES LTD
ATTN: Steven Fiddler
16820 107 Ave NW
EDMONTON AB T5P 4C3

Date Received: 20-AUG-20
Report Date: 24-AUG-20 17:59 (MT)
Version: FINAL REV. 2

Client Phone: 780-483-3499

Certificate of Analysis

Lab Work Order #: L2491777

Project P.O. #: NOT SUBMITTED
Job Reference: 19136158
C of C Numbers:
Legal Site Desc:

Minnie Estigoy, Chem. Eng. Tech. DIPL
Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2491777-1 EX-13-08							
Sampled By: R.Boyce on 17-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	17-AUG-20	22-AUG-20	R5183656
Toluene	0.206		0.050	mg/kg	17-AUG-20	22-AUG-20	R5183656
Ethylbenzene	<0.010		0.010	mg/kg	17-AUG-20	22-AUG-20	R5183656
m+p-Xylene	0.050		0.050	mg/kg	17-AUG-20	22-AUG-20	R5183656
o-Xylene	0.062		0.050	mg/kg	17-AUG-20	22-AUG-20	R5183656
Xylenes	0.11		0.10	mg/kg	17-AUG-20	22-AUG-20	R5183656
Surrogate: 1,4-Difluorobenzene (SS)	100.5		70-130	%	17-AUG-20	22-AUG-20	R5183656
Surrogate: 4-Bromofluorobenzene (SS)	110.5		70-130	%	17-AUG-20	22-AUG-20	R5183656
Surrogate: 3,4-Dichlorotoluene (SS)	90.1		70-130	%	17-AUG-20	22-AUG-20	R5183656
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	87.5		70-130	%	21-AUG-20	21-AUG-20	R5196996
Chrom. to baseline at nC50	YES				21-AUG-20	21-AUG-20	R5196996
Prep/Analysis Dates					21-AUG-20	21-AUG-20	R5196996
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		22-AUG-20	
F1-BTEX	<10		10	mg/kg		22-AUG-20	
F2 (C10-C16)	25		20	mg/kg		22-AUG-20	
F3 (C16-C34)	404		20	mg/kg		22-AUG-20	
F4 (C34-C50)	239		20	mg/kg		22-AUG-20	
Total Hydrocarbons (C6-C50)	668		20	mg/kg		22-AUG-20	
Miscellaneous Parameters							
% Moisture	8.85		0.25	%		21-AUG-20	R5196418
L2491777-2 EX-13-09							
Sampled By: R.Boyce on 17-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	17-AUG-20	22-AUG-20	R5183656
Toluene	0.140		0.050	mg/kg	17-AUG-20	22-AUG-20	R5183656
Ethylbenzene	<0.010		0.010	mg/kg	17-AUG-20	22-AUG-20	R5183656
m+p-Xylene	<0.050		0.050	mg/kg	17-AUG-20	22-AUG-20	R5183656
o-Xylene	<0.050		0.050	mg/kg	17-AUG-20	22-AUG-20	R5183656
Xylenes	<0.10		0.10	mg/kg	17-AUG-20	22-AUG-20	R5183656
Surrogate: 1,4-Difluorobenzene (SS)	81.1		70-130	%	17-AUG-20	22-AUG-20	R5183656
Surrogate: 4-Bromofluorobenzene (SS)	80.7		70-130	%	17-AUG-20	22-AUG-20	R5183656
Surrogate: 3,4-Dichlorotoluene (SS)	78.9		70-130	%	17-AUG-20	22-AUG-20	R5183656
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	92.4		70-130	%	21-AUG-20	21-AUG-20	R5196996
Chrom. to baseline at nC50	YES				21-AUG-20	21-AUG-20	R5196996
Prep/Analysis Dates					21-AUG-20	21-AUG-20	R5196996
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		22-AUG-20	
F1-BTEX	<10		10	mg/kg		22-AUG-20	
F2 (C10-C16)	<20		20	mg/kg		22-AUG-20	
F3 (C16-C34)	30		20	mg/kg		22-AUG-20	
F4 (C34-C50)	<20		20	mg/kg		22-AUG-20	
Total Hydrocarbons (C6-C50)	30		20	mg/kg		22-AUG-20	
Miscellaneous Parameters							
% Moisture	11.4		0.25	%		21-AUG-20	R5196418

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2491777-3 EX-13-04							
Sampled By: R.Boyce on 17-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.0324		0.0050	mg/kg	17-AUG-20	22-AUG-20	R5183656
Toluene	1.30		0.050	mg/kg	17-AUG-20	22-AUG-20	R5183656
Ethylbenzene	0.046		0.010	mg/kg	17-AUG-20	22-AUG-20	R5183656
m+p-Xylene	0.111		0.050	mg/kg	17-AUG-20	22-AUG-20	R5183656
o-Xylene	0.067		0.050	mg/kg	17-AUG-20	22-AUG-20	R5183656
Xylenes	0.18		0.10	mg/kg	17-AUG-20	22-AUG-20	R5183656
Surrogate: 1,4-Difluorobenzene (SS)	94.0		70-130	%	17-AUG-20	22-AUG-20	R5183656
Surrogate: 4-Bromofluorobenzene (SS)	98.8		70-130	%	17-AUG-20	22-AUG-20	R5183656
Surrogate: 3,4-Dichlorotoluene (SS)	79.2		70-130	%	17-AUG-20	22-AUG-20	R5183656
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	91.8		70-130	%	21-AUG-20	21-AUG-20	R5196996
Chrom. to baseline at nC50	NO				21-AUG-20	21-AUG-20	R5196996
Prep/Analysis Dates					21-AUG-20	21-AUG-20	R5196996
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		22-AUG-20	
F1-BTEX	<10		10	mg/kg		22-AUG-20	
F2 (C10-C16)	33		20	mg/kg		22-AUG-20	
F3 (C16-C34)	455		20	mg/kg		22-AUG-20	
F4 (C34-C50)	149		20	mg/kg		22-AUG-20	
F4G-SG (GHH-Silica)	770		500	mg/kg		22-AUG-20	
Total Hydrocarbons (C6-C50)	637		20	mg/kg		22-AUG-20	
Miscellaneous Parameters							
% Moisture	7.62		0.25	%		21-AUG-20	R5196418
F4G Prep/Analysis Dates					21-AUG-20	22-AUG-20	R5197377
L2491777-4 EX-13-05							
Sampled By: R.Boyce on 17-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.0077		0.0050	mg/kg	17-AUG-20	22-AUG-20	R5191942
Toluene	0.398		0.050	mg/kg	17-AUG-20	22-AUG-20	R5191942
Ethylbenzene	0.014		0.010	mg/kg	17-AUG-20	22-AUG-20	R5191942
m+p-Xylene	<0.050		0.050	mg/kg	17-AUG-20	22-AUG-20	R5191942
o-Xylene	<0.050		0.050	mg/kg	17-AUG-20	22-AUG-20	R5191942
Xylenes	<0.10		0.10	mg/kg	17-AUG-20	22-AUG-20	R5191942
Surrogate: 1,4-Difluorobenzene (SS)	80.2		70-130	%	17-AUG-20	22-AUG-20	R5191942
Surrogate: 4-Bromofluorobenzene (SS)	85.8		70-130	%	17-AUG-20	22-AUG-20	R5191942
Surrogate: 3,4-Dichlorotoluene (SS)	88.2		70-130	%	17-AUG-20	22-AUG-20	R5191942
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	91.9		70-130	%	21-AUG-20	21-AUG-20	R5197025
Chrom. to baseline at nC50	NO				21-AUG-20	21-AUG-20	R5197025
Prep/Analysis Dates					21-AUG-20	21-AUG-20	R5197025
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		22-AUG-20	
F1-BTEX	<10		10	mg/kg		22-AUG-20	
F2 (C10-C16)	301		20	mg/kg		22-AUG-20	
F3 (C16-C34)	620		20	mg/kg		22-AUG-20	
F4 (C34-C50)	258		20	mg/kg		22-AUG-20	
F4G-SG (GHH-Silica)	820		500	mg/kg		22-AUG-20	
Total Hydrocarbons (C6-C50)	1180		20	mg/kg		22-AUG-20	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2491777-4 EX-13-05							
Sampled By: R.Boyce on 17-AUG-20							
Matrix: SOIL							
Miscellaneous Parameters							
% Moisture	8.06		0.25	%		21-AUG-20	R5196356
F4G Prep/Analysis Dates					21-AUG-20	22-AUG-20	R5197377
L2491777-5 EX-13-02							
Sampled By: R.Boyce on 17-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.0108		0.0050	mg/kg	17-AUG-20	22-AUG-20	R5191942
Toluene	0.489		0.050	mg/kg	17-AUG-20	22-AUG-20	R5191942
Ethylbenzene	0.011		0.010	mg/kg	17-AUG-20	22-AUG-20	R5191942
m+p-Xylene	<0.050		0.050	mg/kg	17-AUG-20	22-AUG-20	R5191942
o-Xylene	<0.050		0.050	mg/kg	17-AUG-20	22-AUG-20	R5191942
Xylenes	<0.10		0.10	mg/kg	17-AUG-20	22-AUG-20	R5191942
Surrogate: 1,4-Difluorobenzene (SS)	82.4		70-130	%	17-AUG-20	22-AUG-20	R5191942
Surrogate: 4-Bromofluorobenzene (SS)	106.3		70-130	%	17-AUG-20	22-AUG-20	R5191942
Surrogate: 3,4-Dichlorotoluene (SS)	74.5		70-130	%	17-AUG-20	22-AUG-20	R5191942
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	93.0		70-130	%	21-AUG-20	21-AUG-20	R5197025
Chrom. to baseline at nC50	NO				21-AUG-20	21-AUG-20	R5197025
Prep/Analysis Dates					21-AUG-20	21-AUG-20	R5197025
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		22-AUG-20	
F1-BTEX	<10		10	mg/kg		22-AUG-20	
F2 (C10-C16)	126		20	mg/kg		22-AUG-20	
F3 (C16-C34)	854		20	mg/kg		22-AUG-20	
F4 (C34-C50)	281		20	mg/kg		22-AUG-20	
F4G-SG (GHH-Silica)	1330		500	mg/kg		22-AUG-20	
Total Hydrocarbons (C6-C50)	1260		20	mg/kg		22-AUG-20	
Miscellaneous Parameters							
% Moisture	9.04		0.25	%		21-AUG-20	R5196356
F4G Prep/Analysis Dates					21-AUG-20	22-AUG-20	R5197377
L2491777-6 EX-11-10							
Sampled By: R.Boyce on 17-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	17-AUG-20	22-AUG-20	R5191942
Toluene	0.452		0.050	mg/kg	17-AUG-20	22-AUG-20	R5191942
Ethylbenzene	<0.010		0.010	mg/kg	17-AUG-20	22-AUG-20	R5191942
m+p-Xylene	<0.050		0.050	mg/kg	17-AUG-20	22-AUG-20	R5191942
o-Xylene	<0.050		0.050	mg/kg	17-AUG-20	22-AUG-20	R5191942
Xylenes	<0.10		0.10	mg/kg	17-AUG-20	22-AUG-20	R5191942
Surrogate: 1,4-Difluorobenzene (SS)	93.5		70-130	%	17-AUG-20	22-AUG-20	R5191942
Surrogate: 4-Bromofluorobenzene (SS)	102.7		70-130	%	17-AUG-20	22-AUG-20	R5191942
Surrogate: 3,4-Dichlorotoluene (SS)	103.9		70-130	%	17-AUG-20	22-AUG-20	R5191942
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	114.6		70-130	%	21-AUG-20	21-AUG-20	R5197025
Chrom. to baseline at nC50	YES				21-AUG-20	21-AUG-20	R5197025
Prep/Analysis Dates					21-AUG-20	21-AUG-20	R5197025
CCME Total Hydrocarbons							
F1 (C6-C10)	112		10	mg/kg		22-AUG-20	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2491777-6 EX-11-10							
Sampled By: R.Boyce on 17-AUG-20							
Matrix: SOIL							
CCME Total Hydrocarbons							
F1-BTEX	112		10	mg/kg		22-AUG-20	
F2 (C10-C16)	2410		20	mg/kg		22-AUG-20	
F3 (C16-C34)	353		20	mg/kg		22-AUG-20	
F4 (C34-C50)	42		20	mg/kg		22-AUG-20	
Total Hydrocarbons (C6-C50)	2920		20	mg/kg		22-AUG-20	
Miscellaneous Parameters							
% Moisture	9.62		0.25	%		21-AUG-20	R5196356
L2491777-7 EX-11-11							
Sampled By: R.Boyce on 17-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	17-AUG-20	22-AUG-20	R5191942
Toluene	1.26		0.050	mg/kg	17-AUG-20	22-AUG-20	R5191942
Ethylbenzene	<0.010		0.010	mg/kg	17-AUG-20	22-AUG-20	R5191942
m+p-Xylene	<0.050		0.050	mg/kg	17-AUG-20	22-AUG-20	R5191942
o-Xylene	<0.050		0.050	mg/kg	17-AUG-20	22-AUG-20	R5191942
Xylenes	<0.10		0.10	mg/kg	17-AUG-20	22-AUG-20	R5191942
Surrogate: 1,4-Difluorobenzene (SS)	96.8		70-130	%	17-AUG-20	22-AUG-20	R5191942
Surrogate: 4-Bromofluorobenzene (SS)	119.6		70-130	%	17-AUG-20	22-AUG-20	R5191942
Surrogate: 3,4-Dichlorotoluene (SS)	83.3		70-130	%	17-AUG-20	22-AUG-20	R5191942
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	93.5		70-130	%	21-AUG-20	21-AUG-20	R5197025
Chrom. to baseline at nC50	YES				21-AUG-20	21-AUG-20	R5197025
Prep/Analysis Dates					21-AUG-20	21-AUG-20	R5197025
CCME Total Hydrocarbons							
F1 (C6-C10)	28		10	mg/kg		22-AUG-20	
F1-BTEX	27		10	mg/kg		22-AUG-20	
F2 (C10-C16)	547		20	mg/kg		22-AUG-20	
F3 (C16-C34)	85		20	mg/kg		22-AUG-20	
F4 (C34-C50)	<20		20	mg/kg		22-AUG-20	
Total Hydrocarbons (C6-C50)	660		20	mg/kg		22-AUG-20	
Miscellaneous Parameters							
% Moisture	3.53		0.25	%		21-AUG-20	R5196356
L2491777-8 EX-11-13							
Sampled By: R.Boyce on 17-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.0139		0.0050	mg/kg	17-AUG-20	22-AUG-20	R5191942
Toluene	0.306		0.050	mg/kg	17-AUG-20	22-AUG-20	R5191942
Ethylbenzene	0.017		0.010	mg/kg	17-AUG-20	22-AUG-20	R5191942
m+p-Xylene	<0.050		0.050	mg/kg	17-AUG-20	22-AUG-20	R5191942
o-Xylene	<0.050		0.050	mg/kg	17-AUG-20	22-AUG-20	R5191942
Xylenes	<0.10		0.10	mg/kg	17-AUG-20	22-AUG-20	R5191942
Surrogate: 1,4-Difluorobenzene (SS)	91.5		70-130	%	17-AUG-20	22-AUG-20	R5191942
Surrogate: 4-Bromofluorobenzene (SS)	96.1		70-130	%	17-AUG-20	22-AUG-20	R5191942
Surrogate: 3,4-Dichlorotoluene (SS)	72.9		70-130	%	17-AUG-20	22-AUG-20	R5191942
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	96.9		70-130	%	21-AUG-20	21-AUG-20	R5197025
Chrom. to baseline at nC50	YES				21-AUG-20	21-AUG-20	R5197025

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2491777-8 EX-11-13							
Sampled By: R.Boyce on 17-AUG-20							
Matrix: SOIL							
CCME Total Extractable Hydrocarbons							
Prep/Analysis Dates					21-AUG-20	21-AUG-20	R5197025
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		22-AUG-20	
F1-BTEX	<10		10	mg/kg		22-AUG-20	
F2 (C10-C16)	215		20	mg/kg		22-AUG-20	
F3 (C16-C34)	120		20	mg/kg		22-AUG-20	
F4 (C34-C50)	25		20	mg/kg		22-AUG-20	
Total Hydrocarbons (C6-C50)	360		20	mg/kg		22-AUG-20	
Miscellaneous Parameters							
% Moisture	10.6		0.25	%		21-AUG-20	R5196356
L2491777-9 EX-11-08							
Sampled By: R.Boyce on 17-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	17-AUG-20	22-AUG-20	R5191942
Toluene	<0.050		0.050	mg/kg	17-AUG-20	22-AUG-20	R5191942
Ethylbenzene	<0.010		0.010	mg/kg	17-AUG-20	22-AUG-20	R5191942
m+p-Xylene	<0.050		0.050	mg/kg	17-AUG-20	22-AUG-20	R5191942
o-Xylene	<0.050		0.050	mg/kg	17-AUG-20	22-AUG-20	R5191942
Xylenes	<0.10		0.10	mg/kg	17-AUG-20	22-AUG-20	R5191942
Surrogate: 1,4-Difluorobenzene (SS)	86.1		70-130	%	17-AUG-20	22-AUG-20	R5191942
Surrogate: 4-Bromofluorobenzene (SS)	107.6		70-130	%	17-AUG-20	22-AUG-20	R5191942
Surrogate: 3,4-Dichlorotoluene (SS)	74.4		70-130	%	17-AUG-20	22-AUG-20	R5191942
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	91.3		70-130	%	21-AUG-20	21-AUG-20	R5197025
Chrom. to baseline at nC50	NO				21-AUG-20	21-AUG-20	R5197025
Prep/Analysis Dates					21-AUG-20	21-AUG-20	R5197025
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		22-AUG-20	
F1-BTEX	<10		10	mg/kg		22-AUG-20	
F2 (C10-C16)	284		20	mg/kg		22-AUG-20	
F3 (C16-C34)	454		20	mg/kg		22-AUG-20	
F4 (C34-C50)	258		20	mg/kg		22-AUG-20	
F4G-SG (GHH-Silica)	720		500	mg/kg		22-AUG-20	
Total Hydrocarbons (C6-C50)	996		20	mg/kg		22-AUG-20	
Miscellaneous Parameters							
% Moisture	6.88		0.25	%		21-AUG-20	R5196356
F4G Prep/Analysis Dates					21-AUG-20	22-AUG-20	R5197377
L2491777-10 EX-11-01							
Sampled By: R.Boyce on 17-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.0256		0.0050	mg/kg	17-AUG-20	22-AUG-20	R5191942
Toluene	0.553		0.050	mg/kg	17-AUG-20	22-AUG-20	R5191942
Ethylbenzene	0.014		0.010	mg/kg	17-AUG-20	22-AUG-20	R5191942
m+p-Xylene	<0.050		0.050	mg/kg	17-AUG-20	22-AUG-20	R5191942
o-Xylene	<0.050		0.050	mg/kg	17-AUG-20	22-AUG-20	R5191942
Xylenes	<0.10		0.10	mg/kg	17-AUG-20	22-AUG-20	R5191942
Surrogate: 1,4-Difluorobenzene (SS)	83.2		70-130	%	17-AUG-20	22-AUG-20	R5191942

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2491777-10 EX-11-01							
Sampled By: R.Boyce on 17-AUG-20							
Matrix: SOIL							
BTEX and F1							
Surrogate: 4-Bromofluorobenzene (SS)	94.9		70-130	%	17-AUG-20	22-AUG-20	R5191942
Surrogate: 3,4-Dichlorotoluene (SS)	80.4		70-130	%	17-AUG-20	22-AUG-20	R5191942
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	90.7		70-130	%	21-AUG-20	21-AUG-20	R5197025
Chrom. to baseline at nC50	YES				21-AUG-20	21-AUG-20	R5197025
Prep/Analysis Dates					21-AUG-20	21-AUG-20	R5197025
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		22-AUG-20	
F1-BTEX	<10		10	mg/kg		22-AUG-20	
F2 (C10-C16)	24		20	mg/kg		22-AUG-20	
F3 (C16-C34)	119		20	mg/kg		22-AUG-20	
F4 (C34-C50)	31		20	mg/kg		22-AUG-20	
Total Hydrocarbons (C6-C50)	174		20	mg/kg		22-AUG-20	
Miscellaneous Parameters							
% Moisture	7.16		0.25	%		21-AUG-20	R5196356
L2491777-11 EX-11-04							
Sampled By: R.Boyce on 17-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	17-AUG-20	22-AUG-20	R5191942
Toluene	0.776		0.050	mg/kg	17-AUG-20	22-AUG-20	R5191942
Ethylbenzene	<0.010		0.010	mg/kg	17-AUG-20	22-AUG-20	R5191942
m+p-Xylene	<0.050		0.050	mg/kg	17-AUG-20	22-AUG-20	R5191942
o-Xylene	<0.050		0.050	mg/kg	17-AUG-20	22-AUG-20	R5191942
Xylenes	<0.10		0.10	mg/kg	17-AUG-20	22-AUG-20	R5191942
Surrogate: 1,4-Difluorobenzene (SS)	83.1		70-130	%	17-AUG-20	22-AUG-20	R5191942
Surrogate: 4-Bromofluorobenzene (SS)	100.4		70-130	%	17-AUG-20	22-AUG-20	R5191942
Surrogate: 3,4-Dichlorotoluene (SS)	82.0		70-130	%	17-AUG-20	22-AUG-20	R5191942
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	91.0		70-130	%	21-AUG-20	21-AUG-20	R5197025
Chrom. to baseline at nC50	NO				21-AUG-20	21-AUG-20	R5197025
Prep/Analysis Dates					21-AUG-20	21-AUG-20	R5197025
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		22-AUG-20	
F1-BTEX	<10		10	mg/kg		22-AUG-20	
F2 (C10-C16)	320		20	mg/kg		22-AUG-20	
F3 (C16-C34)	634		20	mg/kg		22-AUG-20	
F4 (C34-C50)	231		20	mg/kg		22-AUG-20	
F4G-SG (GHH-Silica)	810		500	mg/kg		22-AUG-20	
Total Hydrocarbons (C6-C50)	1190		20	mg/kg		22-AUG-20	
Miscellaneous Parameters							
% Moisture	7.96		0.25	%		21-AUG-20	R5196356
F4G Prep/Analysis Dates					21-AUG-20	22-AUG-20	R5197377

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Qualifiers for Individual Samples Listed:

Lab Sample ID	Client Sample ID	Qualifier	Description
L2491777-9	EX-11-08	VOCJ	BTXS,F1-MEOH-ED USED JAR - Soil jar was submitted as VOC sample container. VOC results may be biased low, and do not meet federal (CCME) or provincial requirements (for BC, AB-Tier1, MB, ON, SK).

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BTXS,F1-MEOH-ED	Soil	BTEX and F1	EPA 8260C/5021A and CWS PHC Tier 1

This analysis involves the extraction of a subsample of the sediment/soil with methanol added in the field at the time of subsampling. The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. BTX Target compound concentrations are measured using mass spectrometry detection. The instrumental portion of F1 analysis is carried out in accordance with the Canada Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method (2001).

ETL-TVH,TEH-CCME-ED	Soil	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F2-4-TMB-ED	Soil	CCME Total Extractable Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

This analysis is carried out in accordance with the "Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method, Canadian Council of Ministers of the Environment" For C10 to C50 hydrocarbons (F2, F3, F4) and gravimetric heavy hydrocarbons (F4G-sg), a subsample of the sediment/soil is extracted with 1:1 hexane:acetone using a rotary extractor. The extract undergoes a silica-gel clean-up to remove polar compounds. F2, F3 & F4 are analyzed by on-column GC/FID, and F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where F4 (C34-C50) and F4G-sg results are reported for a sample, the larger of the reported values is used for comparison against the relevant CCME standard for F4.
7. The gravimetric heavy hydrocarbon results (F4G-sg), cannot be added to the C6 to C50 hydrocarbon results.
8. This method is validated for use.
9. Data from analysis of quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram.

F4G-TMB-ED	Soil	CCME Gravimetric Heavy Hydrocarbons (SG)	CCME CWS-PHC, Pub #1310, Dec 2001
PREP-MOISTURE-ED	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)

The weighed portion of soil is placed in a 105°C oven to dry to a constant weight; the drying time will vary based on the moisture content of the soil. The dried soil weight is then used to calculate % moisture.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

Laboratory Definition Code	Laboratory Location
ED	ALS ENVIRONMENTAL - EDMONTON, ALBERTA, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Client: GOLDER ASSOCIATES LTD
16820 107 Ave NW
EDMONTON AB T5P 4C3
Contact: Steven Fiddler

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTXS,F1-MEOH-ED	**Soil**							
Batch R5183656								
WG3388507-2 LCS								
Benzene			84.1		%		70-130	22-AUG-20
Toluene			87.4		%		70-130	22-AUG-20
Ethylbenzene			97.0		%		70-130	22-AUG-20
m+p-Xylene			99.2		%		70-130	22-AUG-20
o-Xylene			101.8		%		70-130	22-AUG-20
WG3388507-1 MB								
Benzene			<0.0050		mg/kg		0.005	22-AUG-20
Toluene			<0.050		mg/kg		0.05	22-AUG-20
Ethylbenzene			<0.010		mg/kg		0.01	22-AUG-20
m+p-Xylene			<0.050		mg/kg		0.05	22-AUG-20
o-Xylene			<0.050		mg/kg		0.05	22-AUG-20
Surrogate: 1,4-Difluorobenzene (SS)			85.6		%		70-130	22-AUG-20
Surrogate: 4-Bromofluorobenzene (SS)			72.8		%		70-130	22-AUG-20
Surrogate: 3,4-Dichlorotoluene (SS)			93.1		%		70-130	22-AUG-20
WG3388507-5 MS		**L2491777-3**						
Benzene			87.5		%		60-140	22-AUG-20
Toluene			78.8		%		60-140	22-AUG-20
Ethylbenzene			95.4		%		60-140	22-AUG-20
m+p-Xylene			98.7		%		60-140	22-AUG-20
o-Xylene			98.2		%		60-140	22-AUG-20
Batch R5191942								
WG3388534-2 LCS								
Benzene			103.9		%		70-130	22-AUG-20
Toluene			75.8		%		70-130	22-AUG-20
Ethylbenzene			76.3		%		70-130	22-AUG-20
m+p-Xylene			86.2		%		70-130	22-AUG-20
o-Xylene			81.3		%		70-130	22-AUG-20
WG3388534-1 MB								
Benzene			<0.0050		mg/kg		0.005	22-AUG-20
Toluene			<0.050		mg/kg		0.05	22-AUG-20
Ethylbenzene			<0.010		mg/kg		0.01	22-AUG-20
m+p-Xylene			<0.050		mg/kg		0.05	22-AUG-20
o-Xylene			<0.050		mg/kg		0.05	22-AUG-20
Surrogate: 1,4-Difluorobenzene (SS)			93.0		%		70-130	22-AUG-20
Surrogate: 4-Bromofluorobenzene (SS)			71.3		%		70-130	22-AUG-20

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTXS,F1-MEOH-ED	**Soil**							
Batch R5191942								
WG3388534-1 MB								
Surrogate: 3,4-Dichlorotoluene (SS)			88.6		%		70-130	22-AUG-20
F2-4-TMB-ED	**Soil**							
Batch R5196996								
WG3388467-3 IRM		**ALS PHC RM3**						
F2 (C10-C16)			95.3		%		70-130	21-AUG-20
F3 (C16-C34)			99.9		%		70-130	21-AUG-20
F4 (C34-C50)			77.9		%		70-130	21-AUG-20
WG3388467-2 LCS		**DIESEL/MOTOR OIL**						
F2 (C10-C16)			94.8		%		70-130	21-AUG-20
F3 (C16-C34)			101.6		%		70-130	21-AUG-20
F4 (C34-C50)			100.9		%		70-130	21-AUG-20
WG3388467-1 MB								
F2 (C10-C16)			<20		mg/kg		20	21-AUG-20
F3 (C16-C34)			<20		mg/kg		20	21-AUG-20
F4 (C34-C50)			<20		mg/kg		20	21-AUG-20
Surrogate: 2-Bromobenzotrifluoride			88.6		%		70-130	21-AUG-20
Batch R5197025								
WG3388474-3 IRM		**ALS PHC RM3**						
F2 (C10-C16)			103.5		%		70-130	21-AUG-20
F3 (C16-C34)			99.3		%		70-130	21-AUG-20
F4 (C34-C50)			87.0		%		70-130	21-AUG-20
WG3388474-2 LCS		**DIESEL/MOTOR OIL**						
F2 (C10-C16)			102.5		%		70-130	21-AUG-20
F3 (C16-C34)			98.6		%		70-130	21-AUG-20
F4 (C34-C50)			101.8		%		70-130	21-AUG-20
WG3388474-1 MB								
F2 (C10-C16)			<20		mg/kg		20	21-AUG-20
F3 (C16-C34)			<20		mg/kg		20	21-AUG-20
F4 (C34-C50)			<20		mg/kg		20	21-AUG-20
Surrogate: 2-Bromobenzotrifluoride			88.5		%		70-130	21-AUG-20
F4G-TMB-ED	**Soil**							
Batch R5197377								
WG3389263-3 IRM		**ALS PHC RM3**						
Gravimetric Heavy Hydrocarbons (Silica)			118.0		%		70-130	22-AUG-20
WG3389263-2 LCS		**DIESEL / MOTOR OIL**						

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F4G-TMB-ED	**Soil**							
Batch R5197377								
WG3389263-2 LCS		**DIESEL / MOTOR OIL**						
Gravimetric Heavy Hydrocarbons (Silica)			85.7		%		70-130	22-AUG-20
WG3389263-1 MB								
Gravimetric Heavy Hydrocarbons (Silica)			<500		mg/kg		500	22-AUG-20
PREP-MOISTURE-ED	**Soil**							
Batch R5196356								
WG3388570-3 DUP		**L2491777-5**						
% Moisture		9.04	9.14		%	1.1	20	21-AUG-20
WG3388570-2 LCS								
% Moisture			101.0		%		90-110	21-AUG-20
WG3388570-1 MB								
% Moisture			<0.25		%		0.25	21-AUG-20
Batch R5196418								
WG3388512-2 LCS								
% Moisture			101.0		%		90-110	21-AUG-20
WG3388512-1 MB								
% Moisture			<0.25		%		0.25	21-AUG-20

Quality Control Report

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

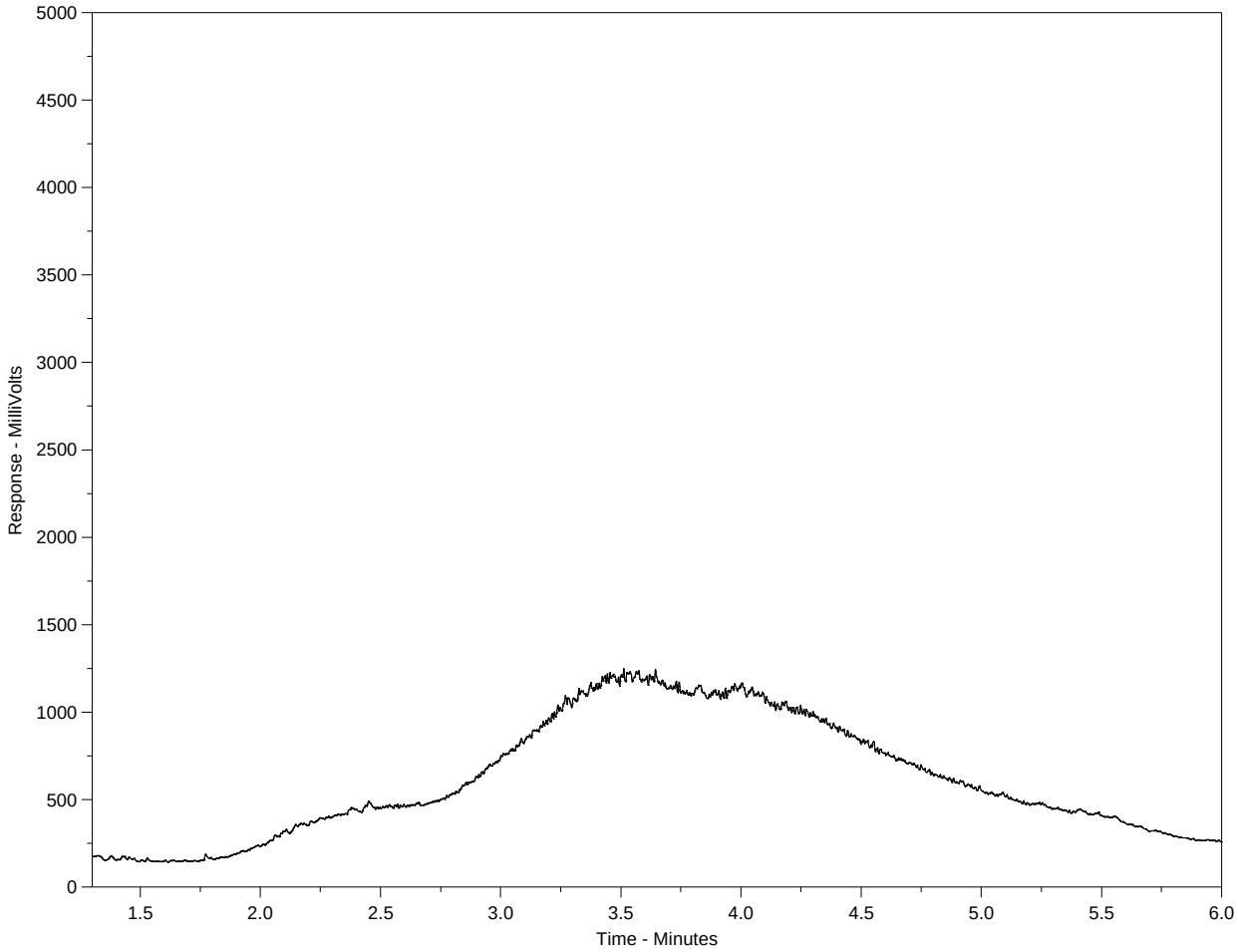
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

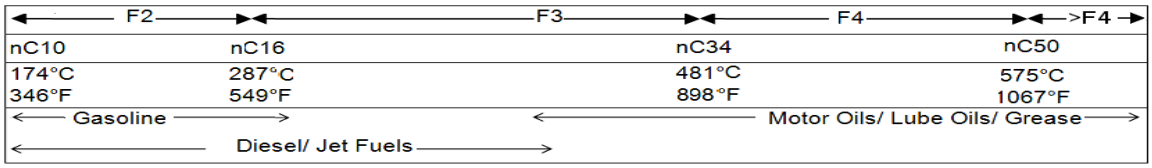
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

Hydrocarbon Distribution Report

ALS Sample ID: L2491777-1
Client ID: EX-13-08





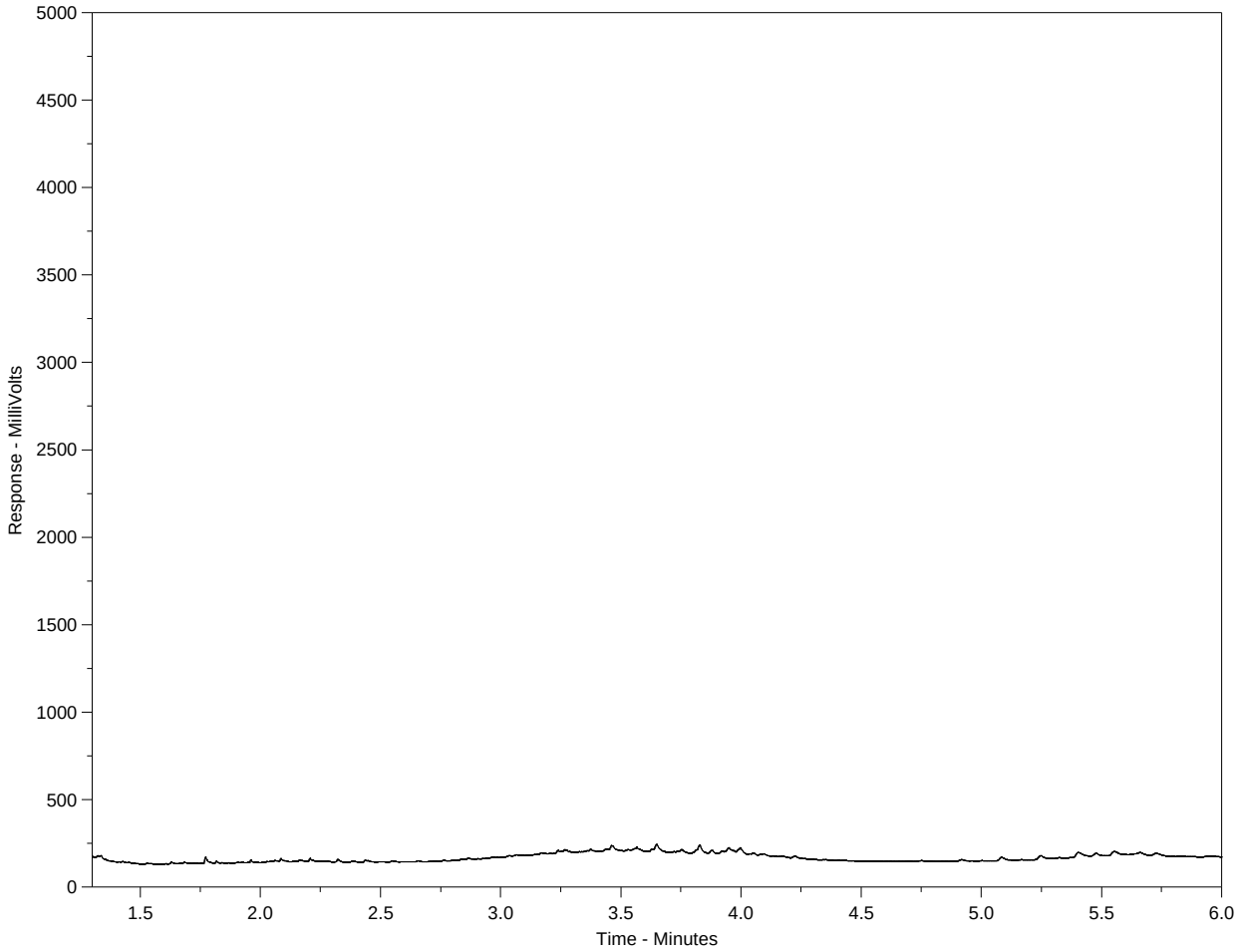
The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

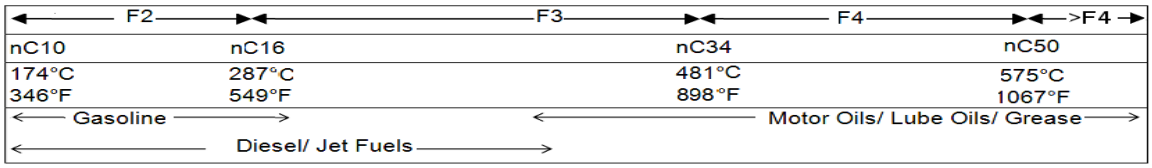
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2491777-2
Client ID: EX-13-09





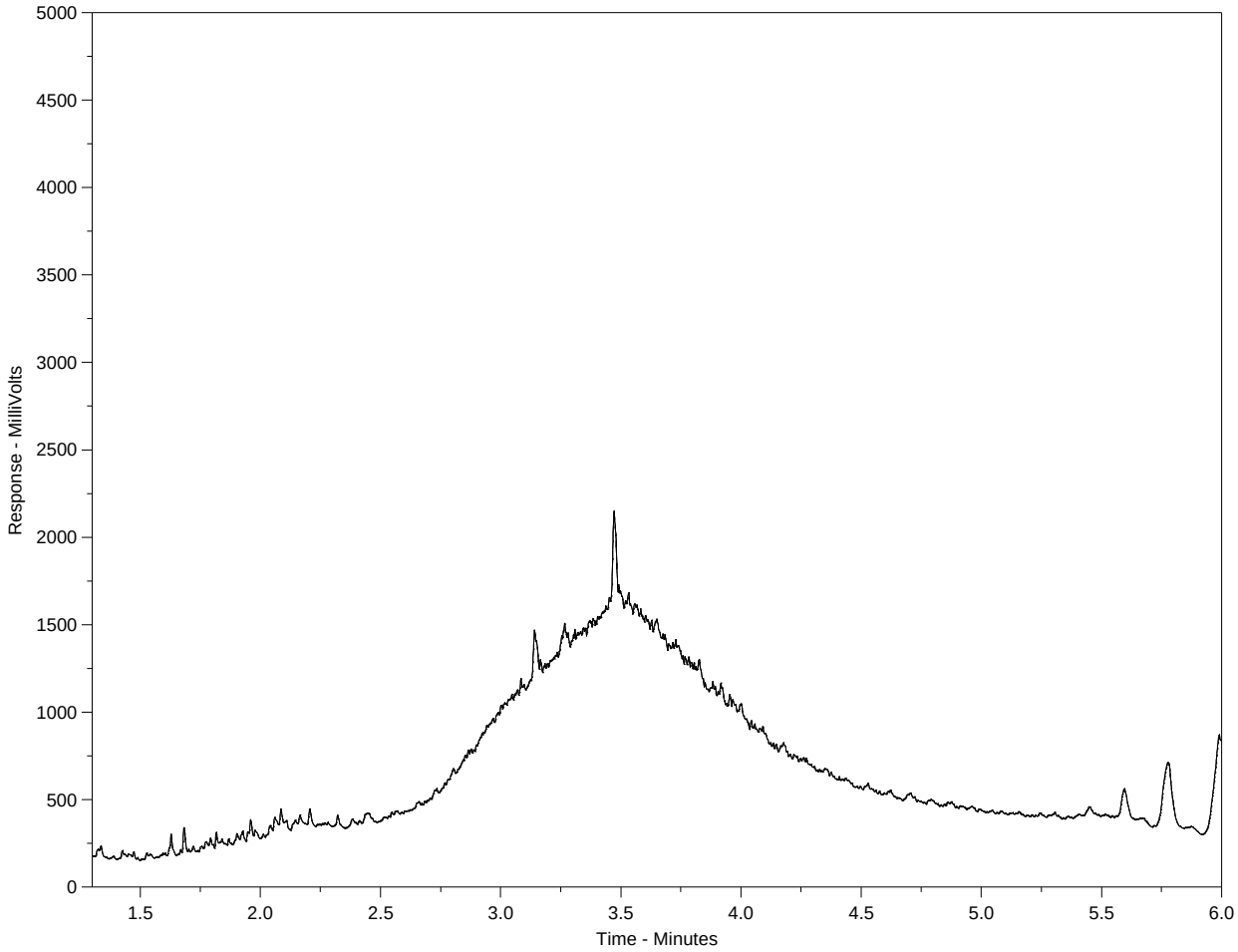
The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

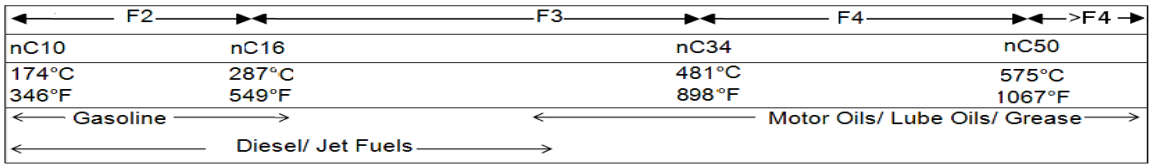
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2491777-3
Client ID: EX-13-04





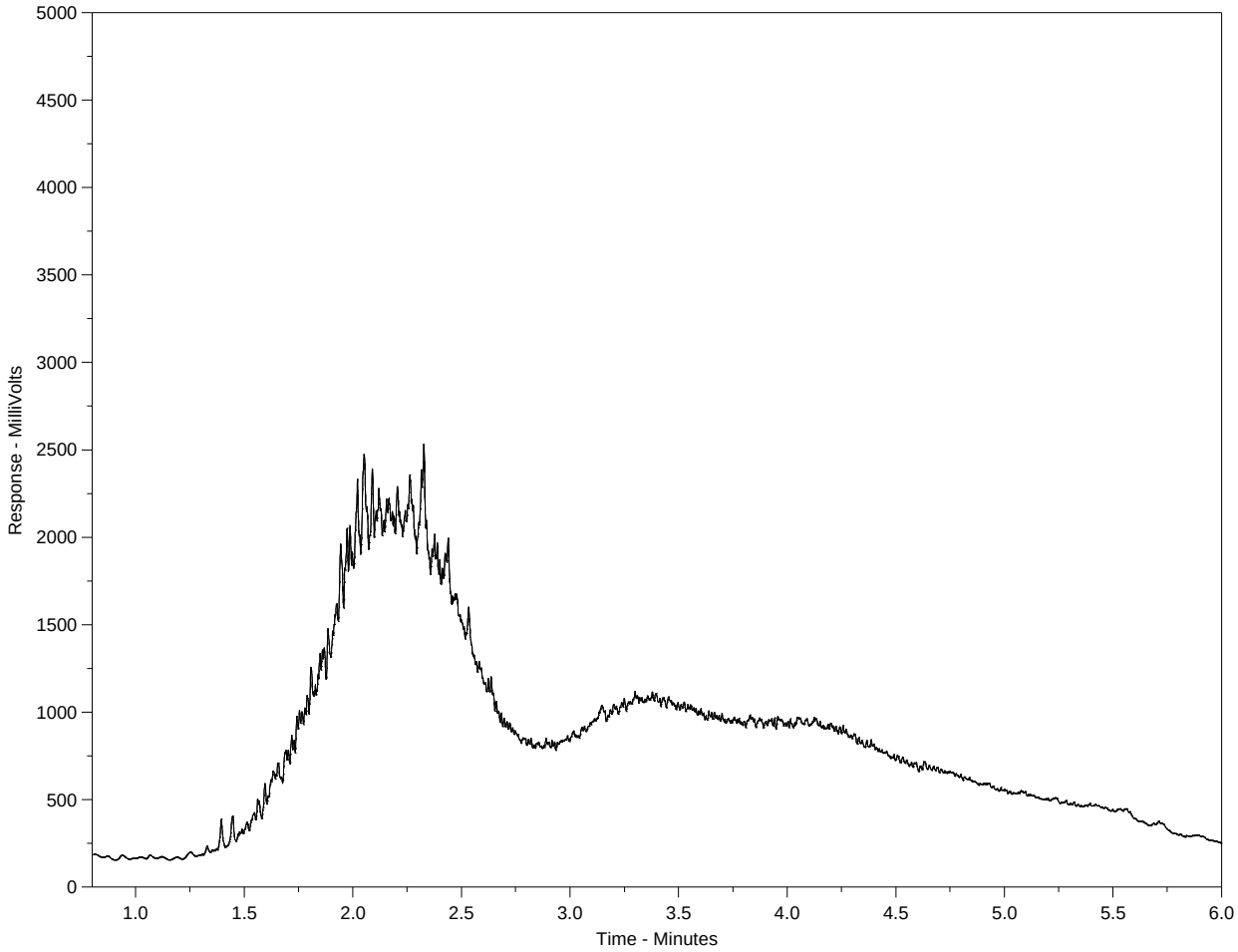
The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

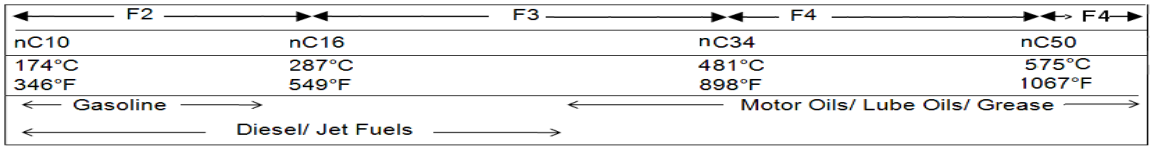
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2491777-4
Client ID: EX-13-05





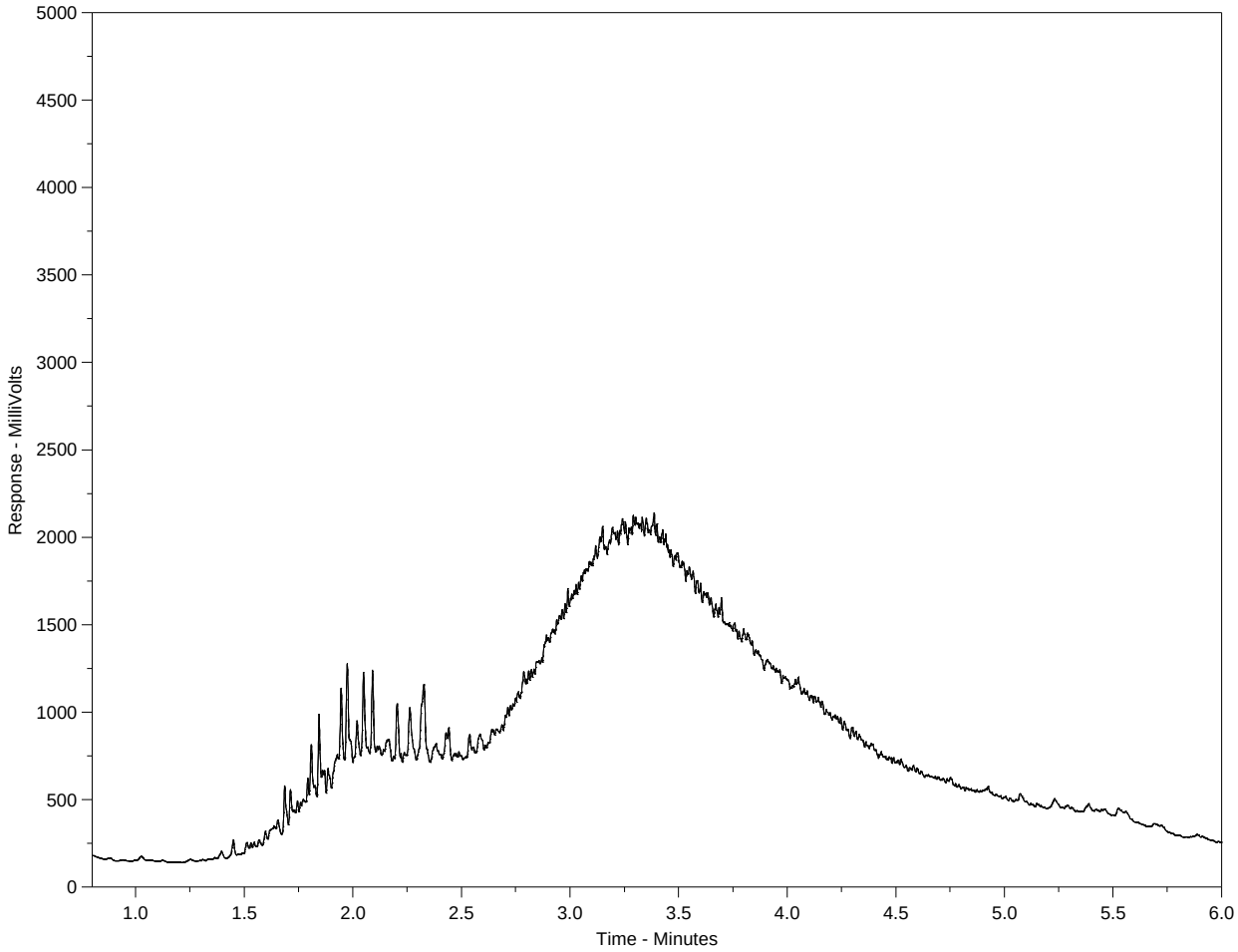
The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

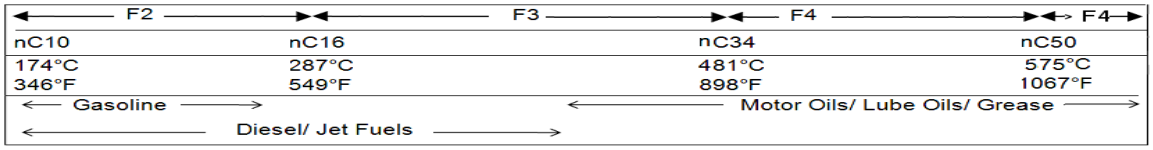
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2491777-5
Client ID: EX-13-02





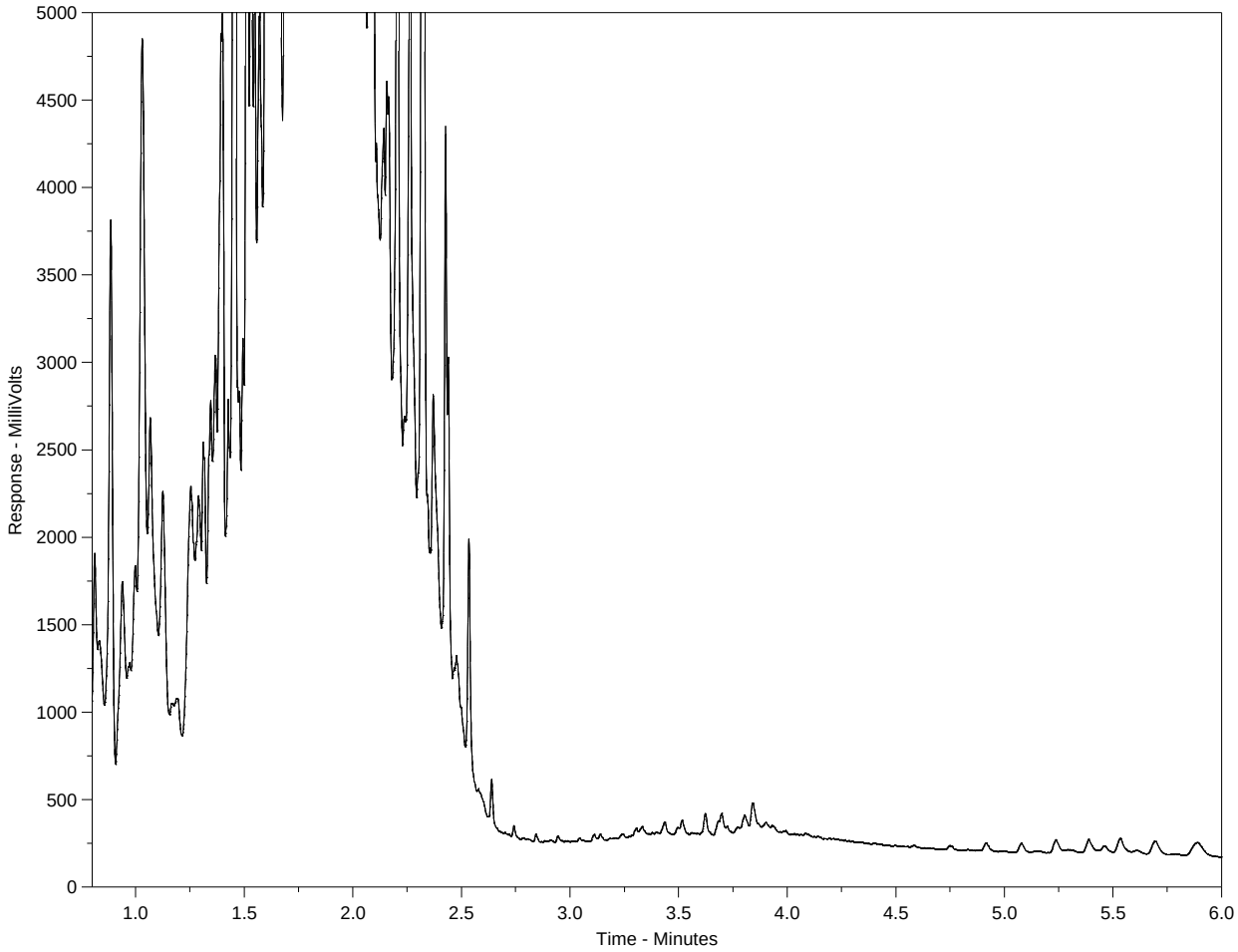
The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

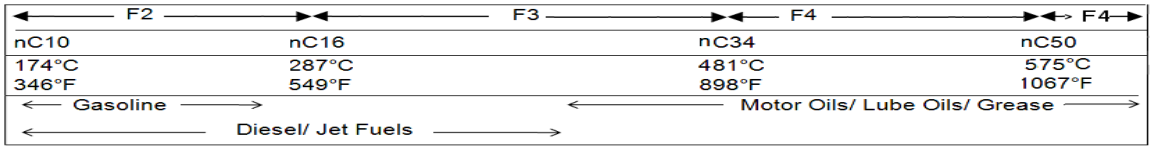
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2491777-6
Client ID: EX-11-10





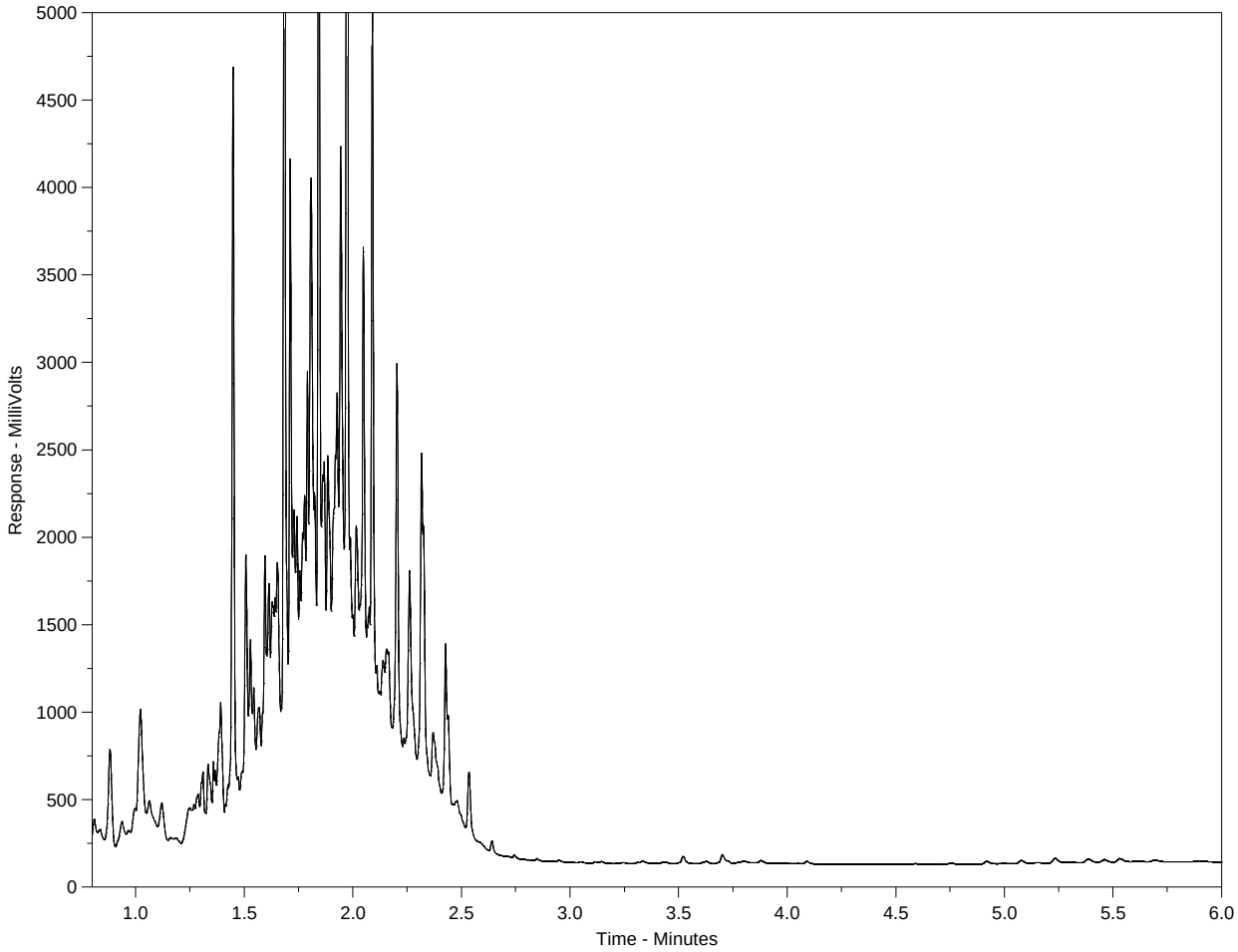
The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

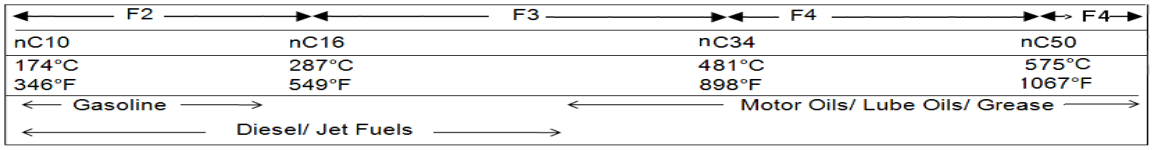
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2491777-7
Client ID: EX-11-11





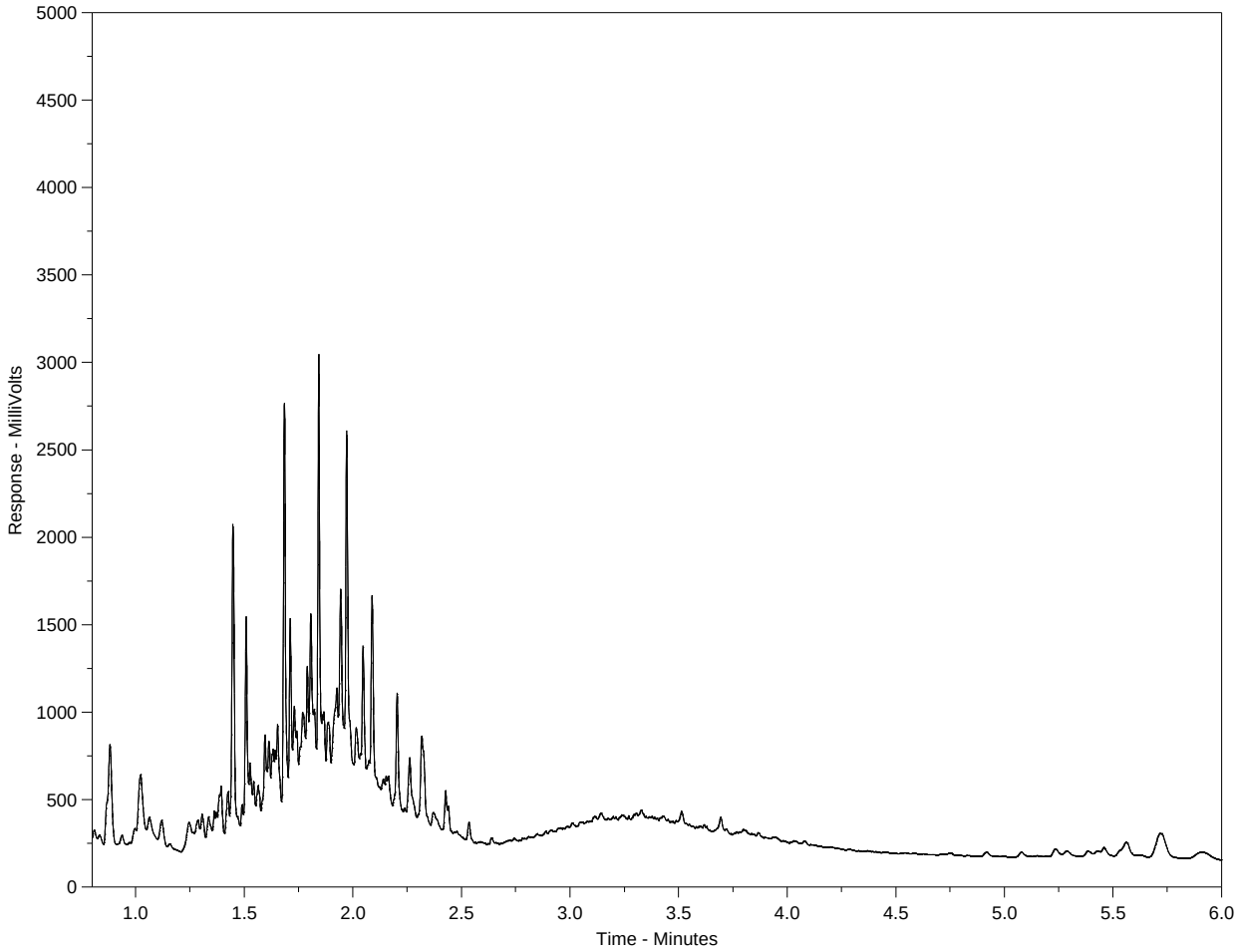
The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

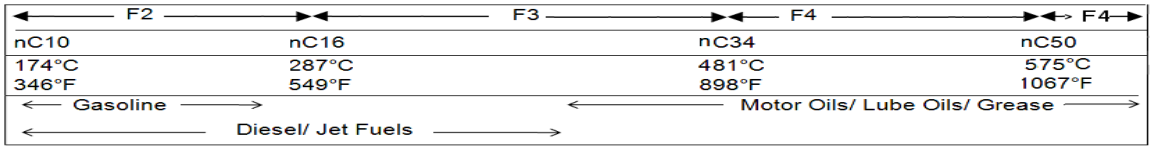
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2491777-8
Client ID: EX-11-13





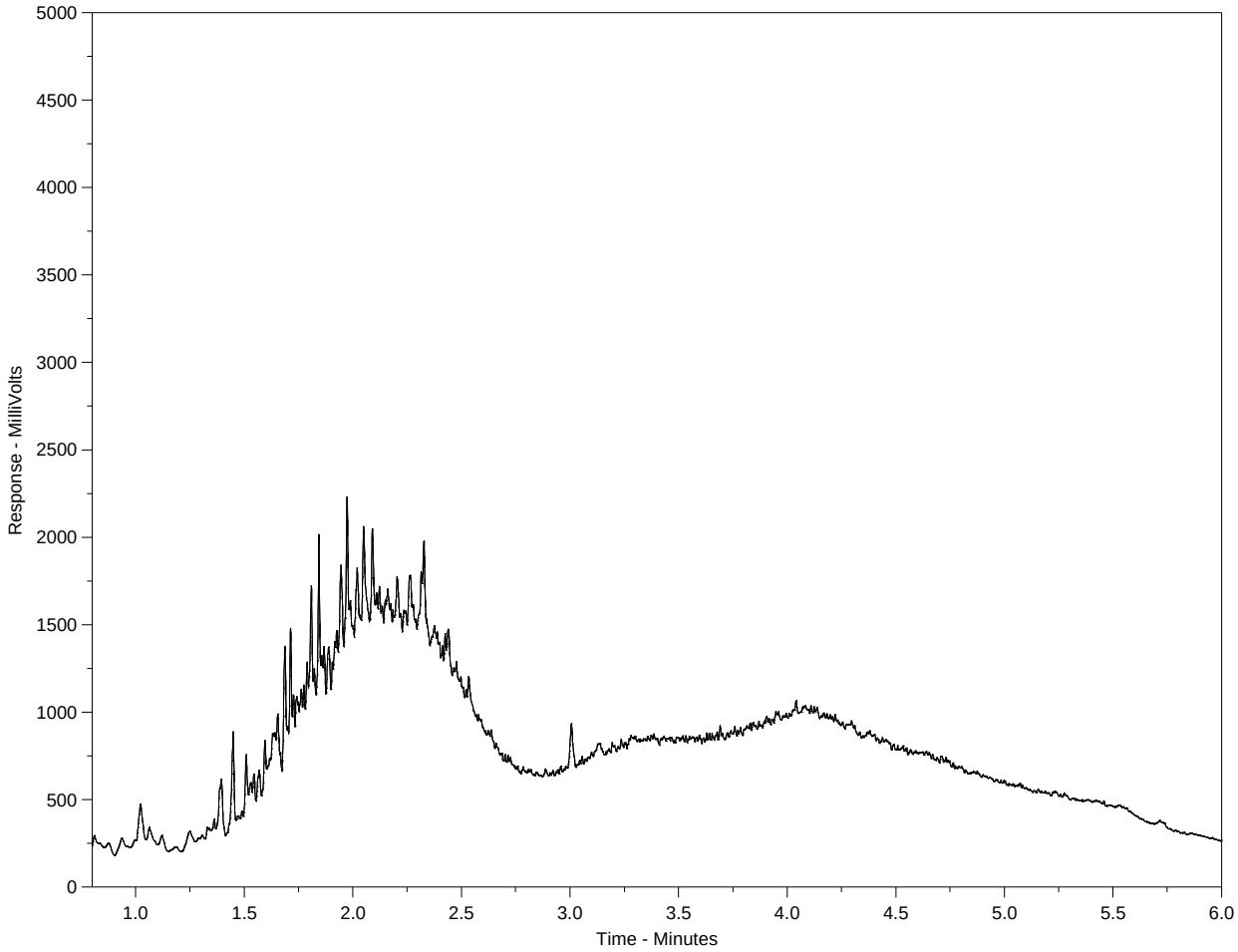
The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

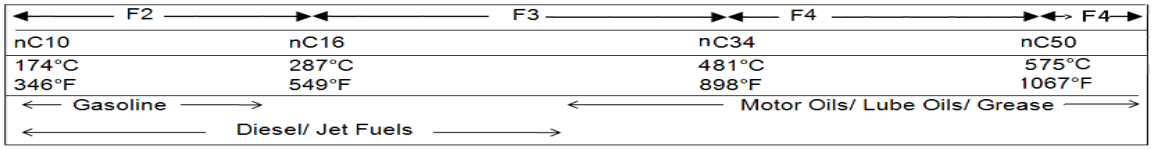
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2491777-9
Client ID: EX-11-08





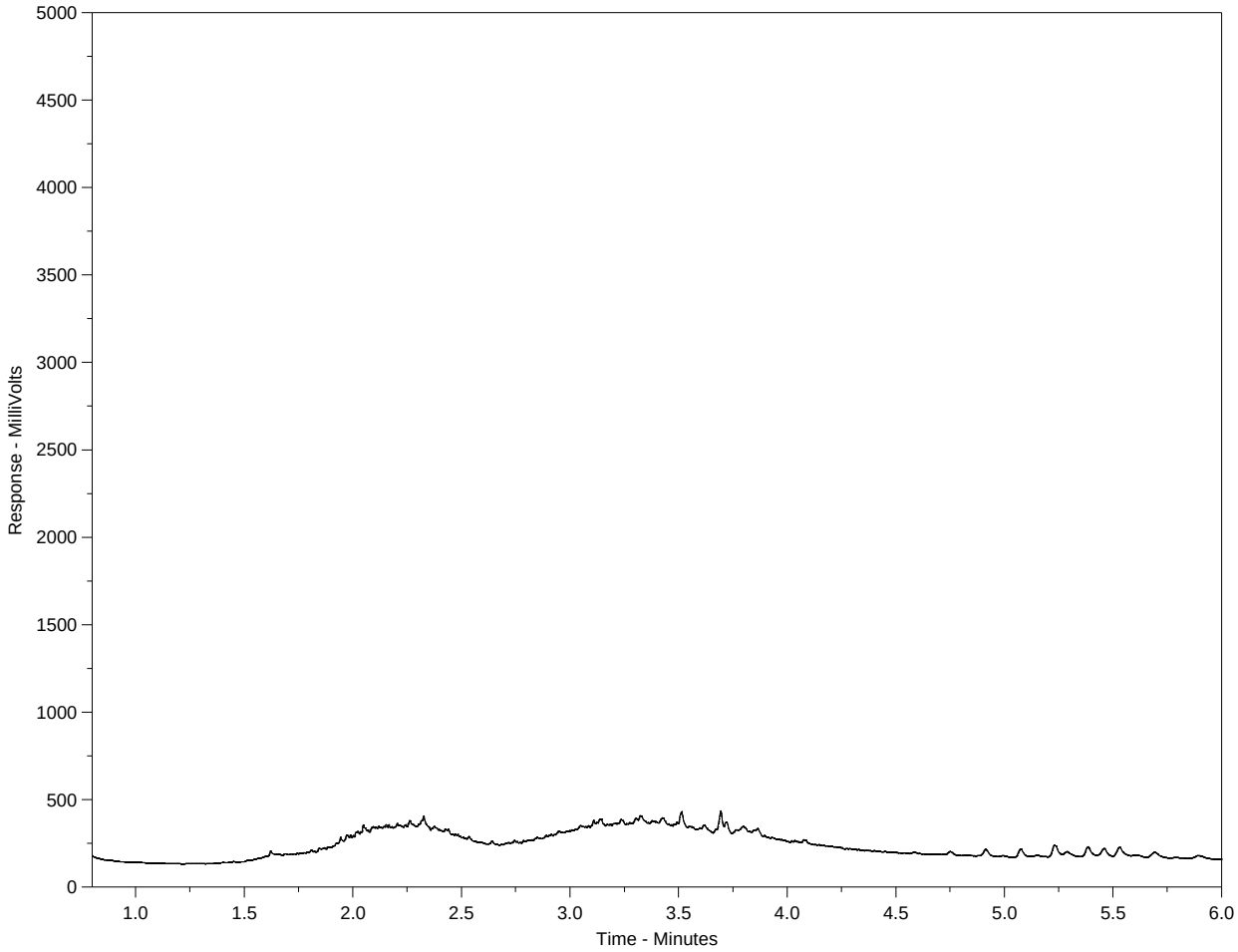
The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

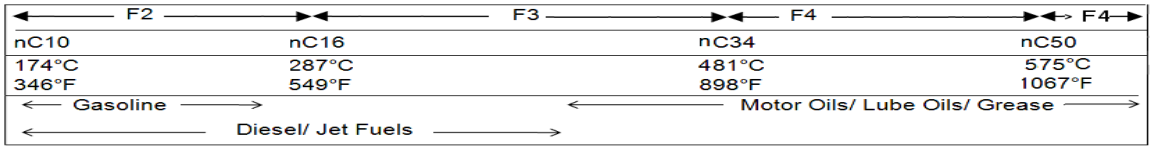
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2491777-10
Client ID: EX-11-01





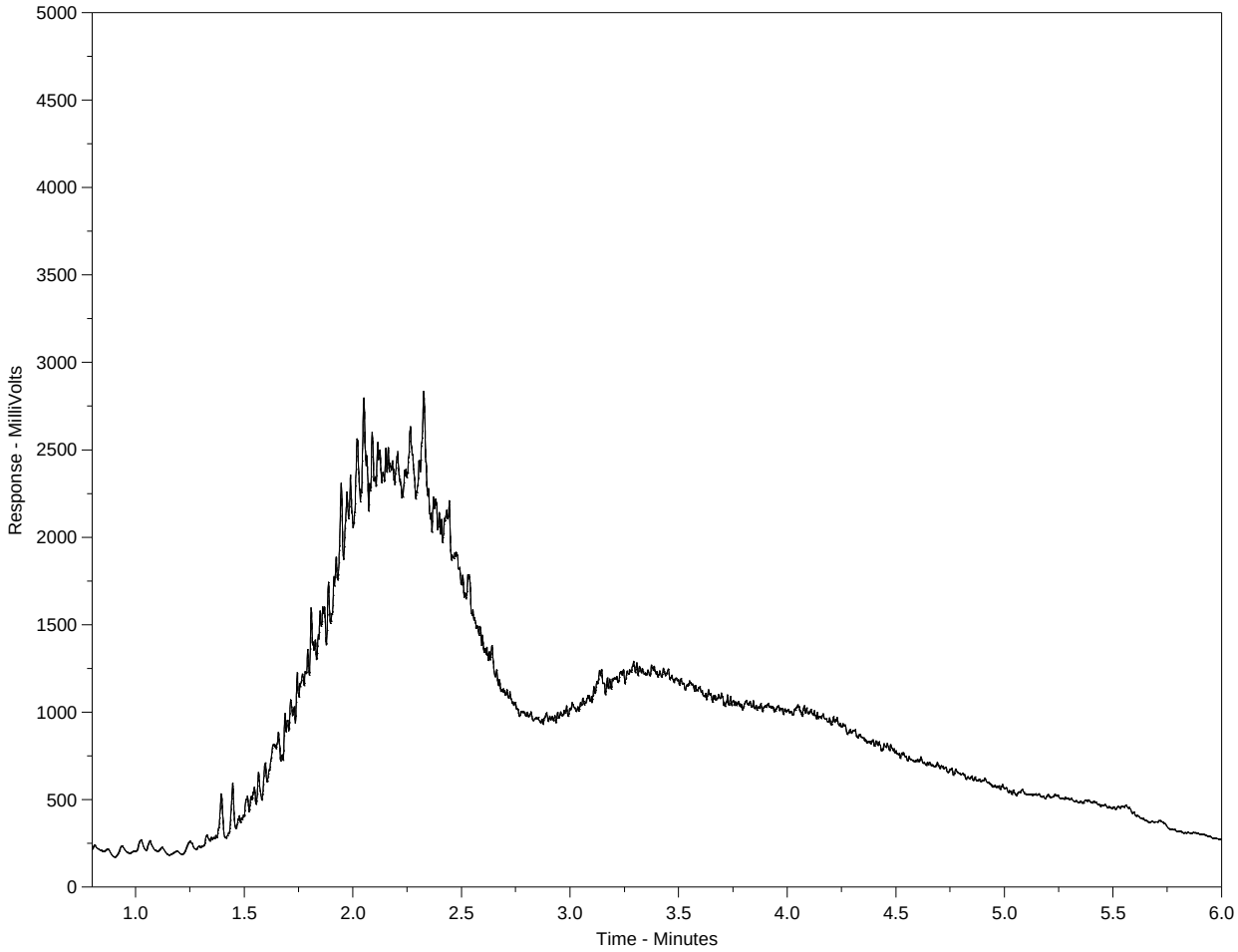
The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

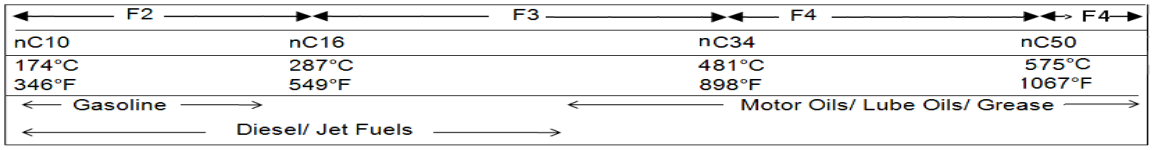
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2491777-11
Client ID: EX-11-04





The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number:

Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report ☑ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax k.lewis@mandalayresources.com
Email 2 sfiddler@golder.com
Email 3 jmusijowski@golder.com

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax
Email 2

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☑ | Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #: Q80711
Job #: 19136158
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only): L2491777

ALS Contact: Oliver Gregg Sampler:

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	EX-13-08	17-Aug-20		Soil	3	X		
	EX-13-09				1	X		
	EX-13-04					X		
	EX-13-05					X		
	EX-13-02					X		
	EX-11-10					X		
	EX-11-11				2	X		
	EX-11-13				2	X		
	EX-11-08				2	X		
	EX-11-01				2	X		
	EX-11-04				2	X		

L2491777-COFC

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO
Are samples for human consumption/ use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C	FINAL COOLER TEMPERATURES °C
5.6	

SHIPMENT RELEASE (client use)

Released by: Rebecca Date: Aug 19/20 Time: 8:00

INITIAL SHIPMENT RECEPTION (lab use only)

Received by: MH Date: Aug 20/20 Time: 9:00

FINAL SHIPMENT RECEPTION (lab use only)

Received by: Date: Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCT 2018 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

GOLDER ASSOCIATES LTD
ATTN: Steven Fiddler
16820 107 Ave NW
Edmonton AB T5P 4C3

Date Received: 20-AUG-20
Report Date: 17-SEP-20 14:09 (MT)
Version: FINAL REV. 3

Client Phone: 780-483-3499

Certificate of Analysis

Lab Work Order #: L2491823

Project P.O. #: NOT SUBMITTED
Job Reference: 19136158
C of C Numbers:
Legal Site Desc:

Comments: ADDITIONAL 09-SEP-20 11:25

Harman Bhullar
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2491823-1 EX-07-02							
Sampled By: R.Boyce on 17-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	17-AUG-20	22-AUG-20	R5191942
Toluene	2.94		0.050	mg/kg	17-AUG-20	22-AUG-20	R5191942
Ethylbenzene	<0.010		0.010	mg/kg	17-AUG-20	22-AUG-20	R5191942
m+p-Xylene	<0.050		0.050	mg/kg	17-AUG-20	22-AUG-20	R5191942
o-Xylene	<0.050		0.050	mg/kg	17-AUG-20	22-AUG-20	R5191942
Xylenes	<0.10		0.10	mg/kg	17-AUG-20	22-AUG-20	R5191942
Surrogate: 1,4-Difluorobenzene (SS)	106.1		70-130	%	17-AUG-20	22-AUG-20	R5191942
Surrogate: 4-Bromofluorobenzene (SS)	102.6		70-130	%	17-AUG-20	22-AUG-20	R5191942
Surrogate: 3,4-Dichlorotoluene (SS)	91.0		70-130	%	17-AUG-20	22-AUG-20	R5191942
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	85.8		70-130	%	21-AUG-20	21-AUG-20	R5197025
Chrom. to baseline at nC50	YES				21-AUG-20	21-AUG-20	R5197025
Prep/Analysis Dates					21-AUG-20	21-AUG-20	R5197025
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		17-SEP-20	
F1-BTEX	<10		10	mg/kg		17-SEP-20	
F2 (C10-C16)	<20		20	mg/kg		17-SEP-20	
F3 (C16-C34)	30		20	mg/kg		17-SEP-20	
F4 (C34-C50)	<20		20	mg/kg		17-SEP-20	
Total Hydrocarbons (C6-C50)	30		20	mg/kg		17-SEP-20	
Miscellaneous Parameters							
% Moisture	8.83		0.25	%		21-AUG-20	R5196356
Biogenic Toluene in Soil							
Styrene	<0.050		0.050	mg/kg	14-SEP-20	16-SEP-20	R5224401
alpha-Pinene	<0.050		0.050	mg/kg	14-SEP-20	16-SEP-20	R5224401
m-Cymene	<0.050		0.050	mg/kg	14-SEP-20	16-SEP-20	R5224401
p-Cymene	<0.050		0.050	mg/kg	14-SEP-20	16-SEP-20	R5224401
o-Cymene	<0.050		0.050	mg/kg	14-SEP-20	16-SEP-20	R5224401
Benzaldehyde	<0.050		0.050	mg/kg	14-SEP-20	16-SEP-20	R5224401
Toluene Ratio	1.00				14-SEP-20	16-SEP-20	R5224401
Cymene Ratio	0.00				14-SEP-20	16-SEP-20	R5224401
Surrogate: 1,4-Difluorobenzene	84.1		70-130	%	14-SEP-20	16-SEP-20	R5224401
Surrogate: 4-Bromofluorobenzene	80.4		70-130	%	14-SEP-20	16-SEP-20	R5224401
L2491823-2 EX-07-08							
Sampled By: R.Boyce on 17-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.0127		0.0050	mg/kg	17-AUG-20	22-AUG-20	R5191942
Toluene	2.22		0.050	mg/kg	17-AUG-20	22-AUG-20	R5191942
Ethylbenzene	0.042		0.010	mg/kg	17-AUG-20	22-AUG-20	R5191942
m+p-Xylene	0.358		0.050	mg/kg	17-AUG-20	22-AUG-20	R5191942
o-Xylene	0.725		0.050	mg/kg	17-AUG-20	22-AUG-20	R5191942
Xylenes	1.08		0.10	mg/kg	17-AUG-20	22-AUG-20	R5191942
Surrogate: 1,4-Difluorobenzene (SS)	105.5		70-130	%	17-AUG-20	22-AUG-20	R5191942
Surrogate: 4-Bromofluorobenzene (SS)	115.4		70-130	%	17-AUG-20	22-AUG-20	R5191942
Surrogate: 3,4-Dichlorotoluene (SS)	83.9		70-130	%	17-AUG-20	22-AUG-20	R5191942
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	97.7		70-130	%	21-AUG-20	21-AUG-20	R5197025
Chrom. to baseline at nC50	YES				21-AUG-20	21-AUG-20	R5197025

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2491823-2 EX-07-08							
Sampled By: R.Boyce on 17-AUG-20							
Matrix: SOIL							
CCME Total Extractable Hydrocarbons							
Prep/Analysis Dates					21-AUG-20	21-AUG-20	R5197025
CCME Total Hydrocarbons							
F1 (C6-C10)	51		10	mg/kg		22-AUG-20	
F1-BTEX	48		10	mg/kg		22-AUG-20	
F2 (C10-C16)	293		20	mg/kg		22-AUG-20	
F3 (C16-C34)	56		20	mg/kg		22-AUG-20	
F4 (C34-C50)	<20		20	mg/kg		22-AUG-20	
Total Hydrocarbons (C6-C50)	400		20	mg/kg		22-AUG-20	
Miscellaneous Parameters							
% Moisture	14.1		0.25	%		21-AUG-20	R5196356
L2491823-3 EX-07-06							
Sampled By: R.Boyce on 17-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	17-AUG-20	22-AUG-20	R5191942
Toluene	0.239		0.050	mg/kg	17-AUG-20	22-AUG-20	R5191942
Ethylbenzene	<0.010		0.010	mg/kg	17-AUG-20	22-AUG-20	R5191942
m+p-Xylene	<0.050		0.050	mg/kg	17-AUG-20	22-AUG-20	R5191942
o-Xylene	<0.050		0.050	mg/kg	17-AUG-20	22-AUG-20	R5191942
Xylenes	<0.10		0.10	mg/kg	17-AUG-20	22-AUG-20	R5191942
Surrogate: 1,4-Difluorobenzene (SS)	83.4		70-130	%	17-AUG-20	22-AUG-20	R5191942
Surrogate: 4-Bromofluorobenzene (SS)	100.3		70-130	%	17-AUG-20	22-AUG-20	R5191942
Surrogate: 3,4-Dichlorotoluene (SS)	82.9		70-130	%	17-AUG-20	22-AUG-20	R5191942
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	87.3		70-130	%	21-AUG-20	21-AUG-20	R5197025
Chrom. to baseline at nC50	YES				21-AUG-20	21-AUG-20	R5197025
Prep/Analysis Dates					21-AUG-20	21-AUG-20	R5197025
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		22-AUG-20	
F1-BTEX	<10		10	mg/kg		22-AUG-20	
F2 (C10-C16)	28		20	mg/kg		22-AUG-20	
F3 (C16-C34)	97		20	mg/kg		22-AUG-20	
F4 (C34-C50)	<20		20	mg/kg		22-AUG-20	
Total Hydrocarbons (C6-C50)	125		20	mg/kg		22-AUG-20	
Miscellaneous Parameters							
% Moisture	9.75		0.25	%		21-AUG-20	R5196356
L2491823-4 EX-07-09							
Sampled By: R.Boyce on 17-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	17-AUG-20	22-AUG-20	R5191942
Toluene	1.08		0.050	mg/kg	17-AUG-20	22-AUG-20	R5191942
Ethylbenzene	0.035		0.010	mg/kg	17-AUG-20	22-AUG-20	R5191942
m+p-Xylene	0.236		0.050	mg/kg	17-AUG-20	22-AUG-20	R5191942
o-Xylene	0.133		0.050	mg/kg	17-AUG-20	22-AUG-20	R5191942
Xylenes	0.37		0.10	mg/kg	17-AUG-20	22-AUG-20	R5191942
Surrogate: 1,4-Difluorobenzene (SS)	102.2		70-130	%	17-AUG-20	22-AUG-20	R5191942
Surrogate: 4-Bromofluorobenzene (SS)	121.8		70-130	%	17-AUG-20	22-AUG-20	R5191942
Surrogate: 3,4-Dichlorotoluene (SS)	96.3		70-130	%	17-AUG-20	22-AUG-20	R5191942

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2491823-4 EX-07-09							
Sampled By: R.Boyce on 17-AUG-20							
Matrix: SOIL							
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	90.9		70-130	%	21-AUG-20	21-AUG-20	R5197025
Chrom. to baseline at nC50	YES				21-AUG-20	21-AUG-20	R5197025
Prep/Analysis Dates					21-AUG-20	21-AUG-20	R5197025
CCME Total Hydrocarbons							
F1 (C6-C10)	11		10	mg/kg		22-AUG-20	
F1-BTEX	<10		10	mg/kg		22-AUG-20	
F2 (C10-C16)	220		20	mg/kg		22-AUG-20	
F3 (C16-C34)	982		20	mg/kg		22-AUG-20	
F4 (C34-C50)	157		20	mg/kg		22-AUG-20	
Total Hydrocarbons (C6-C50)	1370		20	mg/kg		22-AUG-20	
Miscellaneous Parameters							
% Moisture	9.05		0.25	%		21-AUG-20	R5196356
L2491823-5 EX-08-11							
Sampled By: R.Boyce on 16-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	16-AUG-20	22-AUG-20	R5191942
Toluene	0.184		0.050	mg/kg	16-AUG-20	22-AUG-20	R5191942
Ethylbenzene	<0.010		0.010	mg/kg	16-AUG-20	22-AUG-20	R5191942
m+p-Xylene	<0.050		0.050	mg/kg	16-AUG-20	22-AUG-20	R5191942
o-Xylene	<0.050		0.050	mg/kg	16-AUG-20	22-AUG-20	R5191942
Xylenes	<0.10		0.10	mg/kg	16-AUG-20	22-AUG-20	R5191942
Surrogate: 1,4-Difluorobenzene (SS)	101.0		70-130	%	16-AUG-20	22-AUG-20	R5191942
Surrogate: 4-Bromofluorobenzene (SS)	95.2		70-130	%	16-AUG-20	22-AUG-20	R5191942
Surrogate: 3,4-Dichlorotoluene (SS)	90.6		70-130	%	16-AUG-20	22-AUG-20	R5191942
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	88.7		70-130	%	21-AUG-20	21-AUG-20	R5197025
Chrom. to baseline at nC50	YES				21-AUG-20	21-AUG-20	R5197025
Prep/Analysis Dates					21-AUG-20	21-AUG-20	R5197025
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		22-AUG-20	
F1-BTEX	<10		10	mg/kg		22-AUG-20	
F2 (C10-C16)	<20		20	mg/kg		22-AUG-20	
F3 (C16-C34)	32		20	mg/kg		22-AUG-20	
F4 (C34-C50)	<20		20	mg/kg		22-AUG-20	
Total Hydrocarbons (C6-C50)	32		20	mg/kg		22-AUG-20	
Miscellaneous Parameters							
% Moisture	9.16		0.25	%		21-AUG-20	R5196356
L2491823-6 EX-08-12							
Sampled By: R.Boyce on 16-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	16-AUG-20	22-AUG-20	R5191942
Toluene	0.445		0.050	mg/kg	16-AUG-20	22-AUG-20	R5191942
Ethylbenzene	<0.010		0.010	mg/kg	16-AUG-20	22-AUG-20	R5191942
m+p-Xylene	<0.050		0.050	mg/kg	16-AUG-20	22-AUG-20	R5191942
o-Xylene	<0.050		0.050	mg/kg	16-AUG-20	22-AUG-20	R5191942
Xylenes	<0.10		0.10	mg/kg	16-AUG-20	22-AUG-20	R5191942
Surrogate: 1,4-Difluorobenzene (SS)	87.4		70-130	%	16-AUG-20	22-AUG-20	R5191942

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2491823-6 EX-08-12							
Sampled By: R.Boyce on 16-AUG-20							
Matrix: SOIL							
BTEX and F1							
Surrogate: 4-Bromofluorobenzene (SS)	98.6		70-130	%	16-AUG-20	22-AUG-20	R5191942
Surrogate: 3,4-Dichlorotoluene (SS)	88.5		70-130	%	16-AUG-20	22-AUG-20	R5191942
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	94.9		70-130	%	21-AUG-20	21-AUG-20	R5197025
Chrom. to baseline at nC50	YES				21-AUG-20	21-AUG-20	R5197025
Prep/Analysis Dates					21-AUG-20	21-AUG-20	R5197025
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		22-AUG-20	
F1-BTEX	<10		10	mg/kg		22-AUG-20	
F2 (C10-C16)	966		20	mg/kg		22-AUG-20	
F3 (C16-C34)	402		20	mg/kg		22-AUG-20	
F4 (C34-C50)	<20		20	mg/kg		22-AUG-20	
Total Hydrocarbons (C6-C50)	1370		20	mg/kg		22-AUG-20	
Miscellaneous Parameters							
% Moisture	10.7		0.25	%		21-AUG-20	R5196356
L2491823-7 EX-12-06							
Sampled By: R.Boyce on 16-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.0115		0.0050	mg/kg	16-AUG-20	22-AUG-20	R5191942
Toluene	0.387		0.050	mg/kg	16-AUG-20	22-AUG-20	R5191942
Ethylbenzene	0.011		0.010	mg/kg	16-AUG-20	22-AUG-20	R5191942
m+p-Xylene	<0.050		0.050	mg/kg	16-AUG-20	22-AUG-20	R5191942
o-Xylene	<0.050		0.050	mg/kg	16-AUG-20	22-AUG-20	R5191942
Xylenes	<0.10		0.10	mg/kg	16-AUG-20	22-AUG-20	R5191942
Surrogate: 1,4-Difluorobenzene (SS)	86.1		70-130	%	16-AUG-20	22-AUG-20	R5191942
Surrogate: 4-Bromofluorobenzene (SS)	95.3		70-130	%	16-AUG-20	22-AUG-20	R5191942
Surrogate: 3,4-Dichlorotoluene (SS)	83.6		70-130	%	16-AUG-20	22-AUG-20	R5191942
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	89.3		70-130	%	21-AUG-20	21-AUG-20	R5197025
Chrom. to baseline at nC50	YES				21-AUG-20	21-AUG-20	R5197025
Prep/Analysis Dates					21-AUG-20	21-AUG-20	R5197025
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		22-AUG-20	
F1-BTEX	<10		10	mg/kg		22-AUG-20	
F2 (C10-C16)	51		20	mg/kg		22-AUG-20	
F3 (C16-C34)	358		20	mg/kg		22-AUG-20	
F4 (C34-C50)	203		20	mg/kg		22-AUG-20	
Total Hydrocarbons (C6-C50)	612		20	mg/kg		22-AUG-20	
Miscellaneous Parameters							
% Moisture	9.71		0.25	%		21-AUG-20	R5196356
L2491823-8 EX-12-03							
Sampled By: R.Boyce on 16-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.0217		0.0050	mg/kg	16-AUG-20	22-AUG-20	R5191942
Toluene	0.381		0.050	mg/kg	16-AUG-20	22-AUG-20	R5191942
Ethylbenzene	0.014		0.010	mg/kg	16-AUG-20	22-AUG-20	R5191942
m+p-Xylene	<0.050		0.050	mg/kg	16-AUG-20	22-AUG-20	R5191942

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2491823-8 EX-12-03							
Sampled By: R.Boyce on 16-AUG-20							
Matrix: SOIL							
BTEX and F1							
o-Xylene	<0.050		0.050	mg/kg	16-AUG-20	22-AUG-20	R5191942
Xylenes	<0.10		0.10	mg/kg	16-AUG-20	22-AUG-20	R5191942
Surrogate: 1,4-Difluorobenzene (SS)	96.4		70-130	%	16-AUG-20	22-AUG-20	R5191942
Surrogate: 4-Bromofluorobenzene (SS)	89.2		70-130	%	16-AUG-20	22-AUG-20	R5191942
Surrogate: 3,4-Dichlorotoluene (SS)	80.7		70-130	%	16-AUG-20	22-AUG-20	R5191942
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	91.0		70-130	%	21-AUG-20	21-AUG-20	R5197025
Chrom. to baseline at nC50	YES				21-AUG-20	21-AUG-20	R5197025
Prep/Analysis Dates					21-AUG-20	21-AUG-20	R5197025
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		22-AUG-20	
F1-BTEX	<10		10	mg/kg		22-AUG-20	
F2 (C10-C16)	51		20	mg/kg		22-AUG-20	
F3 (C16-C34)	295		20	mg/kg		22-AUG-20	
F4 (C34-C50)	108		20	mg/kg		22-AUG-20	
Total Hydrocarbons (C6-C50)	454		20	mg/kg		22-AUG-20	
Miscellaneous Parameters							
% Moisture	8.97		0.25	%		21-AUG-20	R5196356
L2491823-9 EX-12-09							
Sampled By: R.Boyce on 16-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	16-AUG-20	22-AUG-20	R5191942
Toluene	0.635		0.050	mg/kg	16-AUG-20	22-AUG-20	R5191942
Ethylbenzene	<0.010		0.010	mg/kg	16-AUG-20	22-AUG-20	R5191942
m+p-Xylene	<0.050		0.050	mg/kg	16-AUG-20	22-AUG-20	R5191942
o-Xylene	<0.050		0.050	mg/kg	16-AUG-20	22-AUG-20	R5191942
Xylenes	<0.10		0.10	mg/kg	16-AUG-20	22-AUG-20	R5191942
Surrogate: 1,4-Difluorobenzene (SS)	92.8		70-130	%	16-AUG-20	22-AUG-20	R5191942
Surrogate: 4-Bromofluorobenzene (SS)	97.6		70-130	%	16-AUG-20	22-AUG-20	R5191942
Surrogate: 3,4-Dichlorotoluene (SS)	91.3		70-130	%	16-AUG-20	22-AUG-20	R5191942
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	92.8		70-130	%	21-AUG-20	21-AUG-20	R5197025
Chrom. to baseline at nC50	YES				21-AUG-20	21-AUG-20	R5197025
Prep/Analysis Dates					21-AUG-20	21-AUG-20	R5197025
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		22-AUG-20	
F1-BTEX	<10		10	mg/kg		22-AUG-20	
F2 (C10-C16)	32		20	mg/kg		22-AUG-20	
F3 (C16-C34)	139		20	mg/kg		22-AUG-20	
F4 (C34-C50)	40		20	mg/kg		22-AUG-20	
Total Hydrocarbons (C6-C50)	211		20	mg/kg		22-AUG-20	
Miscellaneous Parameters							
% Moisture	7.41		0.25	%		21-AUG-20	R5196356
L2491823-10 EX-12-07							
Sampled By: R.Boyce on 16-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.0428		0.0050	mg/kg	16-AUG-20	22-AUG-20	R5191942

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2491823-10 EX-12-07							
Sampled By: R.Boyce on 16-AUG-20							
Matrix: SOIL							
BTEX and F1							
Toluene	0.265		0.050	mg/kg	16-AUG-20	22-AUG-20	R5191942
Ethylbenzene	0.028		0.010	mg/kg	16-AUG-20	22-AUG-20	R5191942
m+p-Xylene	0.053		0.050	mg/kg	16-AUG-20	22-AUG-20	R5191942
o-Xylene	<0.050		0.050	mg/kg	16-AUG-20	22-AUG-20	R5191942
Xylenes	<0.10		0.10	mg/kg	16-AUG-20	22-AUG-20	R5191942
Surrogate: 1,4-Difluorobenzene (SS)	96.7		70-130	%	16-AUG-20	22-AUG-20	R5191942
Surrogate: 4-Bromofluorobenzene (SS)	88.3		70-130	%	16-AUG-20	22-AUG-20	R5191942
Surrogate: 3,4-Dichlorotoluene (SS)	77.1		70-130	%	16-AUG-20	22-AUG-20	R5191942
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	90.9		70-130	%	21-AUG-20	21-AUG-20	R5197025
Chrom. to baseline at nC50	YES				21-AUG-20	21-AUG-20	R5197025
Prep/Analysis Dates					21-AUG-20	21-AUG-20	R5197025
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		22-AUG-20	
F1-BTEX	<10		10	mg/kg		22-AUG-20	
F2 (C10-C16)	230		20	mg/kg		22-AUG-20	
F3 (C16-C34)	1430		20	mg/kg		22-AUG-20	
F4 (C34-C50)	820		20	mg/kg		22-AUG-20	
Total Hydrocarbons (C6-C50)	2480		20	mg/kg		22-AUG-20	
Miscellaneous Parameters							
% Moisture	15.0		0.25	%		21-AUG-20	R5196356
L2491823-11 EX-12-02							
Sampled By: R.Boyce on 16-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.0365		0.0050	mg/kg	16-AUG-20	22-AUG-20	R5191942
Toluene	0.275		0.050	mg/kg	16-AUG-20	22-AUG-20	R5191942
Ethylbenzene	0.034		0.010	mg/kg	16-AUG-20	22-AUG-20	R5191942
m+p-Xylene	0.165		0.050	mg/kg	16-AUG-20	22-AUG-20	R5191942
o-Xylene	0.057		0.050	mg/kg	16-AUG-20	22-AUG-20	R5191942
Xylenes	0.22		0.10	mg/kg	16-AUG-20	22-AUG-20	R5191942
Surrogate: 1,4-Difluorobenzene (SS)	94.3		70-130	%	16-AUG-20	22-AUG-20	R5191942
Surrogate: 4-Bromofluorobenzene (SS)	96.0		70-130	%	16-AUG-20	22-AUG-20	R5191942
Surrogate: 3,4-Dichlorotoluene (SS)	77.4		70-130	%	16-AUG-20	22-AUG-20	R5191942
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	94.4		70-130	%	21-AUG-20	21-AUG-20	R5197025
Chrom. to baseline at nC50	YES				21-AUG-20	21-AUG-20	R5197025
Prep/Analysis Dates					21-AUG-20	21-AUG-20	R5197025
CCME Total Hydrocarbons							
F1 (C6-C10)	32		10	mg/kg		22-AUG-20	
F1-BTEX	31		10	mg/kg		22-AUG-20	
F2 (C10-C16)	722		20	mg/kg		22-AUG-20	
F3 (C16-C34)	1240		20	mg/kg		22-AUG-20	
F4 (C34-C50)	465		20	mg/kg		22-AUG-20	
Total Hydrocarbons (C6-C50)	2460		20	mg/kg		22-AUG-20	
Miscellaneous Parameters							
% Moisture	9.35		0.25	%		21-AUG-20	R5196356

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BIOTOL-MEOH-HS-MS-CL	Soil	Biogenic Toluene in Soil	EPA 8260C/5021A

Volatile Organic Compounds (VOCs) are analyzed by static headspace GC-MS. Methanol extracts from soil samples are mixed with water in headspace vials, and heated and agitated on a headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law. Substances useful for the qualitative identification of Biogenic Toluene sources are included with this test. Cymene Ratio is the ratio of para-Cymene to Total Cymenes. Toluene Ratio is the ratio of Toluene to Total BTEX. Where both Cymene and Toluene ratios are near 1.00, Biogenic Toluene sources tend to be indicated, particularly for peat/muskeg sample types, as per published literature on the subject. Contact ALS for references.

BTXS,F1-MEOH-ED	Soil	BTEX and F1	EPA 8260C/5021A and CWS PHC Tier 1

This analysis involves the extraction of a subsample of the sediment/soil with methanol added in the field at the time of subsampling. The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. BTX Target compound concentrations are measured using mass spectrometry detection. The instrumental portion of F1 analysis is carried out in accordance with the Canada Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method (2001).

ETL-TVH,TEH-CCME-ED	Soil	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F2-4-TMB-ED	Soil	CCME Total Extractable Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

This analysis is carried out in accordance with the "Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method, Canadian Council of Ministers of the Environment" For C10 to C50 hydrocarbons (F2, F3, F4) and gravimetric heavy hydrocarbons (F4G-sg), a subsample of the sediment/soil is extracted with 1:1 hexane:acetone using a rotary extractor. The extract undergoes a silica-gel clean-up to remove polar compounds. F2, F3 & F4 are analyzed by on-column GC/FID, and F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where F4 (C34-C50) and F4G-sg results are reported for a sample, the larger of the reported values is used for comparison against the relevant CCME standard for F4.
7. The gravimetric heavy hydrocarbon results (F4G-sg), cannot be added to the C6 to C50 hydrocarbon results.
8. This method is validated for use.
9. Data from analysis of quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram.

PREP-MOISTURE-ED	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)

The weighed portion of soil is placed in a 105°C oven to dry to a constant weight; the drying time will vary based on the moisture content of the soil. The dried soil weight is then used to calculate % moisture.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

Laboratory Definition Code	Laboratory Location
ED	ALS ENVIRONMENTAL - EDMONTON, ALBERTA, CANADA
CL	ALS ENVIRONMENTAL - CALGARY, ALBERTA, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Client: GOLDER ASSOCIATES LTD
16820 107 Ave NW
Edmonton AB T5P 4C3
Contact: Steven Fiddler

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BIOTOL-MEOH-HS-MS-CL	**Soil**							
Batch R5224401								
WG3403690-2 LCS								
Styrene			81.1		%		70-130	16-SEP-20
alpha-Pinene			90.9		%		70-130	16-SEP-20
m-Cymene			114.7		%		70-130	16-SEP-20
p-Cymene			117.3		%		70-130	16-SEP-20
o-Cymene			93.8		%		70-130	16-SEP-20
Benzaldehyde			85.5		%		70-130	16-SEP-20
WG3403690-1 MB								
Styrene			<0.050		mg/kg		0.05	16-SEP-20
alpha-Pinene			<0.050		mg/kg		0.05	16-SEP-20
m-Cymene			<0.050		mg/kg		0.05	16-SEP-20
p-Cymene			<0.050		mg/kg		0.05	16-SEP-20
o-Cymene			<0.050		mg/kg		0.05	16-SEP-20
Benzaldehyde			<0.050		mg/kg		0.05	16-SEP-20
Surrogate: 1,4-Difluorobenzene			112.4		%		70-130	16-SEP-20
Surrogate: 4-Bromofluorobenzene			105.8		%		70-130	16-SEP-20
BTXS,F1-MEOH-ED	**Soil**							
Batch R5191942								
WG3388534-2 LCS								
Benzene			103.9		%		70-130	22-AUG-20
Toluene			75.8		%		70-130	22-AUG-20
Ethylbenzene			76.3		%		70-130	22-AUG-20
m+p-Xylene			86.2		%		70-130	22-AUG-20
o-Xylene			81.3		%		70-130	22-AUG-20
WG3388534-1 MB								
Benzene			<0.0050		mg/kg		0.005	22-AUG-20
Toluene			<0.050		mg/kg		0.05	22-AUG-20
Ethylbenzene			<0.010		mg/kg		0.01	22-AUG-20
m+p-Xylene			<0.050		mg/kg		0.05	22-AUG-20
o-Xylene			<0.050		mg/kg		0.05	22-AUG-20
Surrogate: 1,4-Difluorobenzene (SS)			93.0		%		70-130	22-AUG-20
Surrogate: 4-Bromofluorobenzene (SS)			71.3		%		70-130	22-AUG-20
Surrogate: 3,4-Dichlorotoluene (SS)			88.6		%		70-130	22-AUG-20
F2-4-TMB-ED	**Soil**							

Quality Control Report

Workorder: L2491823 Report Date: 17-SEP-20

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-4-TMB-ED	**Soil**							
Batch R5197025								
WG3388474-4 DUP		**L2491823-9**						
F2 (C10-C16)		32	33		mg/kg	3.3	40	21-AUG-20
F3 (C16-C34)		139	160		mg/kg	14	40	21-AUG-20
F4 (C34-C50)		40	47		mg/kg	15	40	21-AUG-20
WG3388474-3 IRM		**ALS PHC RM3**						
F2 (C10-C16)			103.5		%		70-130	21-AUG-20
F3 (C16-C34)			99.3		%		70-130	21-AUG-20
F4 (C34-C50)			87.0		%		70-130	21-AUG-20
WG3388474-2 LCS		**DIESEL/MOTOR OIL**						
F2 (C10-C16)			102.5		%		70-130	21-AUG-20
F3 (C16-C34)			98.6		%		70-130	21-AUG-20
F4 (C34-C50)			101.8		%		70-130	21-AUG-20
WG3388474-1 MB								
F2 (C10-C16)			<20		mg/kg		20	21-AUG-20
F3 (C16-C34)			<20		mg/kg		20	21-AUG-20
F4 (C34-C50)			<20		mg/kg		20	21-AUG-20
Surrogate: 2-Bromobenzotrifluoride			88.5		%		70-130	21-AUG-20
PREP-MOISTURE-ED	**Soil**							
Batch R5196356								
WG3388570-2 LCS								
% Moisture			101.0		%		90-110	21-AUG-20
WG3388570-1 MB								
% Moisture			<0.25		%		0.25	21-AUG-20

Quality Control Report

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

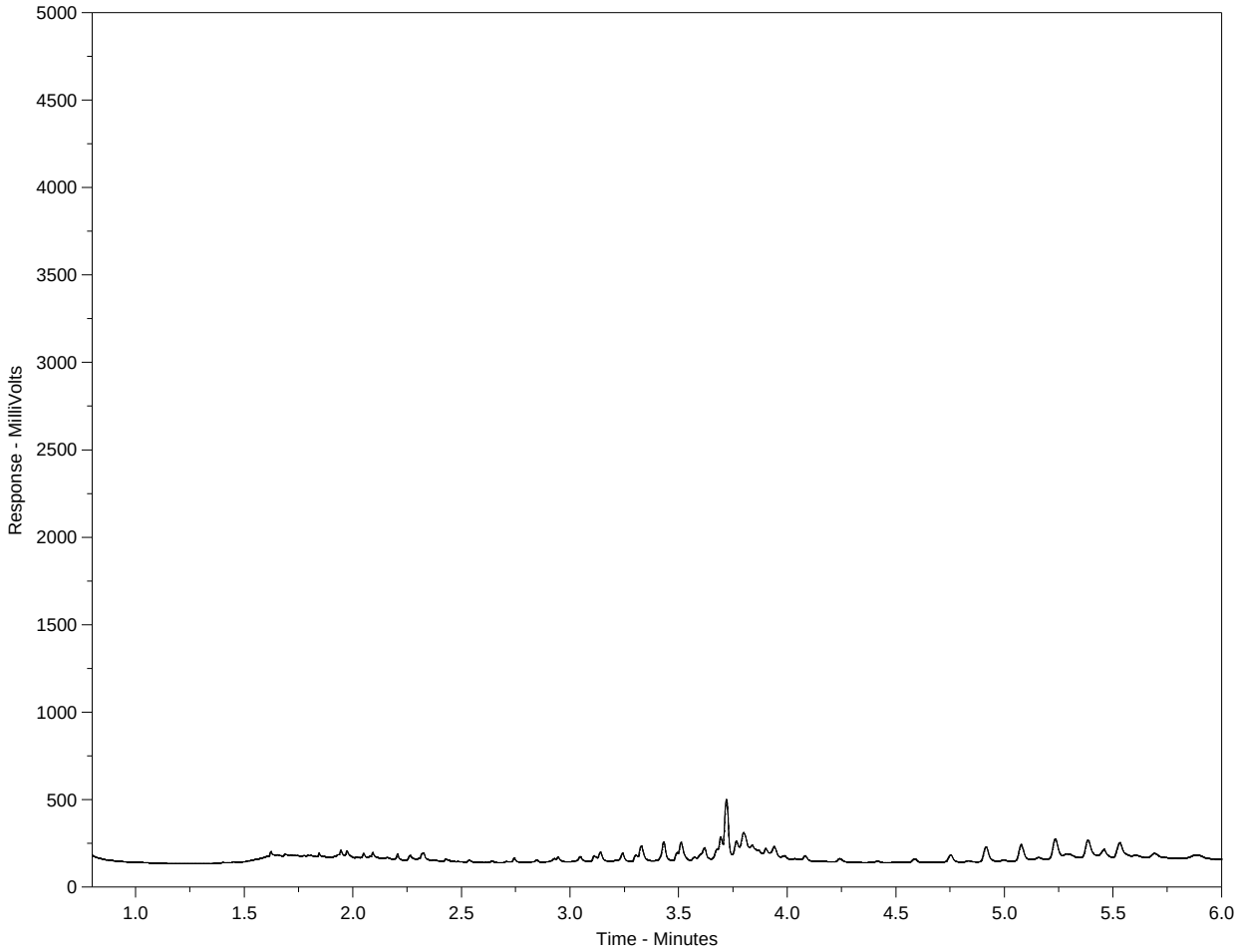
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

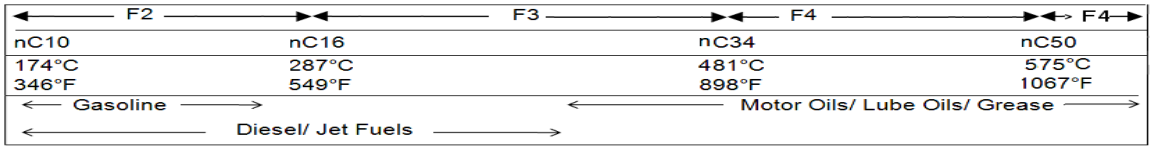
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

Hydrocarbon Distribution Report

ALS Sample ID: L2491823-1
Client ID: EX-07-02





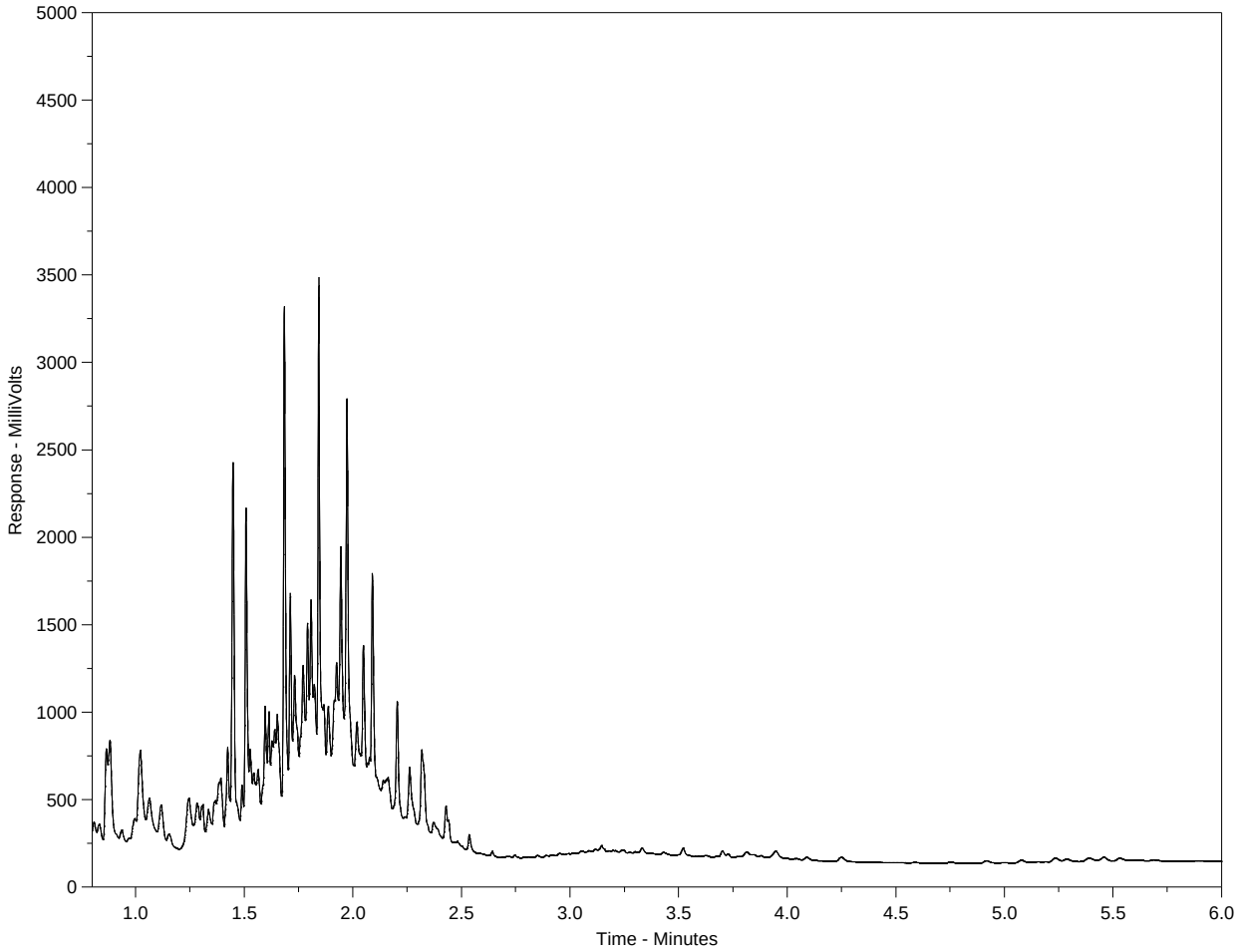
The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

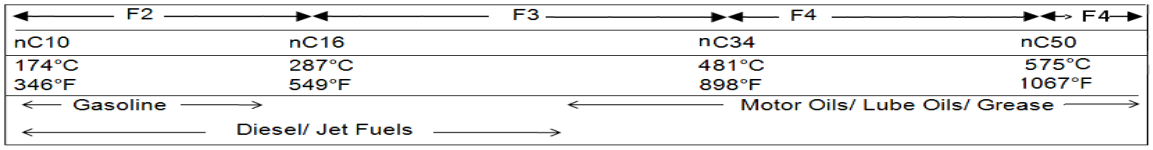
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2491823-2
Client ID: EX-07-08





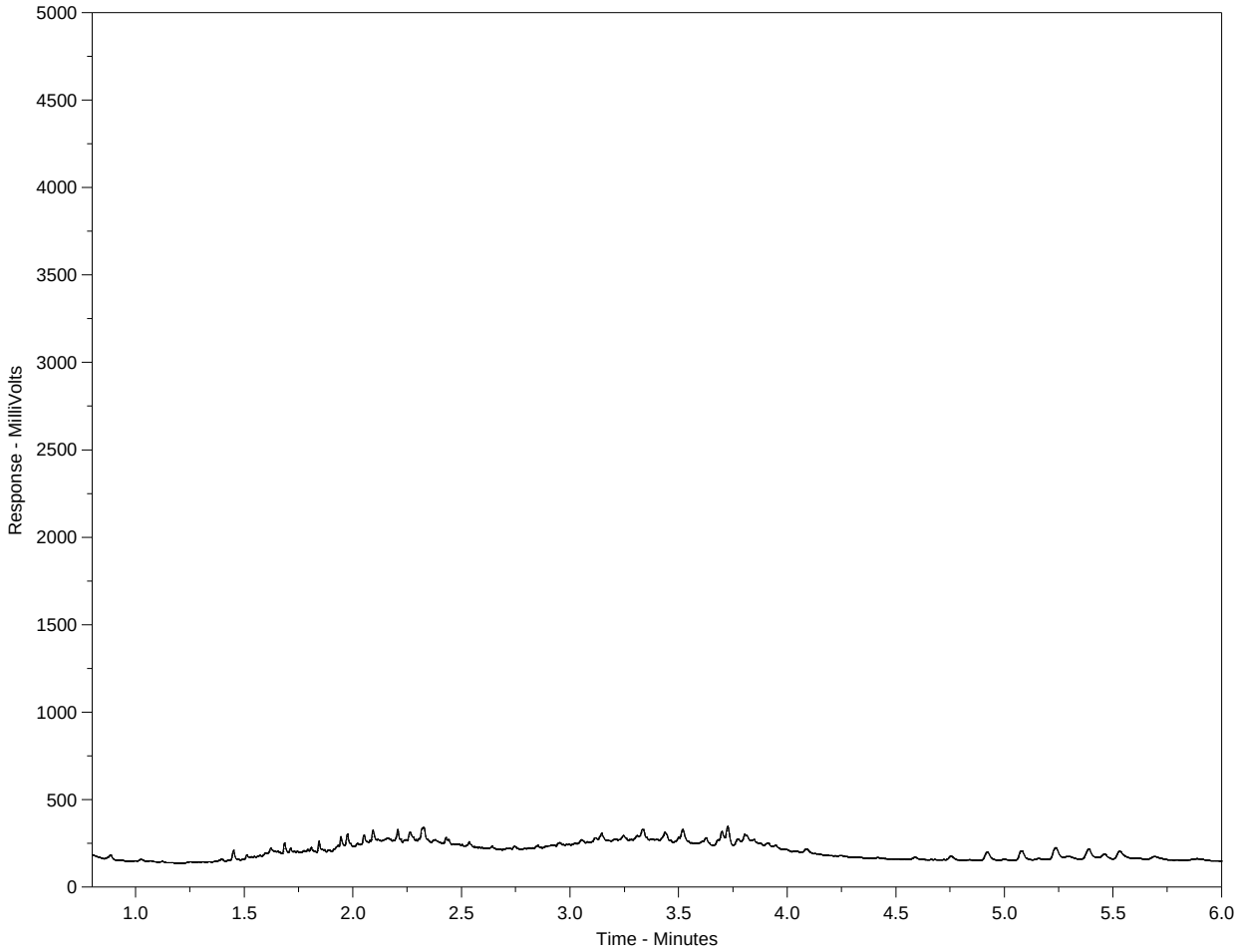
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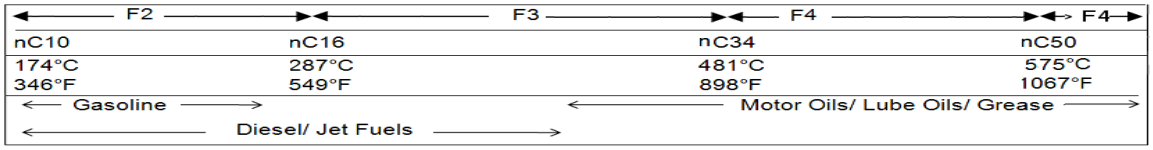
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2491823-3
Client ID: EX-07-06





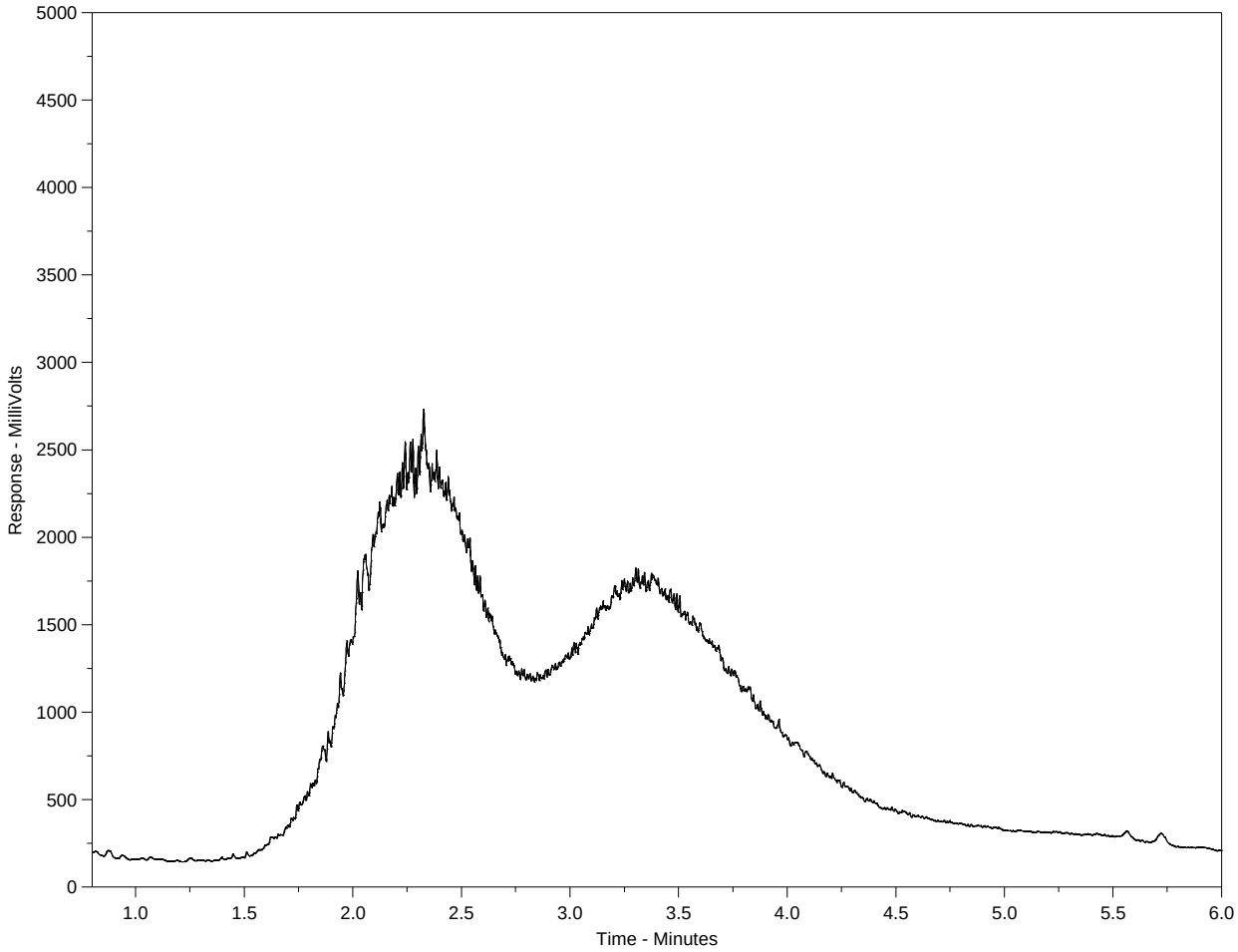
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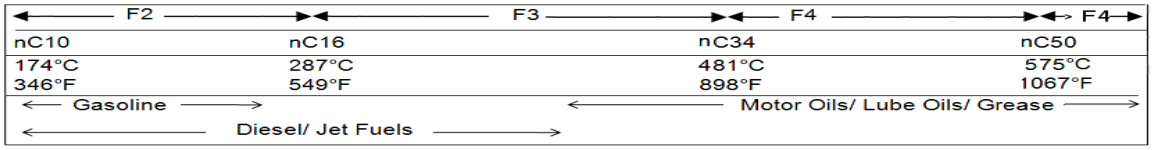
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
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Hydrocarbon Distribution Report

ALS Sample ID: L2491823-4
Client ID: EX-07-09





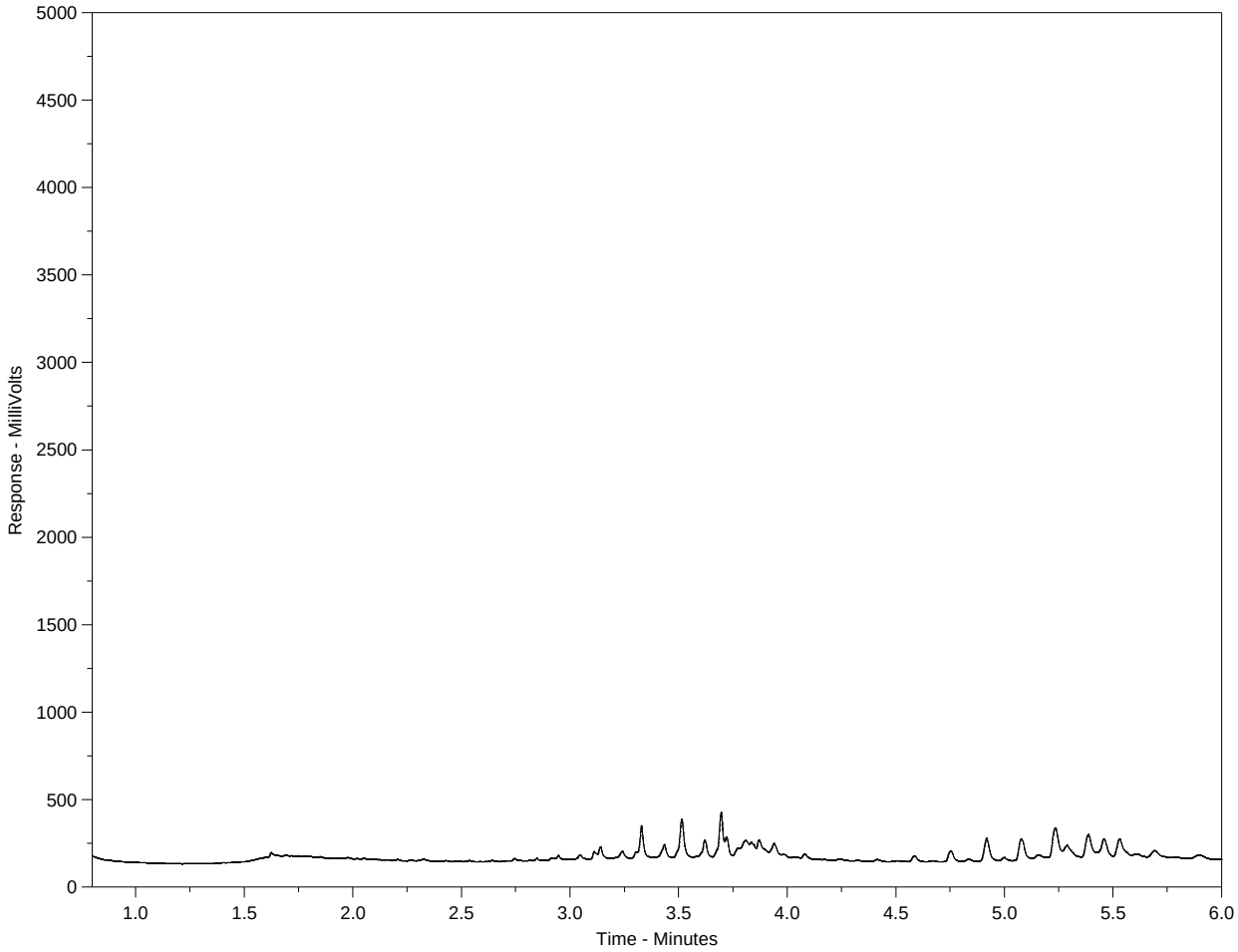
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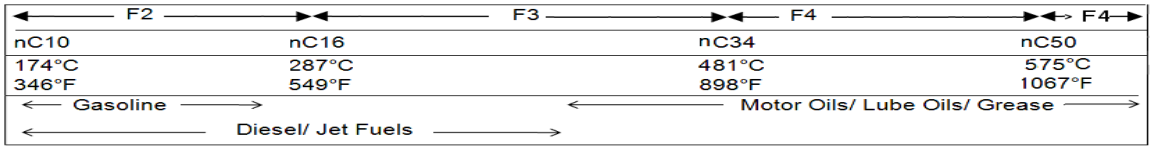
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
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Hydrocarbon Distribution Report

ALS Sample ID: L2491823-5
Client ID: EX-08-11





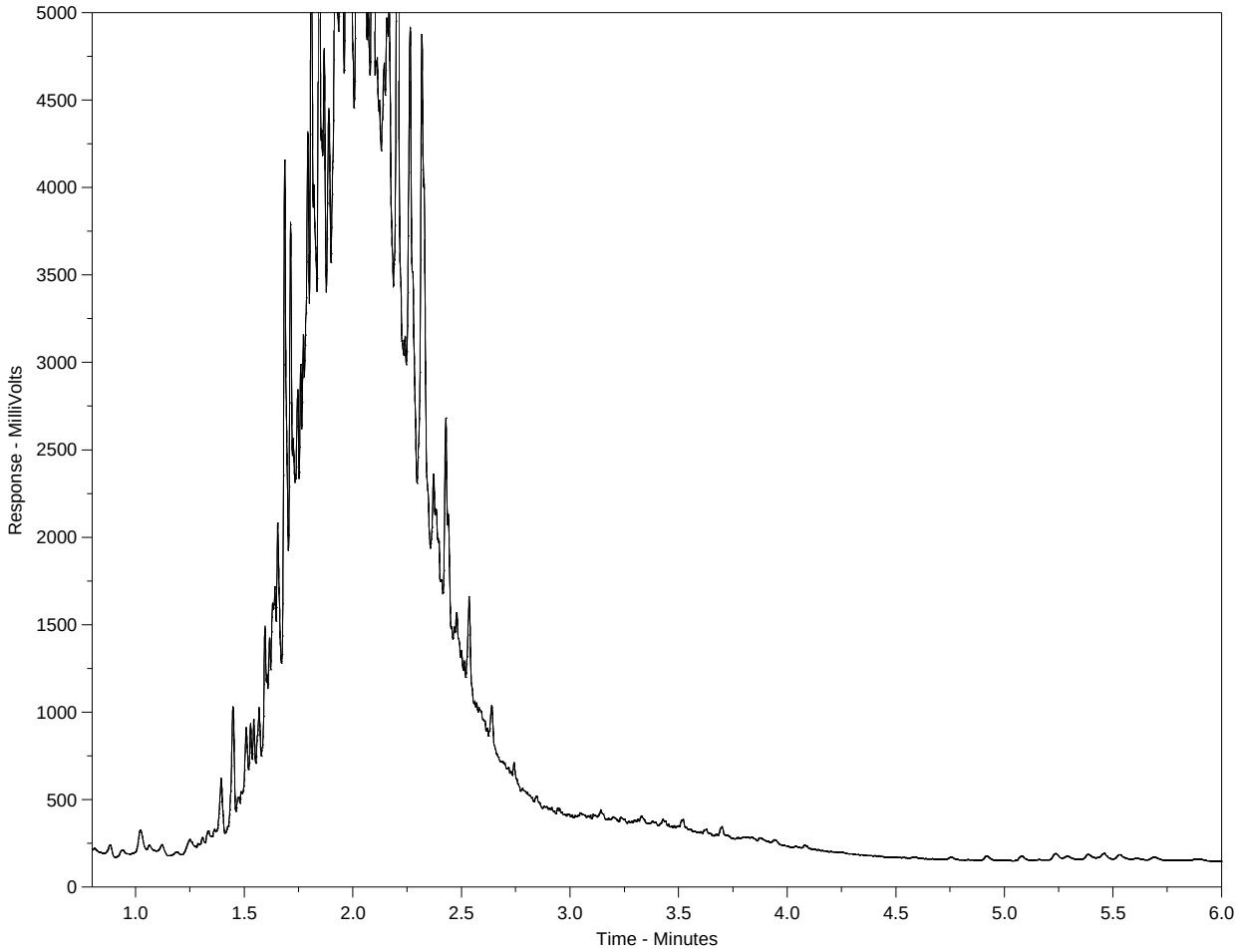
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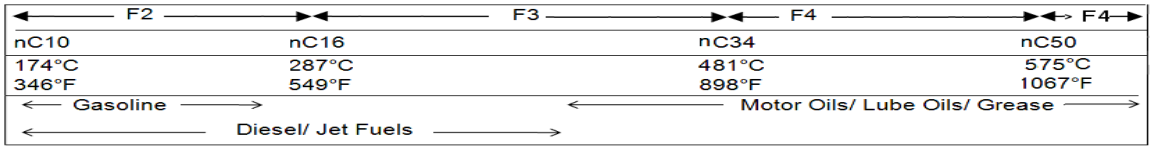
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2491823-6
Client ID: EX-08-12





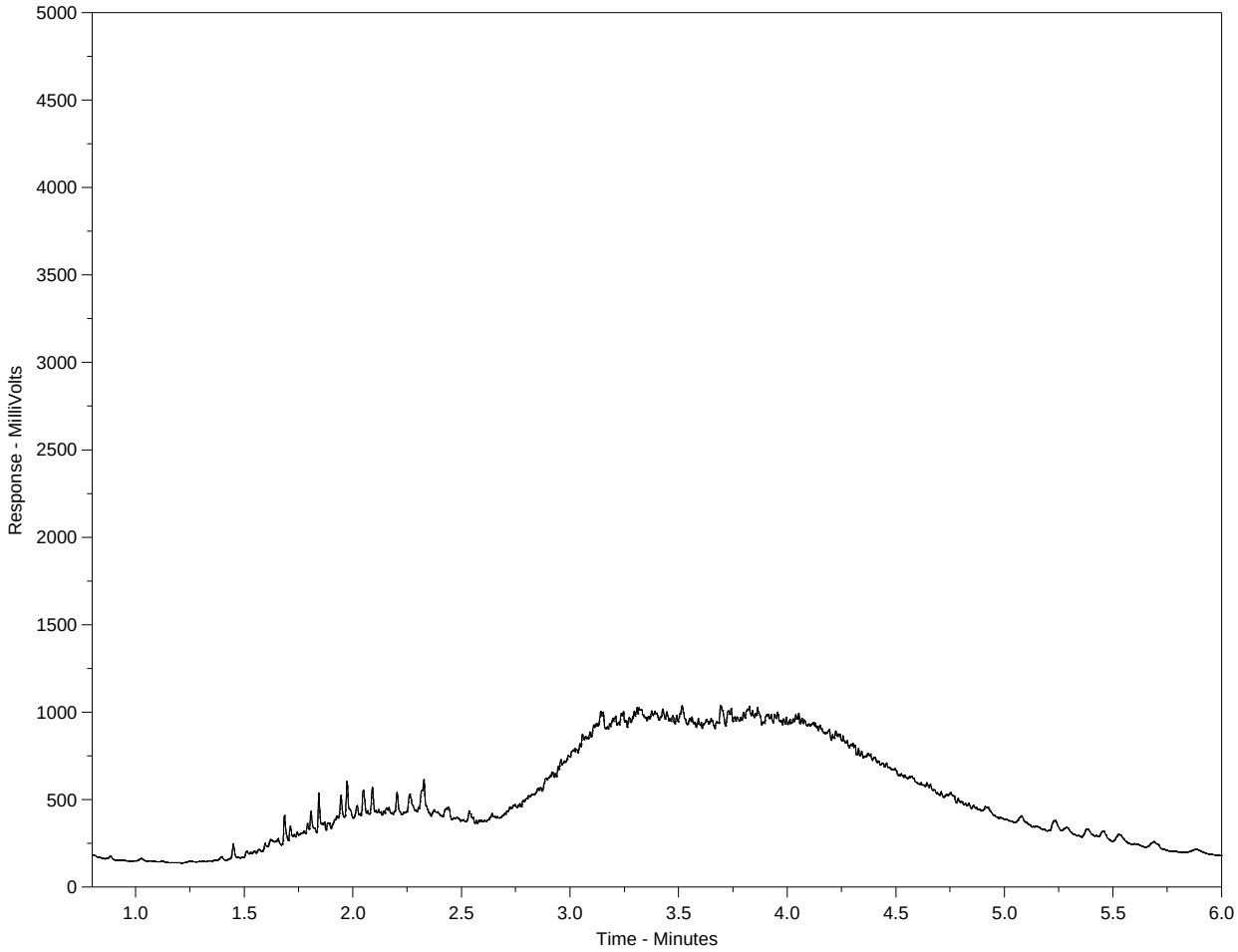
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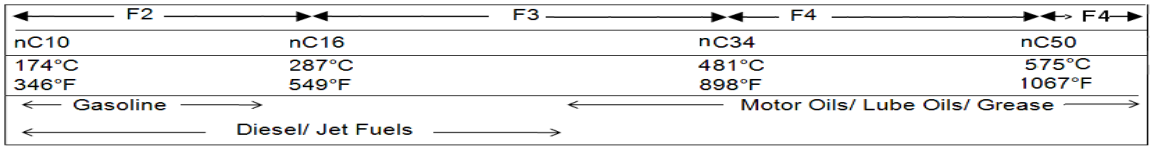
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2491823-7
Client ID: EX-12-06





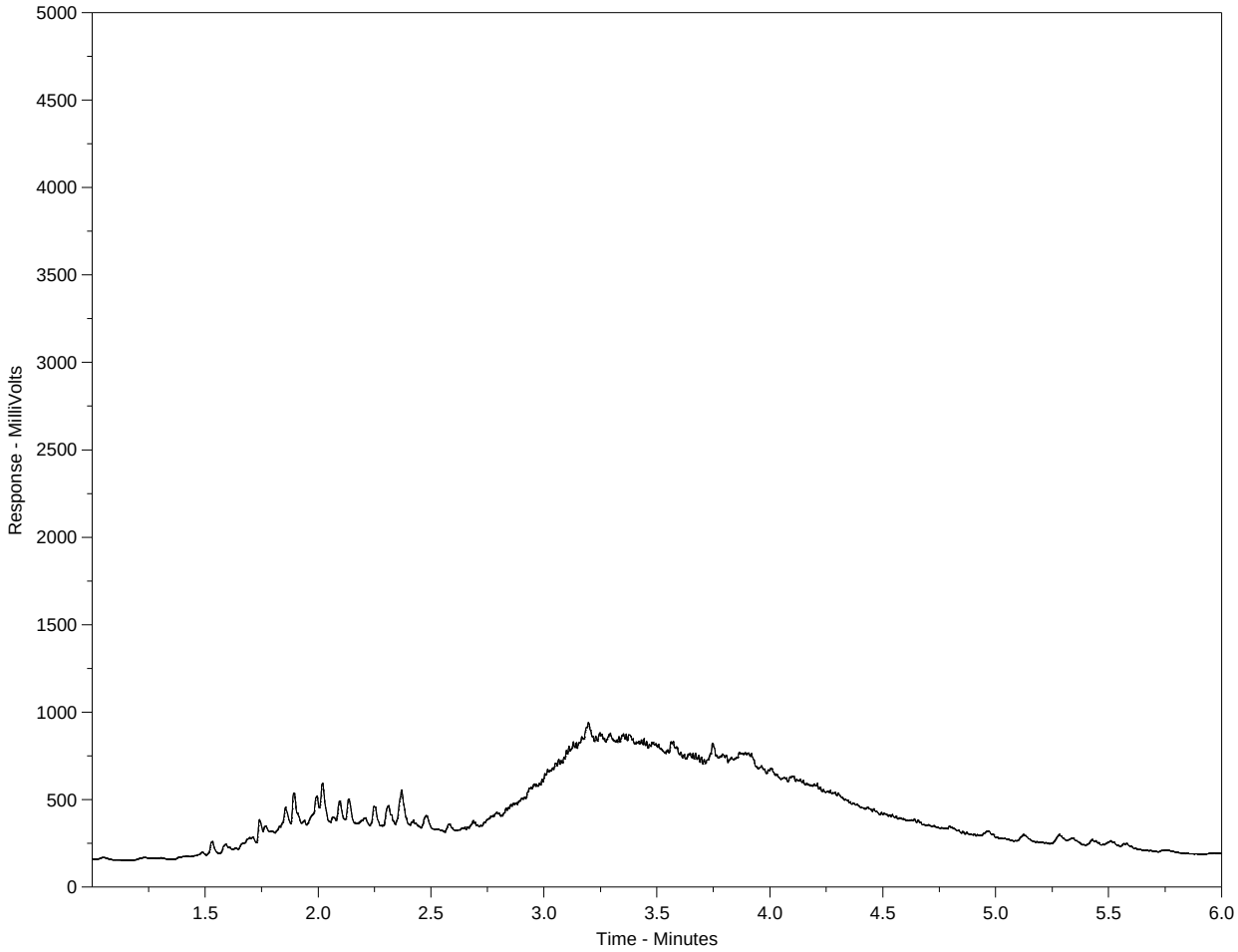
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Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2491823-8
Client ID: EX-12-03



F2	F3	F4	>F4
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

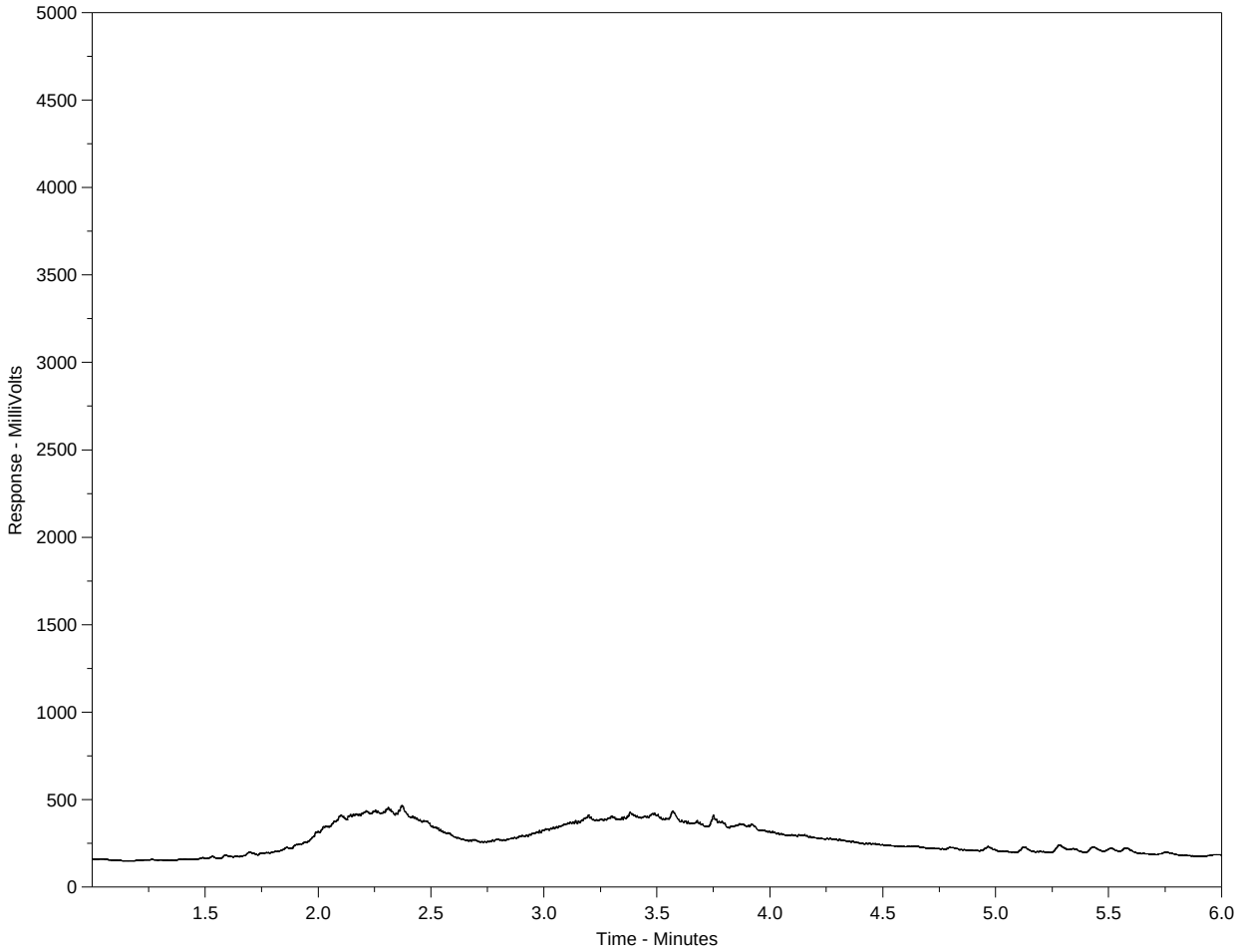
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Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2491823-9
Client ID: EX-12-09



F2	F3	F4	>F4
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

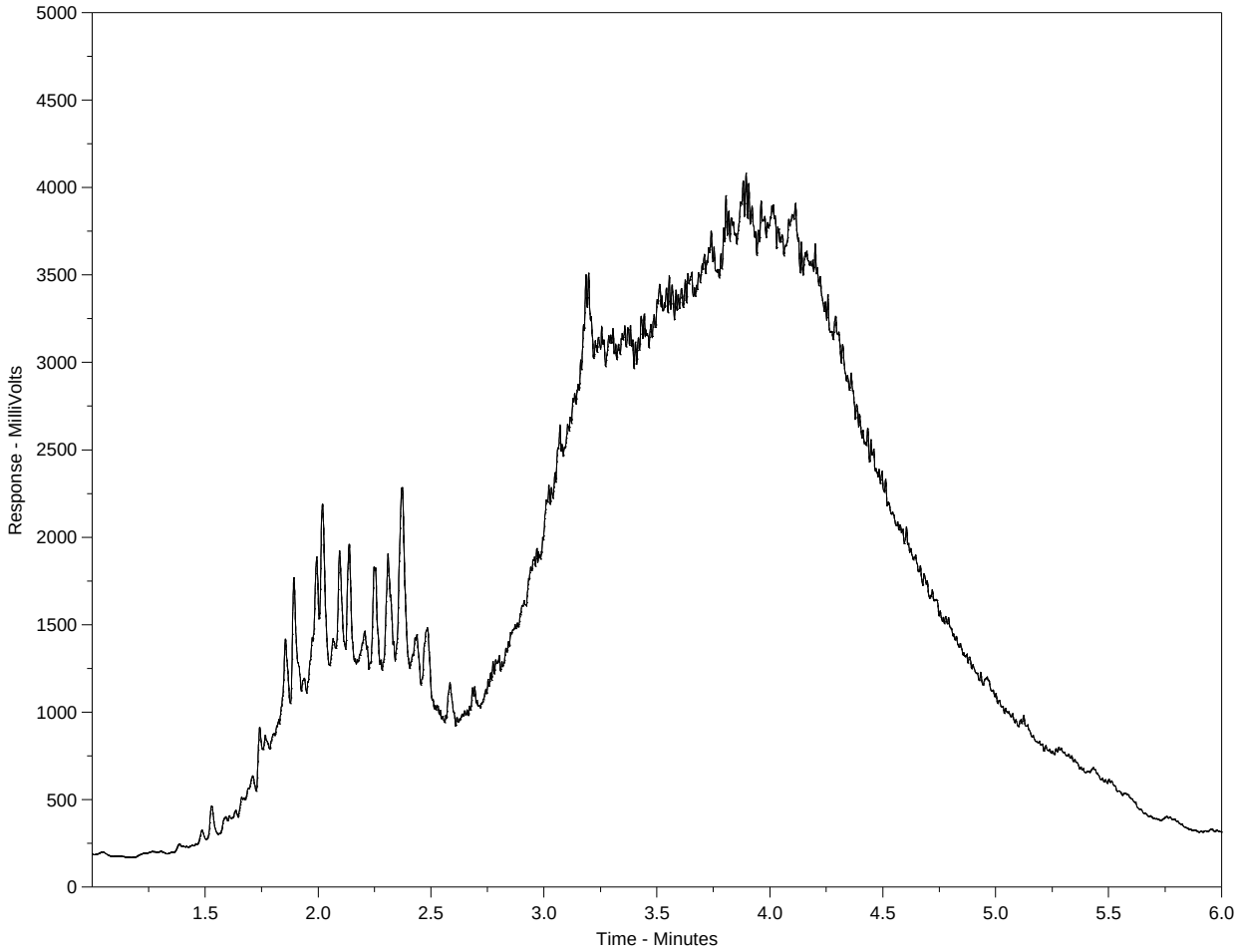
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Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report

ALS Sample ID: L2491823-10
Client ID: EX-12-07



F2	F3	F4	>F4
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

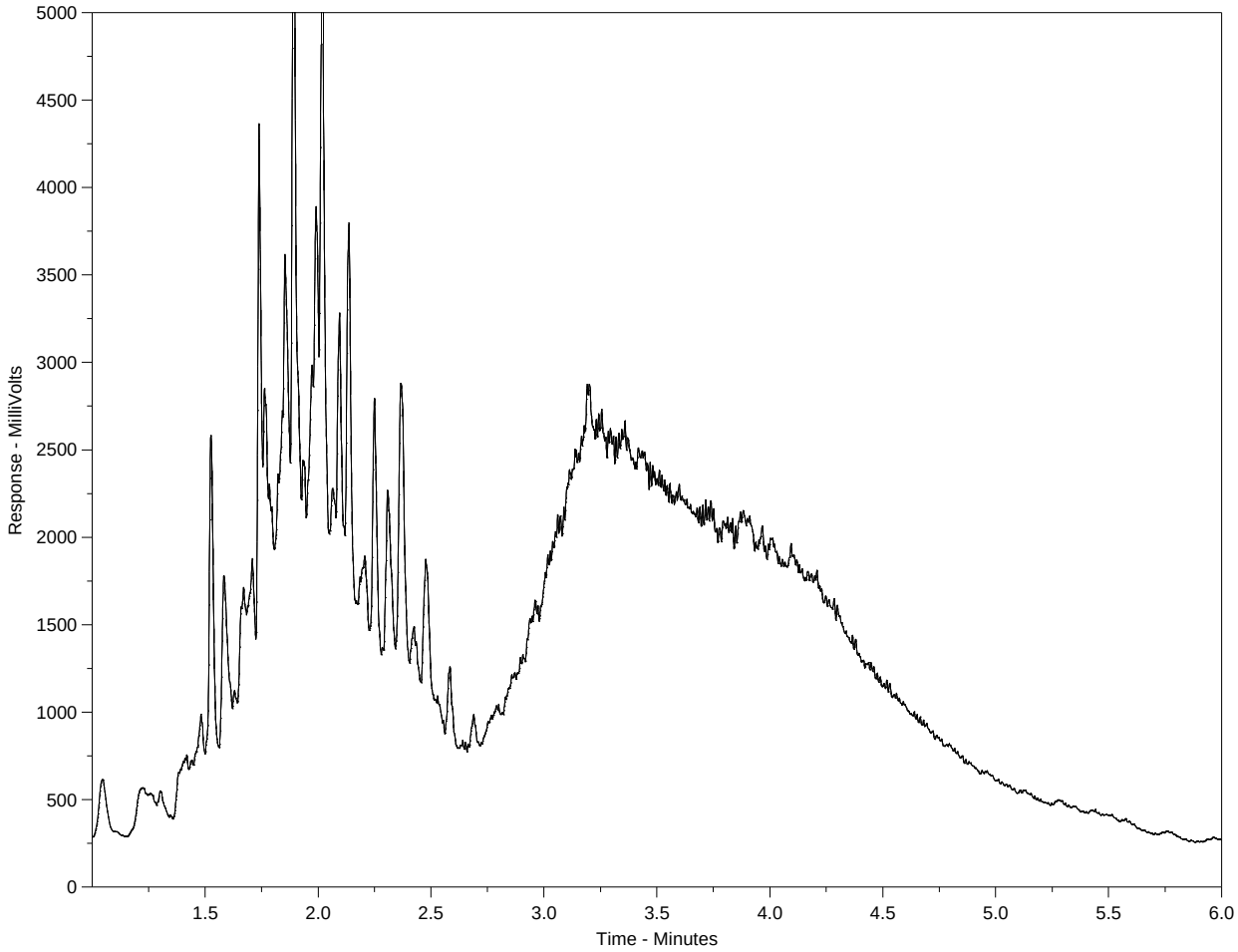
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Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
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Hydrocarbon Distribution Report

ALS Sample ID: L2491823-11
Client ID: EX-12-02



F2	F3	F4	>F4
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
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Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number: 01

Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)

Quality Control (QC) Report with Report ☑ YES ☐ NO

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: k.lewis@mandalayresources.com

Email 2: sfiddler@golder.com

Email 3: jmusijowski@golder.com

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax:

Email 2:

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days):
- 4 day [P4-20%] ☐
- 3 day [P3-25%] ☐
- 2 day [P2-50%] ☐

EMERGENCY:
- 1 Business day [E - 100%] ☑
- Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #:	Q80711
Job #:	19136158
PO / AFE:	
LSD:	

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#:
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (lab use only): L2491823

ALS Contact: Oliver Gregg

Sampler: R. Boyce

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	EX-07-02	17-Aug-20		Soil	3	X		
	EX-07-08	"		"	"	X		
	EX-07-06	"		"	"	X		
	EX-07-09	"		"	"	X		
	EX-08-11	16-Aug-20		"	"	X		
	EX-08-12	"		"	"	X		
	EX-12-08	"		"	"	X		
	EX-12-03	"		"	"	X		
	EX-12-09	"		"	"	X		
	EX-12-07	"		"	"	X		
	EX-12-02	"		"	"	X		

L2491823-COFC

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human consumption/ use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
4.9							

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
Rebecca Boyce	Aug 19/20	8:00	MH	Aug 20/20	9:00			

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCT 2018 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

GOLDER ASSOCIATES LTD
ATTN: Steven Fiddler
16820 107 Ave NW
EDMONTON AB T5P 4C3

Date Received: 31-AUG-20
Report Date: 02-SEP-20 16:50 (MT)
Version: FINAL

Client Phone: 780-483-3499

Certificate of Analysis

Lab Work Order #: L2496479

Project P.O. #: NOT SUBMITTED
Job Reference: 19136158
C of C Numbers:
Legal Site Desc:

Minnie Estigoy, Chem. Eng. Tech. DIPL
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2496479-1 EX-14-02							
Sampled By: R.Boyce on 26-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Toluene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Ethylbenzene	<0.010		0.010	mg/kg	26-AUG-20	01-SEP-20	R5202016
m+p-Xylene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
o-Xylene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Xylenes	<0.10		0.10	mg/kg	26-AUG-20	01-SEP-20	R5202016
Surrogate: 1,4-Difluorobenzene (SS)	93.8		70-130	%	26-AUG-20	01-SEP-20	R5202016
Surrogate: 4-Bromofluorobenzene (SS)	80.4		70-130	%	26-AUG-20	01-SEP-20	R5202016
Surrogate: 3,4-Dichlorotoluene (SS)	79.6		70-130	%	26-AUG-20	01-SEP-20	R5202016
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	91.4		70-130	%	01-SEP-20	02-SEP-20	R5209162
Chrom. to baseline at nC50	YES				01-SEP-20	02-SEP-20	R5209162
Prep/Analysis Dates					01-SEP-20	02-SEP-20	R5209162
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-20	
F1-BTEX	<10		10	mg/kg		02-SEP-20	
F2 (C10-C16)	<20		20	mg/kg		02-SEP-20	
F3 (C16-C34)	76		20	mg/kg		02-SEP-20	
F4 (C34-C50)	41		20	mg/kg		02-SEP-20	
Total Hydrocarbons (C6-C50)	117		20	mg/kg		02-SEP-20	
Miscellaneous Parameters							
% Moisture	12.7		0.25	%		01-SEP-20	R5208576
L2496479-2 EX-14-05							
Sampled By: R.Boyce on 26-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Toluene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Ethylbenzene	<0.010		0.010	mg/kg	26-AUG-20	01-SEP-20	R5202016
m+p-Xylene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
o-Xylene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Xylenes	<0.10		0.10	mg/kg	26-AUG-20	01-SEP-20	R5202016
Surrogate: 1,4-Difluorobenzene (SS)	99.5		70-130	%	26-AUG-20	01-SEP-20	R5202016
Surrogate: 4-Bromofluorobenzene (SS)	81.1		70-130	%	26-AUG-20	01-SEP-20	R5202016
Surrogate: 3,4-Dichlorotoluene (SS)	89.3		70-130	%	26-AUG-20	01-SEP-20	R5202016
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	87.8		70-130	%	01-SEP-20	02-SEP-20	R5209162
Chrom. to baseline at nC50	YES				01-SEP-20	02-SEP-20	R5209162
Prep/Analysis Dates					01-SEP-20	02-SEP-20	R5209162
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-20	
F1-BTEX	<10		10	mg/kg		02-SEP-20	
F2 (C10-C16)	<20		20	mg/kg		02-SEP-20	
F3 (C16-C34)	<20		20	mg/kg		02-SEP-20	
F4 (C34-C50)	<20		20	mg/kg		02-SEP-20	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		02-SEP-20	
Miscellaneous Parameters							
% Moisture	10.1		0.25	%		01-SEP-20	R5208576

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2496479-3 EX-14-04							
Sampled By: R.Boyce on 26-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Toluene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Ethylbenzene	<0.010		0.010	mg/kg	26-AUG-20	01-SEP-20	R5202016
m+p-Xylene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
o-Xylene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Xylenes	<0.10		0.10	mg/kg	26-AUG-20	01-SEP-20	R5202016
Surrogate: 1,4-Difluorobenzene (SS)	89.6		70-130	%	26-AUG-20	01-SEP-20	R5202016
Surrogate: 4-Bromofluorobenzene (SS)	80.4		70-130	%	26-AUG-20	01-SEP-20	R5202016
Surrogate: 3,4-Dichlorotoluene (SS)	81.9		70-130	%	26-AUG-20	01-SEP-20	R5202016
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	82.2		70-130	%	01-SEP-20	02-SEP-20	R5209162
Chrom. to baseline at nC50	YES				01-SEP-20	02-SEP-20	R5209162
Prep/Analysis Dates					01-SEP-20	02-SEP-20	R5209162
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-20	
F1-BTEX	<10		10	mg/kg		02-SEP-20	
F2 (C10-C16)	20		20	mg/kg		02-SEP-20	
F3 (C16-C34)	49		20	mg/kg		02-SEP-20	
F4 (C34-C50)	<20		20	mg/kg		02-SEP-20	
Total Hydrocarbons (C6-C50)	69		20	mg/kg		02-SEP-20	
Miscellaneous Parameters							
% Moisture	12.0		0.25	%		01-SEP-20	R5208576
L2496479-4 EX-14-08							
Sampled By: R.Boyce on 26-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Toluene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Ethylbenzene	<0.010		0.010	mg/kg	26-AUG-20	01-SEP-20	R5202016
m+p-Xylene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
o-Xylene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Xylenes	<0.10		0.10	mg/kg	26-AUG-20	01-SEP-20	R5202016
Surrogate: 1,4-Difluorobenzene (SS)	97.9		70-130	%	26-AUG-20	01-SEP-20	R5202016
Surrogate: 4-Bromofluorobenzene (SS)	83.7		70-130	%	26-AUG-20	01-SEP-20	R5202016
Surrogate: 3,4-Dichlorotoluene (SS)	82.1		70-130	%	26-AUG-20	01-SEP-20	R5202016
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	83.1		70-130	%	01-SEP-20	02-SEP-20	R5209162
Chrom. to baseline at nC50	YES				01-SEP-20	02-SEP-20	R5209162
Prep/Analysis Dates					01-SEP-20	02-SEP-20	R5209162
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-20	
F1-BTEX	<10		10	mg/kg		02-SEP-20	
F2 (C10-C16)	40		20	mg/kg		02-SEP-20	
F3 (C16-C34)	759		20	mg/kg		02-SEP-20	
F4 (C34-C50)	290		20	mg/kg		02-SEP-20	
Total Hydrocarbons (C6-C50)	1090		20	mg/kg		02-SEP-20	
Miscellaneous Parameters							
% Moisture	10.9		0.25	%		01-SEP-20	R5208576

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2496479-5 EX-14-13							
Sampled By: R.Boyce on 26-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Toluene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Ethylbenzene	<0.010		0.010	mg/kg	26-AUG-20	01-SEP-20	R5202016
m+p-Xylene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
o-Xylene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Xylenes	<0.10		0.10	mg/kg	26-AUG-20	01-SEP-20	R5202016
Surrogate: 1,4-Difluorobenzene (SS)	95.9		70-130	%	26-AUG-20	01-SEP-20	R5202016
Surrogate: 4-Bromofluorobenzene (SS)	83.0		70-130	%	26-AUG-20	01-SEP-20	R5202016
Surrogate: 3,4-Dichlorotoluene (SS)	76.3		70-130	%	26-AUG-20	01-SEP-20	R5202016
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	81.2		70-130	%	01-SEP-20	02-SEP-20	R5209162
Chrom. to baseline at nC50	YES				01-SEP-20	02-SEP-20	R5209162
Prep/Analysis Dates					01-SEP-20	02-SEP-20	R5209162
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-20	
F1-BTEX	<10		10	mg/kg		02-SEP-20	
F2 (C10-C16)	69		20	mg/kg		02-SEP-20	
F3 (C16-C34)	912		20	mg/kg		02-SEP-20	
F4 (C34-C50)	380		20	mg/kg		02-SEP-20	
Total Hydrocarbons (C6-C50)	1360		20	mg/kg		02-SEP-20	
Miscellaneous Parameters							
% Moisture	6.72		0.25	%		01-SEP-20	R5208576
L2496479-6 EX-14-07							
Sampled By: R.Boyce on 26-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Toluene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Ethylbenzene	<0.010		0.010	mg/kg	26-AUG-20	01-SEP-20	R5202016
m+p-Xylene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
o-Xylene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Xylenes	<0.10		0.10	mg/kg	26-AUG-20	01-SEP-20	R5202016
Surrogate: 1,4-Difluorobenzene (SS)	95.0		70-130	%	26-AUG-20	01-SEP-20	R5202016
Surrogate: 4-Bromofluorobenzene (SS)	80.7		70-130	%	26-AUG-20	01-SEP-20	R5202016
Surrogate: 3,4-Dichlorotoluene (SS)	81.6		70-130	%	26-AUG-20	01-SEP-20	R5202016
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	86.4		70-130	%	01-SEP-20	02-SEP-20	R5209162
Chrom. to baseline at nC50	YES				01-SEP-20	02-SEP-20	R5209162
Prep/Analysis Dates					01-SEP-20	02-SEP-20	R5209162
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-20	
F1-BTEX	<10		10	mg/kg		02-SEP-20	
F2 (C10-C16)	<20		20	mg/kg		02-SEP-20	
F3 (C16-C34)	78		20	mg/kg		02-SEP-20	
F4 (C34-C50)	47		20	mg/kg		02-SEP-20	
Total Hydrocarbons (C6-C50)	125		20	mg/kg		02-SEP-20	
Miscellaneous Parameters							
% Moisture	12.0		0.25	%		01-SEP-20	R5208576

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2496479-7 EX-14-19							
Sampled By: R.Boyce on 26-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Toluene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Ethylbenzene	<0.010		0.010	mg/kg	26-AUG-20	01-SEP-20	R5202016
m+p-Xylene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
o-Xylene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Xylenes	<0.10		0.10	mg/kg	26-AUG-20	01-SEP-20	R5202016
Surrogate: 1,4-Difluorobenzene (SS)	96.7		70-130	%	26-AUG-20	01-SEP-20	R5202016
Surrogate: 4-Bromofluorobenzene (SS)	83.5		70-130	%	26-AUG-20	01-SEP-20	R5202016
Surrogate: 3,4-Dichlorotoluene (SS)	78.7		70-130	%	26-AUG-20	01-SEP-20	R5202016
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	79.1		70-130	%	01-SEP-20	02-SEP-20	R5209162
Chrom. to baseline at nC50	YES				01-SEP-20	02-SEP-20	R5209162
Prep/Analysis Dates					01-SEP-20	02-SEP-20	R5209162
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-20	
F1-BTEX	<10		10	mg/kg		02-SEP-20	
F2 (C10-C16)	22		20	mg/kg		02-SEP-20	
F3 (C16-C34)	249		20	mg/kg		02-SEP-20	
F4 (C34-C50)	133		20	mg/kg		02-SEP-20	
Total Hydrocarbons (C6-C50)	404		20	mg/kg		02-SEP-20	
Miscellaneous Parameters							
% Moisture	7.54		0.25	%		01-SEP-20	R5208576
L2496479-8 EX-14-05-D							
Sampled By: R.Boyce on 26-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Toluene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Ethylbenzene	<0.010		0.010	mg/kg	26-AUG-20	01-SEP-20	R5202016
m+p-Xylene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
o-Xylene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Xylenes	<0.10		0.10	mg/kg	26-AUG-20	01-SEP-20	R5202016
Surrogate: 1,4-Difluorobenzene (SS)	90.3		70-130	%	26-AUG-20	01-SEP-20	R5202016
Surrogate: 4-Bromofluorobenzene (SS)	75.1		70-130	%	26-AUG-20	01-SEP-20	R5202016
Surrogate: 3,4-Dichlorotoluene (SS)	81.5		70-130	%	26-AUG-20	01-SEP-20	R5202016
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	83.4		70-130	%	01-SEP-20	02-SEP-20	R5209162
Chrom. to baseline at nC50	YES				01-SEP-20	02-SEP-20	R5209162
Prep/Analysis Dates					01-SEP-20	02-SEP-20	R5209162
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-20	
F1-BTEX	<10		10	mg/kg		02-SEP-20	
F2 (C10-C16)	<20		20	mg/kg		02-SEP-20	
F3 (C16-C34)	<20		20	mg/kg		02-SEP-20	
F4 (C34-C50)	<20		20	mg/kg		02-SEP-20	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		02-SEP-20	
Miscellaneous Parameters							
% Moisture	10.2		0.25	%		01-SEP-20	R5208577

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2496479-9 EX-14-11							
Sampled By: R.Boyce on 26-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Toluene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Ethylbenzene	<0.010		0.010	mg/kg	26-AUG-20	01-SEP-20	R5202016
m+p-Xylene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
o-Xylene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Xylenes	<0.10		0.10	mg/kg	26-AUG-20	01-SEP-20	R5202016
Surrogate: 1,4-Difluorobenzene (SS)	91.2		70-130	%	26-AUG-20	01-SEP-20	R5202016
Surrogate: 4-Bromofluorobenzene (SS)	82.0		70-130	%	26-AUG-20	01-SEP-20	R5202016
Surrogate: 3,4-Dichlorotoluene (SS)	77.3		70-130	%	26-AUG-20	01-SEP-20	R5202016
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	87.1		70-130	%	01-SEP-20	02-SEP-20	R5209162
Chrom. to baseline at nC50	YES				01-SEP-20	02-SEP-20	R5209162
Prep/Analysis Dates					01-SEP-20	02-SEP-20	R5209162
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-20	
F1-BTEX	<10		10	mg/kg		02-SEP-20	
F2 (C10-C16)	<20		20	mg/kg		02-SEP-20	
F3 (C16-C34)	268		20	mg/kg		02-SEP-20	
F4 (C34-C50)	94		20	mg/kg		02-SEP-20	
Total Hydrocarbons (C6-C50)	362		20	mg/kg		02-SEP-20	
Miscellaneous Parameters							
% Moisture	8.73		0.25	%		01-SEP-20	R5208577
L2496479-10 EX-14-15							
Sampled By: R.Boyce on 26-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Toluene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Ethylbenzene	<0.010		0.010	mg/kg	26-AUG-20	01-SEP-20	R5202016
m+p-Xylene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
o-Xylene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Xylenes	<0.10		0.10	mg/kg	26-AUG-20	01-SEP-20	R5202016
Surrogate: 1,4-Difluorobenzene (SS)	84.9		70-130	%	26-AUG-20	01-SEP-20	R5202016
Surrogate: 4-Bromofluorobenzene (SS)	89.3		70-130	%	26-AUG-20	01-SEP-20	R5202016
Surrogate: 3,4-Dichlorotoluene (SS)	71.4		70-130	%	26-AUG-20	01-SEP-20	R5202016
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	84.9		70-130	%	01-SEP-20	02-SEP-20	R5209162
Chrom. to baseline at nC50	YES				01-SEP-20	02-SEP-20	R5209162
Prep/Analysis Dates					01-SEP-20	02-SEP-20	R5209162
CCME Total Hydrocarbons							
F1 (C6-C10)	21		10	mg/kg		02-SEP-20	
F1-BTEX	21		10	mg/kg		02-SEP-20	
F2 (C10-C16)	<20		20	mg/kg		02-SEP-20	
F3 (C16-C34)	174		20	mg/kg		02-SEP-20	
F4 (C34-C50)	87		20	mg/kg		02-SEP-20	
Total Hydrocarbons (C6-C50)	282		20	mg/kg		02-SEP-20	
Miscellaneous Parameters							
% Moisture	10.2		0.25	%		01-SEP-20	R5208577

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2496479-11 EX-14-16							
Sampled By: R.Boyce on 26-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Toluene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Ethylbenzene	<0.010		0.010	mg/kg	26-AUG-20	01-SEP-20	R5202016
m+p-Xylene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
o-Xylene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Xylenes	<0.10		0.10	mg/kg	26-AUG-20	01-SEP-20	R5202016
Surrogate: 1,4-Difluorobenzene (SS)	86.7		70-130	%	26-AUG-20	01-SEP-20	R5202016
Surrogate: 4-Bromofluorobenzene (SS)	82.4		70-130	%	26-AUG-20	01-SEP-20	R5202016
Surrogate: 3,4-Dichlorotoluene (SS)	73.0		70-130	%	26-AUG-20	01-SEP-20	R5202016
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	75.6		70-130	%	01-SEP-20	02-SEP-20	R5209162
Chrom. to baseline at nC50	YES				01-SEP-20	02-SEP-20	R5209162
Prep/Analysis Dates					01-SEP-20	02-SEP-20	R5209162
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-20	
F1-BTEX	<10		10	mg/kg		02-SEP-20	
F2 (C10-C16)	80		20	mg/kg		02-SEP-20	
F3 (C16-C34)	398		20	mg/kg		02-SEP-20	
F4 (C34-C50)	206		20	mg/kg		02-SEP-20	
Total Hydrocarbons (C6-C50)	684		20	mg/kg		02-SEP-20	
Miscellaneous Parameters							
% Moisture	6.45		0.25	%		01-SEP-20	R5208577
L2496479-12 EX-14-18							
Sampled By: R.Boyce on 26-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Toluene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Ethylbenzene	<0.010		0.010	mg/kg	26-AUG-20	01-SEP-20	R5202016
m+p-Xylene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
o-Xylene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Xylenes	<0.10		0.10	mg/kg	26-AUG-20	01-SEP-20	R5202016
Surrogate: 1,4-Difluorobenzene (SS)	89.4		70-130	%	26-AUG-20	01-SEP-20	R5202016
Surrogate: 4-Bromofluorobenzene (SS)	99.6		70-130	%	26-AUG-20	01-SEP-20	R5202016
Surrogate: 3,4-Dichlorotoluene (SS)	72.8		70-130	%	26-AUG-20	01-SEP-20	R5202016
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	84.1		70-130	%	01-SEP-20	02-SEP-20	R5209162
Chrom. to baseline at nC50	YES				01-SEP-20	02-SEP-20	R5209162
Prep/Analysis Dates					01-SEP-20	02-SEP-20	R5209162
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-20	
F1-BTEX	<10		10	mg/kg		02-SEP-20	
F2 (C10-C16)	326		20	mg/kg		02-SEP-20	
F3 (C16-C34)	316		20	mg/kg		02-SEP-20	
F4 (C34-C50)	101		20	mg/kg		02-SEP-20	
Total Hydrocarbons (C6-C50)	743		20	mg/kg		02-SEP-20	
Miscellaneous Parameters							
% Moisture	8.87		0.25	%		01-SEP-20	R5208577

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2496479-13 EX-14-23							
Sampled By: R.Boyce on 26-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Toluene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Ethylbenzene	<0.010		0.010	mg/kg	26-AUG-20	01-SEP-20	R5202016
m+p-Xylene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
o-Xylene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Xylenes	<0.10		0.10	mg/kg	26-AUG-20	01-SEP-20	R5202016
Surrogate: 1,4-Difluorobenzene (SS)	100.9		70-130	%	26-AUG-20	01-SEP-20	R5202016
Surrogate: 4-Bromofluorobenzene (SS)	105.7		70-130	%	26-AUG-20	01-SEP-20	R5202016
Surrogate: 3,4-Dichlorotoluene (SS)	75.4		70-130	%	26-AUG-20	01-SEP-20	R5202016
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	77.4		70-130	%	01-SEP-20	02-SEP-20	R5209162
Chrom. to baseline at nC50	YES				01-SEP-20	02-SEP-20	R5209162
Prep/Analysis Dates					01-SEP-20	02-SEP-20	R5209162
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-20	
F1-BTEX	<10		10	mg/kg		02-SEP-20	
F2 (C10-C16)	218		20	mg/kg		02-SEP-20	
F3 (C16-C34)	333		20	mg/kg		02-SEP-20	
F4 (C34-C50)	113		20	mg/kg		02-SEP-20	
Total Hydrocarbons (C6-C50)	664		20	mg/kg		02-SEP-20	
Miscellaneous Parameters							
% Moisture	8.59		0.25	%		01-SEP-20	R5208577
L2496479-14 EX-14-23-D							
Sampled By: R.Boyce on 26-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Toluene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Ethylbenzene	<0.010		0.010	mg/kg	26-AUG-20	01-SEP-20	R5202016
m+p-Xylene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
o-Xylene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Xylenes	<0.10		0.10	mg/kg	26-AUG-20	01-SEP-20	R5202016
Surrogate: 1,4-Difluorobenzene (SS)	84.8		70-130	%	26-AUG-20	01-SEP-20	R5202016
Surrogate: 4-Bromofluorobenzene (SS)	92.9		70-130	%	26-AUG-20	01-SEP-20	R5202016
Surrogate: 3,4-Dichlorotoluene (SS)	72.0		70-130	%	26-AUG-20	01-SEP-20	R5202016
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	84.8		70-130	%	01-SEP-20	02-SEP-20	R5209162
Chrom. to baseline at nC50	YES				01-SEP-20	02-SEP-20	R5209162
Prep/Analysis Dates					01-SEP-20	02-SEP-20	R5209162
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-20	
F1-BTEX	<10		10	mg/kg		02-SEP-20	
F2 (C10-C16)	334		20	mg/kg		02-SEP-20	
F3 (C16-C34)	321		20	mg/kg		02-SEP-20	
F4 (C34-C50)	95		20	mg/kg		02-SEP-20	
Total Hydrocarbons (C6-C50)	750		20	mg/kg		02-SEP-20	
Miscellaneous Parameters							
% Moisture	8.48		0.25	%		01-SEP-20	R5208577

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2496479-15 EX-14-21							
Sampled By: R.Boyce on 26-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Toluene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Ethylbenzene	<0.010		0.010	mg/kg	26-AUG-20	01-SEP-20	R5202016
m+p-Xylene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
o-Xylene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Xylenes	<0.10		0.10	mg/kg	26-AUG-20	01-SEP-20	R5202016
Surrogate: 1,4-Difluorobenzene (SS)	94.9		70-130	%	26-AUG-20	01-SEP-20	R5202016
Surrogate: 4-Bromofluorobenzene (SS)	103.4		70-130	%	26-AUG-20	01-SEP-20	R5202016
Surrogate: 3,4-Dichlorotoluene (SS)	73.4		70-130	%	26-AUG-20	01-SEP-20	R5202016
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	86.4		70-130	%	01-SEP-20	02-SEP-20	R5209162
Chrom. to baseline at nC50	YES				01-SEP-20	02-SEP-20	R5209162
Prep/Analysis Dates					01-SEP-20	02-SEP-20	R5209162
CCME Total Hydrocarbons							
F1 (C6-C10)	11		10	mg/kg		02-SEP-20	
F1-BTEX	11		10	mg/kg		02-SEP-20	
F2 (C10-C16)	46		20	mg/kg		02-SEP-20	
F3 (C16-C34)	341		20	mg/kg		02-SEP-20	
F4 (C34-C50)	147		20	mg/kg		02-SEP-20	
Total Hydrocarbons (C6-C50)	545		20	mg/kg		02-SEP-20	
Miscellaneous Parameters							
% Moisture	8.50		0.25	%		01-SEP-20	R5208577
L2496479-16 EX-15-24							
Sampled By: R.Boyce on 26-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.0179		0.0050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Toluene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Ethylbenzene	<0.010		0.010	mg/kg	26-AUG-20	01-SEP-20	R5202016
m+p-Xylene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
o-Xylene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Xylenes	<0.10		0.10	mg/kg	26-AUG-20	01-SEP-20	R5202016
Surrogate: 1,4-Difluorobenzene (SS)	93.4		70-130	%	26-AUG-20	01-SEP-20	R5202016
Surrogate: 4-Bromofluorobenzene (SS)	90.2		70-130	%	26-AUG-20	01-SEP-20	R5202016
Surrogate: 3,4-Dichlorotoluene (SS)	73.3		70-130	%	26-AUG-20	01-SEP-20	R5202016
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	91.0		70-130	%	01-SEP-20	02-SEP-20	R5209162
Chrom. to baseline at nC50	YES				01-SEP-20	02-SEP-20	R5209162
Prep/Analysis Dates					01-SEP-20	02-SEP-20	R5209162
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-20	
F1-BTEX	<10		10	mg/kg		02-SEP-20	
F2 (C10-C16)	<20		20	mg/kg		02-SEP-20	
F3 (C16-C34)	23		20	mg/kg		02-SEP-20	
F4 (C34-C50)	<20		20	mg/kg		02-SEP-20	
Total Hydrocarbons (C6-C50)	23		20	mg/kg		02-SEP-20	
Miscellaneous Parameters							
% Moisture	7.13		0.25	%		01-SEP-20	R5208577

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BTXS,F1-MEOH-ED	Soil	BTEX and F1	EPA 8260C/5021A and CWS PHC Tier 1

This analysis involves the extraction of a subsample of the sediment/soil with methanol added in the field at the time of subsampling. The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. BTX Target compound concentrations are measured using mass spectrometry detection. The instrumental portion of F1 analysis is carried out in accordance with the Canada Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method (2001).

ETL-TVH,TEH-CCME-ED	Soil	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F2-4-TMB-ED	Soil	CCME Total Extractable Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

This analysis is carried out in accordance with the "Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method, Canadian Council of Ministers of the Environment" For C10 to C50 hydrocarbons (F2, F3, F4) and gravimetric heavy hydrocarbons (F4G-sg), a subsample of the sediment/soil is extracted with 1:1 hexane:acetone using a rotary extractor. The extract undergoes a silica-gel clean-up to remove polar compounds. F2, F3 & F4 are analyzed by on-column GC/FID, and F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where F4 (C34-C50) and F4G-sg results are reported for a sample, the larger of the reported values is used for comparison against the relevant CCME standard for F4.
7. The gravimetric heavy hydrocarbon results (F4G-sg), cannot be added to the C6 to C50 hydrocarbon results.
8. This method is validated for use.
9. Data from analysis of quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram.

PREP-MOISTURE-ED	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)

The weighed portion of soil is placed in a 105°C oven to dry to a constant weight; the drying time will vary based on the moisture content of the soil. The dried soil weight is then used to calculate % moisture.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
ED	ALS ENVIRONMENTAL - EDMONTON, ALBERTA, CANADA

Chain of Custody Numbers:

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Client: GOLDER ASSOCIATES LTD
16820 107 Ave NW
EDMONTON AB T5P 4C3
Contact: Steven Fiddler

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTXS,F1-MEOH-ED	**Soil**							
Batch R5202016								
WG3395964-4 DUP		**L2496479-1**						
Benzene		<0.0050	<0.0050	RPD-NA	mg/kg	N/A	30	02-SEP-20
Toluene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	02-SEP-20
Ethylbenzene		<0.010	<0.010	RPD-NA	mg/kg	N/A	30	02-SEP-20
m+p-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	02-SEP-20
o-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	02-SEP-20
WG3395964-2 LCS								
Benzene			80.3		%		70-130	01-SEP-20
Toluene			83.0		%		70-130	01-SEP-20
Ethylbenzene			85.6		%		70-130	01-SEP-20
m+p-Xylene			95.3		%		70-130	01-SEP-20
o-Xylene			102.8		%		70-130	01-SEP-20
WG3395964-1 MB								
Benzene			<0.0050		mg/kg		0.005	02-SEP-20
Toluene			<0.050		mg/kg		0.05	02-SEP-20
Ethylbenzene			<0.010		mg/kg		0.01	02-SEP-20
m+p-Xylene			<0.050		mg/kg		0.05	02-SEP-20
o-Xylene			<0.050		mg/kg		0.05	02-SEP-20
Surrogate: 1,4-Difluorobenzene (SS)			80.3		%		70-130	02-SEP-20
Surrogate: 4-Bromofluorobenzene (SS)			72.0		%		70-130	02-SEP-20
Surrogate: 3,4-Dichlorotoluene (SS)			90.4		%		70-130	02-SEP-20
F2-4-TMB-ED	**Soil**							
Batch R5209162								
WG3395978-3 DUP		**L2496479-16**						
F2 (C10-C16)		<20	<20	RPD-NA	mg/kg	N/A	40	02-SEP-20
F3 (C16-C34)		23	35	J	mg/kg	12	40	02-SEP-20
F4 (C34-C50)		<20	21	RPD-NA	mg/kg	N/A	40	02-SEP-20
WG3395978-4 IRM		**ALS PHC RM3**						
F2 (C10-C16)			93.8		%		70-130	02-SEP-20
F3 (C16-C34)			90.4		%		70-130	02-SEP-20
F4 (C34-C50)			90.3		%		70-130	02-SEP-20
WG3395978-2 LCS								
F2 (C10-C16)			104.2		%		70-130	02-SEP-20
F3 (C16-C34)			101.3		%		70-130	02-SEP-20
F4 (C34-C50)			102.0		%		70-130	02-SEP-20
WG3395978-1 MB								

Quality Control Report

Workorder: L2496479 Report Date: 02-SEP-20

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-4-TMB-ED	**Soil**							
Batch R5209162								
WG3395978-1 MB								
F2 (C10-C16)			<20		mg/kg		20	02-SEP-20
F3 (C16-C34)			<20		mg/kg		20	02-SEP-20
F4 (C34-C50)			<20		mg/kg		20	02-SEP-20
Surrogate: 2-Bromobenzotrifluoride			93.8		%		70-130	02-SEP-20
PREP-MOISTURE-ED	**Soil**							
Batch R5208576								
WG3396078-2 LCS								
% Moisture			100.0		%		90-110	01-SEP-20
WG3396078-1 MB								
% Moisture			<0.25		%		0.25	01-SEP-20
Batch R5208577								
WG3396099-3 DUP		**L2496479-10**						
% Moisture		10.2	10.7		%	3.9	20	01-SEP-20
WG3396099-2 LCS								
% Moisture			100.0		%		90-110	01-SEP-20
WG3396099-1 MB								
% Moisture			<0.25		%		0.25	01-SEP-20

Quality Control Report

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number:

Page 1 of 2

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report ☑ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax k.lewis@mandalayresources.com
Email 2 sfiddler@golder.com
Email 3 jmusijowski@golder.com

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax
Email 2

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐
EMERGENCY: 1 Business day [E - 100%] ☑ | Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #: Q80711
Job #: 19136158
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only): L2496479
ALS Contact: Oliver Gregg Sampler: R. Boyce

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	EX-14-02	26-Aug-20		Soil	3	X		
	EX-14-05					X		
	EX-14-04					X		
	EX-14-08					X		
	EX-14-13					X		
	EX-14-07					X		
	EX-14-19					X		
	EX-14-05-D					X		
	EX-14-11					X		
	EX-14-15					X		
	EX-14-16					X		
	EX-14-18					X		

L2496479-COFC

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO
Are samples for human consumption/ use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☑ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C	FINAL COOLER TEMPERATURES °C
7.4	

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
Rebecca Boyce RLB	Aug 28/20	9:00		31-Aug	8:15			

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCT 2018 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number:

Page 2 of 2

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution	
Select Report Format:	☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report	☑ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	k.lewis@mandalayresources.com
Email 2	sfiddler@golder.com
Email 3	jmusijowski@golder.com

Invoice Distribution	
Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	
Email 2	

Project Information	
ALS Account # / Quote #:	Q80711
Job #:	1913658
PO / AFE:	
LSD:	

Oil and Gas Required Fields (client use)	
AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (lab use only): L2496479 **ALS Contact:** Oliver Gregg **Sampler:** R. Boyce

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☑ | Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	EX-14-23	26-Aug-20		Soil	3	X		
	EX-14-23-D	"		Soil	3	X		
	EX-14-21	"		Soil	3	X		
	EX-15-24	"		Soil	3	X		

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human consumption/ use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☑ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
7.4							

SHIPMENT RELEASE (client use)		
Released by: Rebecca Boyce RLB	Date: Aug 28/20	Time: 9:00

INITIAL SHIPMENT RECEPTION (lab use only)		
Received by:	Date: 31 Aug	Time: 8:15

FINAL SHIPMENT RECEPTION (lab use only)		
Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCT 2016 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

GOLDER ASSOCIATES LTD
ATTN: Steven Fiddler
16820 107 Ave NW
Edmonton AB T5P 4C3

Date Received: 31-AUG-20
Report Date: 02-SEP-20 16:52 (MT)
Version: FINAL

Client Phone: 780-483-3499

Certificate of Analysis

Lab Work Order #: L2496511

Project P.O. #: NOT SUBMITTED
Job Reference: 19136158
C of C Numbers:
Legal Site Desc:

Harman Bhullar
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2496511-1 EX-15-01							
Sampled By: R.Boyce on 26-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	26-AUG-20	02-SEP-20	R5202016
Toluene	<0.050		0.050	mg/kg	26-AUG-20	02-SEP-20	R5202016
Ethylbenzene	<0.010		0.010	mg/kg	26-AUG-20	02-SEP-20	R5202016
m+p-Xylene	<0.050		0.050	mg/kg	26-AUG-20	02-SEP-20	R5202016
o-Xylene	<0.050		0.050	mg/kg	26-AUG-20	02-SEP-20	R5202016
Xylenes	<0.10		0.10	mg/kg	26-AUG-20	02-SEP-20	R5202016
Surrogate: 1,4-Difluorobenzene (SS)	88.2		70-130	%	26-AUG-20	02-SEP-20	R5202016
Surrogate: 4-Bromofluorobenzene (SS)	75.3		70-130	%	26-AUG-20	02-SEP-20	R5202016
Surrogate: 3,4-Dichlorotoluene (SS)	73.0		70-130	%	26-AUG-20	02-SEP-20	R5202016
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	83.2		70-130	%	02-SEP-20	02-SEP-20	R5209162
Chrom. to baseline at nC50	YES				02-SEP-20	02-SEP-20	R5209162
Prep/Analysis Dates					02-SEP-20	02-SEP-20	R5209162
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-20	
F1-BTEX	<10		10	mg/kg		02-SEP-20	
F2 (C10-C16)	24		20	mg/kg		02-SEP-20	
F3 (C16-C34)	53		20	mg/kg		02-SEP-20	
F4 (C34-C50)	21		20	mg/kg		02-SEP-20	
Total Hydrocarbons (C6-C50)	98		20	mg/kg		02-SEP-20	
Miscellaneous Parameters							
% Moisture	7.30		0.25	%		01-SEP-20	R5208576
L2496511-2 EX-15-02							
Sampled By: R.Boyce on 26-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	26-AUG-20	02-SEP-20	R5202016
Toluene	<0.050		0.050	mg/kg	26-AUG-20	02-SEP-20	R5202016
Ethylbenzene	0.013		0.010	mg/kg	26-AUG-20	02-SEP-20	R5202016
m+p-Xylene	0.054		0.050	mg/kg	26-AUG-20	02-SEP-20	R5202016
o-Xylene	<0.050		0.050	mg/kg	26-AUG-20	02-SEP-20	R5202016
Xylenes	<0.10		0.10	mg/kg	26-AUG-20	02-SEP-20	R5202016
Surrogate: 1,4-Difluorobenzene (SS)	99.1		70-130	%	26-AUG-20	02-SEP-20	R5202016
Surrogate: 4-Bromofluorobenzene (SS)	111.9		70-130	%	26-AUG-20	02-SEP-20	R5202016
Surrogate: 3,4-Dichlorotoluene (SS)	71.2		70-130	%	26-AUG-20	02-SEP-20	R5202016
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	78.5		70-130	%	02-SEP-20	02-SEP-20	R5209162
Chrom. to baseline at nC50	YES				02-SEP-20	02-SEP-20	R5209162
Prep/Analysis Dates					02-SEP-20	02-SEP-20	R5209162
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-20	
F1-BTEX	<10		10	mg/kg		02-SEP-20	
F2 (C10-C16)	<20		20	mg/kg		02-SEP-20	
F3 (C16-C34)	26		20	mg/kg		02-SEP-20	
F4 (C34-C50)	<20		20	mg/kg		02-SEP-20	
Total Hydrocarbons (C6-C50)	26		20	mg/kg		02-SEP-20	
Miscellaneous Parameters							
% Moisture	7.94		0.25	%		01-SEP-20	R5208576

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2496511-3 EX-15-34							
Sampled By: R.Boyce on 26-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	26-AUG-20	02-SEP-20	R5202016
Toluene	<0.050		0.050	mg/kg	26-AUG-20	02-SEP-20	R5202016
Ethylbenzene	<0.010		0.010	mg/kg	26-AUG-20	02-SEP-20	R5202016
m+p-Xylene	<0.050		0.050	mg/kg	26-AUG-20	02-SEP-20	R5202016
o-Xylene	<0.050		0.050	mg/kg	26-AUG-20	02-SEP-20	R5202016
Xylenes	<0.10		0.10	mg/kg	26-AUG-20	02-SEP-20	R5202016
Surrogate: 1,4-Difluorobenzene (SS)	90.3		70-130	%	26-AUG-20	02-SEP-20	R5202016
Surrogate: 4-Bromofluorobenzene (SS)	81.4		70-130	%	26-AUG-20	02-SEP-20	R5202016
Surrogate: 3,4-Dichlorotoluene (SS)	72.3		70-130	%	26-AUG-20	02-SEP-20	R5202016
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	74.7		70-130	%	02-SEP-20	02-SEP-20	R5209162
Chrom. to baseline at nC50	YES				02-SEP-20	02-SEP-20	R5209162
Prep/Analysis Dates					02-SEP-20	02-SEP-20	R5209162
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-20	
F1-BTEX	<10		10	mg/kg		02-SEP-20	
F2 (C10-C16)	<20		20	mg/kg		02-SEP-20	
F3 (C16-C34)	28		20	mg/kg		02-SEP-20	
F4 (C34-C50)	23		20	mg/kg		02-SEP-20	
Total Hydrocarbons (C6-C50)	51		20	mg/kg		02-SEP-20	
Miscellaneous Parameters							
% Moisture	7.60		0.25	%		01-SEP-20	R5208576
L2496511-4 EX-15-36							
Sampled By: R.Boyce on 26-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.0088		0.0050	mg/kg	26-AUG-20	02-SEP-20	R5202016
Toluene	0.109		0.050	mg/kg	26-AUG-20	02-SEP-20	R5202016
Ethylbenzene	0.014		0.010	mg/kg	26-AUG-20	02-SEP-20	R5202016
m+p-Xylene	0.076		0.050	mg/kg	26-AUG-20	02-SEP-20	R5202016
o-Xylene	<0.050		0.050	mg/kg	26-AUG-20	02-SEP-20	R5202016
Xylenes	<0.10		0.10	mg/kg	26-AUG-20	02-SEP-20	R5202016
Surrogate: 1,4-Difluorobenzene (SS)	94.9		70-130	%	26-AUG-20	02-SEP-20	R5202016
Surrogate: 4-Bromofluorobenzene (SS)	93.4		70-130	%	26-AUG-20	02-SEP-20	R5202016
Surrogate: 3,4-Dichlorotoluene (SS)	75.0		70-130	%	26-AUG-20	02-SEP-20	R5202016
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	76.8		70-130	%	02-SEP-20	02-SEP-20	R5209091
Chrom. to baseline at nC50	YES				02-SEP-20	02-SEP-20	R5209091
Prep/Analysis Dates					02-SEP-20	02-SEP-20	R5209091
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-20	
F1-BTEX	<10		10	mg/kg		02-SEP-20	
F2 (C10-C16)	<20		20	mg/kg		02-SEP-20	
F3 (C16-C34)	22		20	mg/kg		02-SEP-20	
F4 (C34-C50)	<20		20	mg/kg		02-SEP-20	
Total Hydrocarbons (C6-C50)	22		20	mg/kg		02-SEP-20	
Miscellaneous Parameters							
% Moisture	7.92		0.25	%		01-SEP-20	R5208576

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2496511-5 EX-15-40							
Sampled By: R.Boyce on 26-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	26-AUG-20	02-SEP-20	R5202016
Toluene	<0.050		0.050	mg/kg	26-AUG-20	02-SEP-20	R5202016
Ethylbenzene	<0.010		0.010	mg/kg	26-AUG-20	02-SEP-20	R5202016
m+p-Xylene	<0.050		0.050	mg/kg	26-AUG-20	02-SEP-20	R5202016
o-Xylene	<0.050		0.050	mg/kg	26-AUG-20	02-SEP-20	R5202016
Xylenes	<0.10		0.10	mg/kg	26-AUG-20	02-SEP-20	R5202016
Surrogate: 1,4-Difluorobenzene (SS)	90.3		70-130	%	26-AUG-20	02-SEP-20	R5202016
Surrogate: 4-Bromofluorobenzene (SS)	81.7		70-130	%	26-AUG-20	02-SEP-20	R5202016
Surrogate: 3,4-Dichlorotoluene (SS)	72.1		70-130	%	26-AUG-20	02-SEP-20	R5202016
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	78.7		70-130	%	02-SEP-20	02-SEP-20	R5209091
Chrom. to baseline at nC50	YES				02-SEP-20	02-SEP-20	R5209091
Prep/Analysis Dates					02-SEP-20	02-SEP-20	R5209091
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-20	
F1-BTEX	<10		10	mg/kg		02-SEP-20	
F2 (C10-C16)	<20		20	mg/kg		02-SEP-20	
F3 (C16-C34)	22		20	mg/kg		02-SEP-20	
F4 (C34-C50)	<20		20	mg/kg		02-SEP-20	
Total Hydrocarbons (C6-C50)	22		20	mg/kg		02-SEP-20	
Miscellaneous Parameters							
% Moisture	10.0		0.25	%		01-SEP-20	R5208576
L2496511-6 EX-15-12							
Sampled By: R.Boyce on 26-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	26-AUG-20	02-SEP-20	R5202016
Toluene	<0.050		0.050	mg/kg	26-AUG-20	02-SEP-20	R5202016
Ethylbenzene	<0.010		0.010	mg/kg	26-AUG-20	02-SEP-20	R5202016
m+p-Xylene	<0.050		0.050	mg/kg	26-AUG-20	02-SEP-20	R5202016
o-Xylene	<0.050		0.050	mg/kg	26-AUG-20	02-SEP-20	R5202016
Xylenes	<0.10		0.10	mg/kg	26-AUG-20	02-SEP-20	R5202016
Surrogate: 1,4-Difluorobenzene (SS)	93.1		70-130	%	26-AUG-20	02-SEP-20	R5202016
Surrogate: 4-Bromofluorobenzene (SS)	77.3		70-130	%	26-AUG-20	02-SEP-20	R5202016
Surrogate: 3,4-Dichlorotoluene (SS)	77.5		70-130	%	26-AUG-20	02-SEP-20	R5202016
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	76.5		70-130	%	02-SEP-20	02-SEP-20	R5209091
Chrom. to baseline at nC50	YES				02-SEP-20	02-SEP-20	R5209091
Prep/Analysis Dates					02-SEP-20	02-SEP-20	R5209091
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-20	
F1-BTEX	<10		10	mg/kg		02-SEP-20	
F2 (C10-C16)	<20		20	mg/kg		02-SEP-20	
F3 (C16-C34)	33		20	mg/kg		02-SEP-20	
F4 (C34-C50)	26		20	mg/kg		02-SEP-20	
Total Hydrocarbons (C6-C50)	59		20	mg/kg		02-SEP-20	
Miscellaneous Parameters							
% Moisture	9.06		0.25	%		01-SEP-20	R5208576

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2496511-7 EX-15-14							
Sampled By: R.Boyce on 26-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	26-AUG-20	02-SEP-20	R5202016
Toluene	<0.050		0.050	mg/kg	26-AUG-20	02-SEP-20	R5202016
Ethylbenzene	<0.010		0.010	mg/kg	26-AUG-20	02-SEP-20	R5202016
m+p-Xylene	<0.050		0.050	mg/kg	26-AUG-20	02-SEP-20	R5202016
o-Xylene	<0.050		0.050	mg/kg	26-AUG-20	02-SEP-20	R5202016
Xylenes	<0.10		0.10	mg/kg	26-AUG-20	02-SEP-20	R5202016
Surrogate: 1,4-Difluorobenzene (SS)	85.6		70-130	%	26-AUG-20	02-SEP-20	R5202016
Surrogate: 4-Bromofluorobenzene (SS)	73.5		70-130	%	26-AUG-20	02-SEP-20	R5202016
Surrogate: 3,4-Dichlorotoluene (SS)	72.1		70-130	%	26-AUG-20	02-SEP-20	R5202016
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	83.4		70-130	%	02-SEP-20	02-SEP-20	R5209091
Chrom. to baseline at nC50	YES				02-SEP-20	02-SEP-20	R5209091
Prep/Analysis Dates					02-SEP-20	02-SEP-20	R5209091
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-20	
F1-BTEX	<10		10	mg/kg		02-SEP-20	
F2 (C10-C16)	31		20	mg/kg		02-SEP-20	
F3 (C16-C34)	26		20	mg/kg		02-SEP-20	
F4 (C34-C50)	<20		20	mg/kg		02-SEP-20	
Total Hydrocarbons (C6-C50)	57		20	mg/kg		02-SEP-20	
Miscellaneous Parameters							
% Moisture	10.7		0.25	%		01-SEP-20	R5208576
L2496511-8 EX-15-42							
Sampled By: R.Boyce on 26-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.0236	RRV	0.0050	mg/kg	26-AUG-20	02-SEP-20	R5202016
Toluene	0.098	RRV	0.050	mg/kg	26-AUG-20	02-SEP-20	R5202016
Ethylbenzene	0.037	RRV	0.010	mg/kg	26-AUG-20	02-SEP-20	R5202016
m+p-Xylene	0.161	RRV	0.050	mg/kg	26-AUG-20	02-SEP-20	R5202016
o-Xylene	0.100	RRV	0.050	mg/kg	26-AUG-20	02-SEP-20	R5202016
Xylenes	0.26		0.10	mg/kg	26-AUG-20	02-SEP-20	R5202016
Surrogate: 1,4-Difluorobenzene (SS)	86.9		70-130	%	26-AUG-20	02-SEP-20	R5202016
Surrogate: 4-Bromofluorobenzene (SS)	91.5		70-130	%	26-AUG-20	02-SEP-20	R5202016
Surrogate: 3,4-Dichlorotoluene (SS)	58.6	SOL:MI	70-130	%	26-AUG-20	02-SEP-20	R5202016
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	79.8		70-130	%	02-SEP-20	02-SEP-20	R5209091
Chrom. to baseline at nC50	YES				02-SEP-20	02-SEP-20	R5209091
Prep/Analysis Dates					02-SEP-20	02-SEP-20	R5209091
CCME Total Hydrocarbons							
F1 (C6-C10)	10	RRV	10	mg/kg		02-SEP-20	
F1-BTEX	<10		10	mg/kg		02-SEP-20	
F2 (C10-C16)	<20		20	mg/kg		02-SEP-20	
F3 (C16-C34)	<20		20	mg/kg		02-SEP-20	
F4 (C34-C50)	<20		20	mg/kg		02-SEP-20	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		02-SEP-20	
Miscellaneous Parameters							
% Moisture	10.1		0.25	%		01-SEP-20	R5208576

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2496511-9 EX-15-42-D							
Sampled By: R.Boyce on 26-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.0309	RRV	0.0050	mg/kg	26-AUG-20	02-SEP-20	R5202016
Toluene	0.211	RRV	0.050	mg/kg	26-AUG-20	02-SEP-20	R5202016
Ethylbenzene	0.053	RRV	0.010	mg/kg	26-AUG-20	02-SEP-20	R5202016
m+p-Xylene	0.231	RRV	0.050	mg/kg	26-AUG-20	02-SEP-20	R5202016
o-Xylene	0.080	RRV	0.050	mg/kg	26-AUG-20	02-SEP-20	R5202016
Xylenes	0.31		0.10	mg/kg	26-AUG-20	02-SEP-20	R5202016
Surrogate: 1,4-Difluorobenzene (SS)	87.8		70-130	%	26-AUG-20	02-SEP-20	R5202016
Surrogate: 4-Bromofluorobenzene (SS)	94.2		70-130	%	26-AUG-20	02-SEP-20	R5202016
Surrogate: 3,4-Dichlorotoluene (SS)	63.0	SOL:MI	70-130	%	26-AUG-20	02-SEP-20	R5202016
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	75.4		70-130	%	02-SEP-20	02-SEP-20	R5209091
Chrom. to baseline at nC50	YES				02-SEP-20	02-SEP-20	R5209091
Prep/Analysis Dates					02-SEP-20	02-SEP-20	R5209091
CCME Total Hydrocarbons							
F1 (C6-C10)	12	RRV	10	mg/kg		02-SEP-20	
F1-BTEX	11		10	mg/kg		02-SEP-20	
F2 (C10-C16)	<20		20	mg/kg		02-SEP-20	
F3 (C16-C34)	<20		20	mg/kg		02-SEP-20	
F4 (C34-C50)	<20		20	mg/kg		02-SEP-20	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		02-SEP-20	
Miscellaneous Parameters							
% Moisture	10.2		0.25	%		01-SEP-20	R5208576
L2496511-10 EX-15-17							
Sampled By: R.Boyce on 26-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Toluene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Ethylbenzene	<0.010		0.010	mg/kg	26-AUG-20	01-SEP-20	R5202016
m+p-Xylene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
o-Xylene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Xylenes	<0.10		0.10	mg/kg	26-AUG-20	01-SEP-20	R5202016
Surrogate: 1,4-Difluorobenzene (SS)	93.0		70-130	%	26-AUG-20	01-SEP-20	R5202016
Surrogate: 4-Bromofluorobenzene (SS)	74.2		70-130	%	26-AUG-20	01-SEP-20	R5202016
Surrogate: 3,4-Dichlorotoluene (SS)	91.8		70-130	%	26-AUG-20	01-SEP-20	R5202016
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	83.4		70-130	%	02-SEP-20	02-SEP-20	R5209091
Chrom. to baseline at nC50	YES				02-SEP-20	02-SEP-20	R5209091
Prep/Analysis Dates					02-SEP-20	02-SEP-20	R5209091
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-20	
F1-BTEX	<10		10	mg/kg		02-SEP-20	
F2 (C10-C16)	<20		20	mg/kg		02-SEP-20	
F3 (C16-C34)	<20		20	mg/kg		02-SEP-20	
F4 (C34-C50)	<20		20	mg/kg		02-SEP-20	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		02-SEP-20	
Miscellaneous Parameters							
% Moisture	8.24		0.25	%		01-SEP-20	R5208576

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2496511-11 EX-15-20							
Sampled By: R.Boyce on 26-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.959		0.0050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Toluene	13.9	DLHC	0.40	mg/kg	26-AUG-20	01-SEP-20	R5202016
Ethylbenzene	0.238		0.010	mg/kg	26-AUG-20	01-SEP-20	R5202016
m+p-Xylene	1.23		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
o-Xylene	0.470		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Xylenes	1.70		0.10	mg/kg	26-AUG-20	01-SEP-20	R5202016
Surrogate: 1,4-Difluorobenzene (SS)	82.7		70-130	%	26-AUG-20	01-SEP-20	R5202016
Surrogate: 4-Bromofluorobenzene (SS)	93.5		70-130	%	26-AUG-20	01-SEP-20	R5202016
Surrogate: 3,4-Dichlorotoluene (SS)	66.3	SOL:MI	70-130	%	26-AUG-20	01-SEP-20	R5202016
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	85.0		70-130	%	02-SEP-20	02-SEP-20	R5209091
Chrom. to baseline at nC50	YES				02-SEP-20	02-SEP-20	R5209091
Prep/Analysis Dates					02-SEP-20	02-SEP-20	R5209091
CCME Total Hydrocarbons							
F1 (C6-C10)	41	DLHC	40	mg/kg		02-SEP-20	
F1-BTEX	<40		40	mg/kg		02-SEP-20	
F2 (C10-C16)	<20		20	mg/kg		02-SEP-20	
F3 (C16-C34)	31		20	mg/kg		02-SEP-20	
F4 (C34-C50)	<20		20	mg/kg		02-SEP-20	
Total Hydrocarbons (C6-C50)	72		40	mg/kg		02-SEP-20	
Miscellaneous Parameters							
% Moisture	8.97		0.25	%		01-SEP-20	R5208576
L2496511-12 EX-15-22							
Sampled By: R.Boyce on 26-AUG-20							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Toluene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Ethylbenzene	<0.010		0.010	mg/kg	26-AUG-20	01-SEP-20	R5202016
m+p-Xylene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
o-Xylene	<0.050		0.050	mg/kg	26-AUG-20	01-SEP-20	R5202016
Xylenes	<0.10		0.10	mg/kg	26-AUG-20	01-SEP-20	R5202016
Surrogate: 1,4-Difluorobenzene (SS)	100.4		70-130	%	26-AUG-20	01-SEP-20	R5202016
Surrogate: 4-Bromofluorobenzene (SS)	92.8		70-130	%	26-AUG-20	01-SEP-20	R5202016
Surrogate: 3,4-Dichlorotoluene (SS)	80.3		70-130	%	26-AUG-20	01-SEP-20	R5202016
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	83.2		70-130	%	02-SEP-20	02-SEP-20	R5209091
Chrom. to baseline at nC50	YES				02-SEP-20	02-SEP-20	R5209091
Prep/Analysis Dates					02-SEP-20	02-SEP-20	R5209091
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-20	
F1-BTEX	<10		10	mg/kg		02-SEP-20	
F2 (C10-C16)	<20		20	mg/kg		02-SEP-20	
F3 (C16-C34)	27		20	mg/kg		02-SEP-20	
F4 (C34-C50)	20		20	mg/kg		02-SEP-20	
Total Hydrocarbons (C6-C50)	47		20	mg/kg		02-SEP-20	
Miscellaneous Parameters							
% Moisture	8.00		0.25	%		01-SEP-20	R5208576

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).
RRV	Reported Result Verified By Repeat Analysis
SOL:MI	Surrogate recovery outside acceptable limits due to matrix interference

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BTXS,F1-MEOH-ED	Soil	BTEX and F1	EPA 8260C/5021A and CWS PHC Tier 1

This analysis involves the extraction of a subsample of the sediment/soil with methanol added in the field at the time of subsampling. The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. BTX Target compound concentrations are measured using mass spectrometry detection. The instrumental portion of F1 analysis is carried out in accordance with the Canada Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method (2001).

ETL-TVH,TEH-CCME-ED	Soil	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F2-4-TMB-ED	Soil	CCME Total Extractable Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

This analysis is carried out in accordance with the "Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method, Canadian Council of Ministers of the Environment" For C10 to C50 hydrocarbons (F2, F3, F4) and gravimetric heavy hydrocarbons (F4G-sg), a subsample of the sediment/soil is extracted with 1:1 hexane:acetone using a rotary extractor. The extract undergoes a silica-gel clean-up to remove polar compounds. F2, F3 & F4 are analyzed by on-column GC/FID, and F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where F4 (C34-C50) and F4G-sg results are reported for a sample, the larger of the reported values is used for comparison against the relevant CCME standard for F4.
7. The gravimetric heavy hydrocarbon results (F4G-sg), cannot be added to the C6 to C50 hydrocarbon results.
8. This method is validated for use.
9. Data from analysis of quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram.

PREP-MOISTURE-ED	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)

The weighed portion of soil is placed in a 105°C oven to dry to a constant weight; the drying time will vary based on the moisture content of the soil. The dried soil weight is then used to calculate % moisture.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

Laboratory Definition Code	Laboratory Location
ED	ALS ENVIRONMENTAL - EDMONTON, ALBERTA, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Client: GOLDER ASSOCIATES LTD
16820 107 Ave NW
Edmonton AB T5P 4C3
Contact: Steven Fiddler

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTXS,F1-MEOH-ED	**Soil**							
Batch R5202016								
WG3396025-4 DUP		**L2496511-1**						
Benzene		<0.0050	<0.0050	RPD-NA	mg/kg	N/A	30	02-SEP-20
Toluene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	02-SEP-20
Ethylbenzene		<0.010	<0.010	RPD-NA	mg/kg	N/A	30	02-SEP-20
m+p-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	02-SEP-20
o-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	02-SEP-20
WG3395964-2 LCS								
Benzene			80.3		%		70-130	01-SEP-20
Toluene			83.0		%		70-130	01-SEP-20
Ethylbenzene			85.6		%		70-130	01-SEP-20
m+p-Xylene			95.3		%		70-130	01-SEP-20
o-Xylene			102.8		%		70-130	01-SEP-20
WG3396025-2 LCS								
Benzene			78.6		%		70-130	02-SEP-20
Toluene			84.9		%		70-130	02-SEP-20
Ethylbenzene			90.5		%		70-130	02-SEP-20
m+p-Xylene			94.6		%		70-130	02-SEP-20
o-Xylene			106.2		%		70-130	02-SEP-20
WG3395964-1 MB								
Benzene			<0.0050		mg/kg		0.005	02-SEP-20
Toluene			<0.050		mg/kg		0.05	02-SEP-20
Ethylbenzene			<0.010		mg/kg		0.01	02-SEP-20
m+p-Xylene			<0.050		mg/kg		0.05	02-SEP-20
o-Xylene			<0.050		mg/kg		0.05	02-SEP-20
Surrogate: 1,4-Difluorobenzene (SS)			80.3		%		70-130	02-SEP-20
Surrogate: 4-Bromofluorobenzene (SS)			72.0		%		70-130	02-SEP-20
Surrogate: 3,4-Dichlorotoluene (SS)			90.4		%		70-130	02-SEP-20
WG3396025-1 MB								
Benzene			<0.0050		mg/kg		0.005	02-SEP-20
Toluene			<0.050		mg/kg		0.05	02-SEP-20
Ethylbenzene			<0.010		mg/kg		0.01	02-SEP-20
m+p-Xylene			<0.050		mg/kg		0.05	02-SEP-20
o-Xylene			<0.050		mg/kg		0.05	02-SEP-20
Surrogate: 1,4-Difluorobenzene (SS)			88.7		%		70-130	02-SEP-20
Surrogate: 4-Bromofluorobenzene (SS)			72.9		%		70-130	02-SEP-20
Surrogate: 3,4-Dichlorotoluene (SS)			76.2		%		70-130	02-SEP-20

Quality Control Report

Workorder: L2496511 Report Date: 02-SEP-20

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-4-TMB-ED	**Soil**							
Batch R5209091								
WG3396011-4 DUP		**L2496511-12**						
F2 (C10-C16)		<20	<20	RPD-NA	mg/kg	N/A	40	02-SEP-20
F3 (C16-C34)		27	29		mg/kg	5.3	40	02-SEP-20
F4 (C34-C50)		20	24		mg/kg	14	40	02-SEP-20
WG3396011-3 IRM		**ALS PHC RM3**						
F2 (C10-C16)			90.5		%		70-130	02-SEP-20
F3 (C16-C34)			89.7		%		70-130	02-SEP-20
F4 (C34-C50)			99.1		%		70-130	02-SEP-20
WG3396011-2 LCS		**DIESEL/MOTOR OIL**						
F2 (C10-C16)			110.0		%		70-130	02-SEP-20
F3 (C16-C34)			109.9		%		70-130	02-SEP-20
F4 (C34-C50)			118.9		%		70-130	02-SEP-20
WG3396011-1 MB								
F2 (C10-C16)			<20		mg/kg		20	02-SEP-20
F3 (C16-C34)			<20		mg/kg		20	02-SEP-20
F4 (C34-C50)			<20		mg/kg		20	02-SEP-20
Surrogate: 2-Bromobenzotrifluoride			86.3		%		70-130	02-SEP-20
Batch R5209162								
WG3395978-4 IRM		**ALS PHC RM3**						
F2 (C10-C16)			93.8		%		70-130	02-SEP-20
F3 (C16-C34)			90.4		%		70-130	02-SEP-20
F4 (C34-C50)			90.3		%		70-130	02-SEP-20
WG3395978-2 LCS								
F2 (C10-C16)			104.2		%		70-130	02-SEP-20
F3 (C16-C34)			101.3		%		70-130	02-SEP-20
F4 (C34-C50)			102.0		%		70-130	02-SEP-20
WG3395978-1 MB								
F2 (C10-C16)			<20		mg/kg		20	02-SEP-20
F3 (C16-C34)			<20		mg/kg		20	02-SEP-20
F4 (C34-C50)			<20		mg/kg		20	02-SEP-20
Surrogate: 2-Bromobenzotrifluoride			93.8		%		70-130	02-SEP-20
PREP-MOISTURE-ED	**Soil**							
Batch R5208576								
WG3396078-2 LCS								
% Moisture			100.0		%		90-110	01-SEP-20
WG3396078-1 MB								
% Moisture			<0.25		%		0.25	01-SEP-20

Quality Control Report

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number:

Page of

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report ☑ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax	k.lewis@mandalayresources.com
Email 2	sfiddler@golder.com
Email 3	jmusijowski@golder.com

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax	
Email 2	

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☑ | Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #:	Q80711
Job #:	19136158
PO / AFE:	
LSD:	

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (lab use only): L2496511 **ALS Contact:** Oliver Gregg **Sampler:** R. Boyce

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	EX-15-01	26-Aug-20		Soil	3	X		
	EX-15-02				3	X		
	EX-15-34				3	X		
	EX-15-36					X		
	EX-15-40					X		
	EX-15-12					X		
	EX-15-14					X		
	EX-15-42					X		
	EX-15-42-D					X		
	EX-15-17					X		
	EX-15-20					X		
	EX-15-22					X		

L2496511-COFC

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human consumption/ use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
7.4					

SHIPMENT RELEASE (client use)

Released by:	Date:	Time:
Rebecca Boyce RLB	Aug 27/20	9:00

INITIAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:
MA	Aug 31/20	8:15

FINAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:

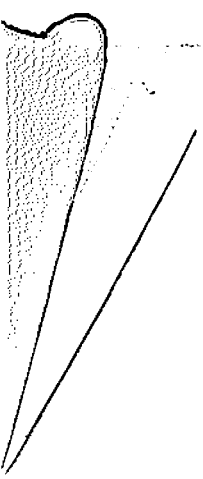
REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCT 2018 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.



GOLDER ASSOCIATES LTD
ATTN: Steven Fiddler
16820 107 Ave NW
Edmonton AB T5P 4C3

Date Received: 14-JUL-21
Report Date: 17-JUL-21 13:10 (MT)
Version: FINAL

Client Phone: 780-483-3499

Certificate of Analysis

Lab Work Order #: L2614352

Project P.O. #: NOT SUBMITTED
Job Reference: 20446521
C of C Numbers:
Legal Site Desc:

Harman Bhullar
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2614352-1 EX8-21-1							
Sampled By: CLIENT on 12-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	12-JUL-21	16-JUL-21	R5494432
Toluene	<0.050		0.050	mg/kg	12-JUL-21	16-JUL-21	R5494432
Ethylbenzene	<0.010		0.010	mg/kg	12-JUL-21	16-JUL-21	R5494432
Xylenes	<0.10		0.10	mg/kg	12-JUL-21	16-JUL-21	R5494432
m+p-Xylene	<0.050		0.050	mg/kg	12-JUL-21	16-JUL-21	R5494432
o-Xylene	<0.050		0.050	mg/kg	12-JUL-21	16-JUL-21	R5494432
Surrogate: 1,4-Difluorobenzene (SS)	114.4		70-130	%	12-JUL-21	16-JUL-21	R5494432
Surrogate: 4-Bromofluorobenzene (SS)	108.5		70-130	%	12-JUL-21	16-JUL-21	R5494432
Surrogate: 3,4-Dichlorotoluene (SS)	114.0		70-130	%	12-JUL-21	16-JUL-21	R5494432
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	98.2		70-130	%	17-JUL-21	17-JUL-21	R5524512
Chrom. to baseline at nC50	YES				17-JUL-21	17-JUL-21	R5524512
Prep/Analysis Dates					17-JUL-21	17-JUL-21	R5524512
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		17-JUL-21	
F1-BTEX	<10		10	mg/kg		17-JUL-21	
F2 (C10-C16)	31		20	mg/kg		17-JUL-21	
F3 (C16-C34)	<20		20	mg/kg		17-JUL-21	
F4 (C34-C50)	<20		20	mg/kg		17-JUL-21	
Total Hydrocarbons (C6-C50)	31		20	mg/kg		17-JUL-21	
Miscellaneous Parameters							
% Moisture	11.7		0.25	%		16-JUL-21	R5524347
L2614352-2 EX8-21-2							
Sampled By: CLIENT on 12-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	12-JUL-21	16-JUL-21	R5494432
Toluene	<0.050		0.050	mg/kg	12-JUL-21	16-JUL-21	R5494432
Ethylbenzene	<0.010		0.010	mg/kg	12-JUL-21	16-JUL-21	R5494432
Xylenes	<0.10		0.10	mg/kg	12-JUL-21	16-JUL-21	R5494432
m+p-Xylene	<0.050		0.050	mg/kg	12-JUL-21	16-JUL-21	R5494432
o-Xylene	<0.050		0.050	mg/kg	12-JUL-21	16-JUL-21	R5494432
Surrogate: 1,4-Difluorobenzene (SS)	100.9		70-130	%	12-JUL-21	16-JUL-21	R5494432
Surrogate: 4-Bromofluorobenzene (SS)	101.2		70-130	%	12-JUL-21	16-JUL-21	R5494432
Surrogate: 3,4-Dichlorotoluene (SS)	104.9		70-130	%	12-JUL-21	16-JUL-21	R5494432
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	96.5		70-130	%	17-JUL-21	17-JUL-21	R5524512
Chrom. to baseline at nC50	YES				17-JUL-21	17-JUL-21	R5524512
Prep/Analysis Dates					17-JUL-21	17-JUL-21	R5524512
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		17-JUL-21	
F1-BTEX	<10		10	mg/kg		17-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		17-JUL-21	
F3 (C16-C34)	<20		20	mg/kg		17-JUL-21	
F4 (C34-C50)	<20		20	mg/kg		17-JUL-21	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		17-JUL-21	
Miscellaneous Parameters							
% Moisture	12.7		0.25	%		16-JUL-21	R5524347

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2614352-3 EX8-21-3							
Sampled By: CLIENT on 12-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	12-JUL-21	16-JUL-21	R5494432
Toluene	<0.050		0.050	mg/kg	12-JUL-21	16-JUL-21	R5494432
Ethylbenzene	<0.010		0.010	mg/kg	12-JUL-21	16-JUL-21	R5494432
Xylenes	<0.10		0.10	mg/kg	12-JUL-21	16-JUL-21	R5494432
m+p-Xylene	<0.050		0.050	mg/kg	12-JUL-21	16-JUL-21	R5494432
o-Xylene	<0.050		0.050	mg/kg	12-JUL-21	16-JUL-21	R5494432
Surrogate: 1,4-Difluorobenzene (SS)	111.9		70-130	%	12-JUL-21	16-JUL-21	R5494432
Surrogate: 4-Bromofluorobenzene (SS)	96.3		70-130	%	12-JUL-21	16-JUL-21	R5494432
Surrogate: 3,4-Dichlorotoluene (SS)	109.8		70-130	%	12-JUL-21	16-JUL-21	R5494432
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	96.1		70-130	%	17-JUL-21	17-JUL-21	R5524512
Chrom. to baseline at nC50	YES				17-JUL-21	17-JUL-21	R5524512
Prep/Analysis Dates					17-JUL-21	17-JUL-21	R5524512
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		17-JUL-21	
F1-BTEX	<10		10	mg/kg		17-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		17-JUL-21	
F3 (C16-C34)	<20		20	mg/kg		17-JUL-21	
F4 (C34-C50)	<20		20	mg/kg		17-JUL-21	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		17-JUL-21	
Miscellaneous Parameters							
% Moisture	11.9		0.25	%		16-JUL-21	R5524347
L2614352-4 EX8-21-4							
Sampled By: CLIENT on 12-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	12-JUL-21	16-JUL-21	R5494432
Toluene	<0.050		0.050	mg/kg	12-JUL-21	16-JUL-21	R5494432
Ethylbenzene	0.014		0.010	mg/kg	12-JUL-21	16-JUL-21	R5494432
Xylenes	<0.10		0.10	mg/kg	12-JUL-21	16-JUL-21	R5494432
m+p-Xylene	<0.050		0.050	mg/kg	12-JUL-21	16-JUL-21	R5494432
o-Xylene	<0.050		0.050	mg/kg	12-JUL-21	16-JUL-21	R5494432
Surrogate: 1,4-Difluorobenzene (SS)	107.3		70-130	%	12-JUL-21	16-JUL-21	R5494432
Surrogate: 4-Bromofluorobenzene (SS)	127.7		70-130	%	12-JUL-21	16-JUL-21	R5494432
Surrogate: 3,4-Dichlorotoluene (SS)	94.3		70-130	%	12-JUL-21	16-JUL-21	R5494432
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	100.0		70-130	%	17-JUL-21	17-JUL-21	R5524512
Chrom. to baseline at nC50	YES				17-JUL-21	17-JUL-21	R5524512
Prep/Analysis Dates					17-JUL-21	17-JUL-21	R5524512
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		17-JUL-21	
F1-BTEX	<10		10	mg/kg		17-JUL-21	
F2 (C10-C16)	78		20	mg/kg		17-JUL-21	
F3 (C16-C34)	96		20	mg/kg		17-JUL-21	
F4 (C34-C50)	27		20	mg/kg		17-JUL-21	
Total Hydrocarbons (C6-C50)	201		20	mg/kg		17-JUL-21	
Miscellaneous Parameters							
% Moisture	11.3		0.25	%		16-JUL-21	R5524347

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BTXS,F1-MEOH-ED	Soil	BTEX and F1	EPA 8260C/5021A and CWS PHC Tier 1

This analysis involves the extraction of a subsample of the sediment/soil with methanol added in the field at the time of subsampling. The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. BTX Target compound concentrations are measured using mass spectrometry detection. The instrumental portion of F1 analysis is carried out in accordance with the Canada Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method (2001).

ETL-TVH,TEH-CCME-ED	Soil	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F2-4-TMB-ED	Soil	CCME Total Extractable Hydrocarbons	CCME Tier 1

This analysis is carried out in accordance with the "Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method, Canadian Council of Ministers of the Environment" For C10 to C50 hydrocarbons (F2, F3, F4) and gravimetric heavy hydrocarbons (F4G-sg), a subsample of the sediment/soil is extracted with 1:1 hexane:acetone using a rotary extractor. The extract undergoes a silica-gel clean-up to remove polar compounds. F2, F3 & F4 are analyzed by on-column GC/FID, and F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where F4 (C34-C50) and F4G-sg results are reported for a sample, the larger of the reported values is used for comparison against the relevant CCME standard for F4.
7. The gravimetric heavy hydrocarbon results (F4G-sg), cannot be added to the C6 to C50 hydrocarbon results.
8. This method is validated for use.
9. Data from analysis of quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram.

PREP-MOISTURE-ED	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)

The weighed portion of soil is placed in a 105°C oven to dry to a constant weight; the drying time will vary based on the moisture content of the soil. The dried soil weight is then used to calculate % moisture.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
ED	ALS ENVIRONMENTAL - EDMONTON, ALBERTA, CANADA

Chain of Custody Numbers:

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L2614352 Report Date: 17-JUL-21

Client: GOLDER ASSOCIATES LTD
16820 107 Ave NW
Edmonton AB T5P 4C3
Contact: Steven Fiddler

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTXS,F1-MEOH-ED	**Soil**							
Batch R5494432								
WG3577743-2 LCS								
Benzene			77.5		%		70-130	16-JUL-21
Toluene			87.9		%		70-130	16-JUL-21
Ethylbenzene			89.1		%		70-130	16-JUL-21
m+p-Xylene			95.4		%		70-130	16-JUL-21
o-Xylene			96.2		%		70-130	16-JUL-21
WG3577743-1 MB								
Benzene			<0.0050		mg/kg		0.005	16-JUL-21
Toluene			<0.050		mg/kg		0.05	16-JUL-21
Ethylbenzene			<0.010		mg/kg		0.01	16-JUL-21
m+p-Xylene			<0.050		mg/kg		0.05	16-JUL-21
o-Xylene			<0.050		mg/kg		0.05	16-JUL-21
Surrogate: 1,4-Difluorobenzene (SS)			102.5		%		70-130	16-JUL-21
Surrogate: 4-Bromofluorobenzene (SS)			92.7		%		70-130	16-JUL-21
Surrogate: 3,4-Dichlorotoluene (SS)			110.3		%		70-130	16-JUL-21
F2-4-TMB-ED	**Soil**							
Batch R5524512								
WG3577744-3 IRM		**ALS PHC RM3**						
F2 (C10-C16)			94.6		%		70-130	17-JUL-21
F3 (C16-C34)			94.9		%		70-130	17-JUL-21
F4 (C34-C50)			87.8		%		70-130	17-JUL-21
WG3577744-2 LCS		**DIESEL/MOTOR OIL**						
F2 (C10-C16)			112.8		%		70-130	17-JUL-21
F3 (C16-C34)			113.9		%		70-130	17-JUL-21
F4 (C34-C50)			113.0		%		70-130	17-JUL-21
WG3577744-1 MB								
F2 (C10-C16)			<20		mg/kg		20	17-JUL-21
F3 (C16-C34)			<20		mg/kg		20	17-JUL-21
F4 (C34-C50)			<20		mg/kg		20	17-JUL-21
Surrogate: 2-Bromobenzotrifluoride			98.7		%		70-130	17-JUL-21
PREP-MOISTURE-ED	**Soil**							
Batch R5524347								
WG3577775-2 LCS								
% Moisture			99.3		%		90-110	16-JUL-21
WG3577775-1 MB								
% Moisture			<0.25		%		0.25	16-JUL-21

Quality Control Report

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2614352-COFC

COC Number:

Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution	
Select Report Format:	☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report	☑ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	k.lewis@mandalayresources.com
Email 2	sfiddler@golder.com
Email 3	jmusijowski@golder.com

Invoice Distribution	
Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	
Email 2	

Project Information	
ALS Account # / Quote #:	Q80711
Job #:	20446521
PO / AFE:	
LSD:	

Oil and Gas Required Fields (client use)	
AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (lab use only):

ALS Contact: Oliver Gregg

Sampler:

- Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☑ | Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	Lead	Arsenic	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	EXS-21-1	12/JUL/21	-	Soil	3	X				
	EXS-21-2	"	-	"	3	X				
	EXS-21-3	"	-	"	3	X				
	EXS-21-4	"	-	"	3	X				

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human consumption/ use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ | SIF Observations Yes ☐ No ☐

Ice Packs ☑ Ice Cubes ☐ | Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
7.2							

SHIPMENT RELEASE (client use)		
Released by:	Date: JUL 14 21	Time: 1700

INITIAL SHIPMENT RECEPTION (lab use only)		
Received by:	Date: July 14-21	Time: 14:45

FINAL SHIPMENT RECEPTION (lab use only)		
Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCT 2018 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

GOLDER ASSOCIATES LTD
ATTN: Steven Fiddler
16820 107 Ave NW
Edmonton AB T5P 4C3

Date Received: 14-JUL-21
Report Date: 17-JUL-21 12:41 (MT)
Version: FINAL

Client Phone: 780-483-3499

Certificate of Analysis

Lab Work Order #: L2614441

Project P.O. #: NOT SUBMITTED
Job Reference: 20446521
C of C Numbers:
Legal Site Desc:

Harman Bhullar
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2614441-1 EX9-21-1							
Sampled By: CLIENT on 14-JUL-21 @ 07:30							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.0924		0.0050	mg/kg	14-JUL-21	17-JUL-21	R5494432
Toluene	<0.050		0.050	mg/kg	14-JUL-21	17-JUL-21	R5494432
Ethylbenzene	0.068		0.010	mg/kg	14-JUL-21	17-JUL-21	R5494432
Xylenes	<0.10		0.10	mg/kg	14-JUL-21	17-JUL-21	R5494432
m+p-Xylene	<0.050		0.050	mg/kg	14-JUL-21	17-JUL-21	R5494432
o-Xylene	<0.050		0.050	mg/kg	14-JUL-21	17-JUL-21	R5494432
Surrogate: 1,4-Difluorobenzene (SS)	100.1		70-130	%	14-JUL-21	17-JUL-21	R5494432
Surrogate: 4-Bromofluorobenzene (SS)	80.4		70-130	%	14-JUL-21	17-JUL-21	R5494432
Surrogate: 3,4-Dichlorotoluene (SS)	97.5		70-130	%	14-JUL-21	17-JUL-21	R5494432
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	98.7		70-130	%	17-JUL-21	17-JUL-21	R5524512
Chrom. to baseline at nC50	YES				17-JUL-21	17-JUL-21	R5524512
Prep/Analysis Dates					17-JUL-21	17-JUL-21	R5524512
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		17-JUL-21	
F1-BTEX	<10		10	mg/kg		17-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		17-JUL-21	
F3 (C16-C34)	<20		20	mg/kg		17-JUL-21	
F4 (C34-C50)	<20		20	mg/kg		17-JUL-21	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		17-JUL-21	
Miscellaneous Parameters							
% Moisture	11.1		0.25	%		16-JUL-21	R5524347
L2614441-2 EX9-21-6							
Sampled By: CLIENT on 14-JUL-21 @ 08:00							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.0075		0.0050	mg/kg	14-JUL-21	17-JUL-21	R5494432
Toluene	<0.050		0.050	mg/kg	14-JUL-21	17-JUL-21	R5494432
Ethylbenzene	0.028		0.010	mg/kg	14-JUL-21	17-JUL-21	R5494432
Xylenes	<0.10		0.10	mg/kg	14-JUL-21	17-JUL-21	R5494432
m+p-Xylene	<0.050		0.050	mg/kg	14-JUL-21	17-JUL-21	R5494432
o-Xylene	<0.050		0.050	mg/kg	14-JUL-21	17-JUL-21	R5494432
Surrogate: 1,4-Difluorobenzene (SS)	111.9		70-130	%	14-JUL-21	17-JUL-21	R5494432
Surrogate: 4-Bromofluorobenzene (SS)	105.3		70-130	%	14-JUL-21	17-JUL-21	R5494432
Surrogate: 3,4-Dichlorotoluene (SS)	105.4		70-130	%	14-JUL-21	17-JUL-21	R5494432
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	98.5		70-130	%	17-JUL-21	17-JUL-21	R5524512
Chrom. to baseline at nC50	YES				17-JUL-21	17-JUL-21	R5524512
Prep/Analysis Dates					17-JUL-21	17-JUL-21	R5524512
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		17-JUL-21	
F1-BTEX	<10		10	mg/kg		17-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		17-JUL-21	
F3 (C16-C34)	73		20	mg/kg		17-JUL-21	
F4 (C34-C50)	20		20	mg/kg		17-JUL-21	
Total Hydrocarbons (C6-C50)	93		20	mg/kg		17-JUL-21	
Miscellaneous Parameters							
% Moisture	8.64		0.25	%		16-JUL-21	R5524347

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2614441-3 EX9-21-8							
Sampled By: CLIENT on 14-JUL-21 @ 08:15							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.0307		0.0050	mg/kg	14-JUL-21	17-JUL-21	R5508763
Toluene	<0.050		0.050	mg/kg	14-JUL-21	17-JUL-21	R5508763
Ethylbenzene	0.084		0.010	mg/kg	14-JUL-21	17-JUL-21	R5508763
Xylenes	<0.10		0.10	mg/kg	14-JUL-21	17-JUL-21	R5508763
m+p-Xylene	0.070		0.050	mg/kg	14-JUL-21	17-JUL-21	R5508763
o-Xylene	<0.050		0.050	mg/kg	14-JUL-21	17-JUL-21	R5508763
Surrogate: 1,4-Difluorobenzene (SS)	73.0		70-130	%	14-JUL-21	17-JUL-21	R5508763
Surrogate: 4-Bromofluorobenzene (SS)	84.2		70-130	%	14-JUL-21	17-JUL-21	R5508763
Surrogate: 3,4-Dichlorotoluene (SS)	84.9		70-130	%	14-JUL-21	17-JUL-21	R5508763
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	91.9		70-130	%	17-JUL-21	17-JUL-21	R5524512
Chrom. to baseline at nC50	YES				17-JUL-21	17-JUL-21	R5524512
Prep/Analysis Dates					17-JUL-21	17-JUL-21	R5524512
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		17-JUL-21	
F1-BTEX	<10		10	mg/kg		17-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		17-JUL-21	
F3 (C16-C34)	26		20	mg/kg		17-JUL-21	
F4 (C34-C50)	<20		20	mg/kg		17-JUL-21	
Total Hydrocarbons (C6-C50)	26		20	mg/kg		17-JUL-21	
Miscellaneous Parameters							
% Moisture	13.9		0.25	%		16-JUL-21	R5524347
L2614441-4 EX9-21-11							
Sampled By: CLIENT on 13-JUL-21 @ 12:00							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.0105		0.0050	mg/kg	13-JUL-21	17-JUL-21	R5508763
Toluene	<0.050		0.050	mg/kg	13-JUL-21	17-JUL-21	R5508763
Ethylbenzene	<0.010		0.010	mg/kg	13-JUL-21	17-JUL-21	R5508763
Xylenes	<0.10		0.10	mg/kg	13-JUL-21	17-JUL-21	R5508763
m+p-Xylene	<0.050		0.050	mg/kg	13-JUL-21	17-JUL-21	R5508763
o-Xylene	<0.050		0.050	mg/kg	13-JUL-21	17-JUL-21	R5508763
Surrogate: 1,4-Difluorobenzene (SS)	91.0		70-130	%	13-JUL-21	17-JUL-21	R5508763
Surrogate: 4-Bromofluorobenzene (SS)	88.6		70-130	%	13-JUL-21	17-JUL-21	R5508763
Surrogate: 3,4-Dichlorotoluene (SS)	97.6		70-130	%	13-JUL-21	17-JUL-21	R5508763
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	93.6		70-130	%	17-JUL-21	17-JUL-21	R5524512
Chrom. to baseline at nC50	YES				17-JUL-21	17-JUL-21	R5524512
Prep/Analysis Dates					17-JUL-21	17-JUL-21	R5524512
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		17-JUL-21	
F1-BTEX	<10		10	mg/kg		17-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		17-JUL-21	
F3 (C16-C34)	<20		20	mg/kg		17-JUL-21	
F4 (C34-C50)	<20		20	mg/kg		17-JUL-21	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		17-JUL-21	
Miscellaneous Parameters							
% Moisture	9.80		0.25	%		16-JUL-21	R5524347

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2614441-5 EX9-21-14							
Sampled By: CLIENT on 14-JUL-21 @ 08:30							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	14-JUL-21	17-JUL-21	R5508763
Toluene	<0.050		0.050	mg/kg	14-JUL-21	17-JUL-21	R5508763
Ethylbenzene	<0.010		0.010	mg/kg	14-JUL-21	17-JUL-21	R5508763
Xylenes	<0.10		0.10	mg/kg	14-JUL-21	17-JUL-21	R5508763
m+p-Xylene	<0.050		0.050	mg/kg	14-JUL-21	17-JUL-21	R5508763
o-Xylene	<0.050		0.050	mg/kg	14-JUL-21	17-JUL-21	R5508763
Surrogate: 1,4-Difluorobenzene (SS)	100.3		70-130	%	14-JUL-21	17-JUL-21	R5508763
Surrogate: 4-Bromofluorobenzene (SS)	94.3		70-130	%	14-JUL-21	17-JUL-21	R5508763
Surrogate: 3,4-Dichlorotoluene (SS)	120.7		70-130	%	14-JUL-21	17-JUL-21	R5508763
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	93.7		70-130	%	17-JUL-21	17-JUL-21	R5524512
Chrom. to baseline at nC50	YES				17-JUL-21	17-JUL-21	R5524512
Prep/Analysis Dates					17-JUL-21	17-JUL-21	R5524512
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		17-JUL-21	
F1-BTEX	<10		10	mg/kg		17-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		17-JUL-21	
F3 (C16-C34)	<20		20	mg/kg		17-JUL-21	
F4 (C34-C50)	<20		20	mg/kg		17-JUL-21	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		17-JUL-21	
Miscellaneous Parameters							
% Moisture	8.22		0.25	%		16-JUL-21	R5524347
L2614441-6 EX9-21-24							
Sampled By: CLIENT on 14-JUL-21 @ 08:45							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	14-JUL-21	17-JUL-21	R5508763
Toluene	<0.050		0.050	mg/kg	14-JUL-21	17-JUL-21	R5508763
Ethylbenzene	<0.010		0.010	mg/kg	14-JUL-21	17-JUL-21	R5508763
Xylenes	<0.10		0.10	mg/kg	14-JUL-21	17-JUL-21	R5508763
m+p-Xylene	<0.050		0.050	mg/kg	14-JUL-21	17-JUL-21	R5508763
o-Xylene	<0.050		0.050	mg/kg	14-JUL-21	17-JUL-21	R5508763
Surrogate: 1,4-Difluorobenzene (SS)	92.1		70-130	%	14-JUL-21	17-JUL-21	R5508763
Surrogate: 4-Bromofluorobenzene (SS)	102.9		70-130	%	14-JUL-21	17-JUL-21	R5508763
Surrogate: 3,4-Dichlorotoluene (SS)	90.3		70-130	%	14-JUL-21	17-JUL-21	R5508763
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	94.3		70-130	%	17-JUL-21	17-JUL-21	R5524512
Chrom. to baseline at nC50	YES				17-JUL-21	17-JUL-21	R5524512
Prep/Analysis Dates					17-JUL-21	17-JUL-21	R5524512
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		17-JUL-21	
F1-BTEX	<10		10	mg/kg		17-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		17-JUL-21	
F3 (C16-C34)	<20		20	mg/kg		17-JUL-21	
F4 (C34-C50)	<20		20	mg/kg		17-JUL-21	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		17-JUL-21	
Miscellaneous Parameters							
% Moisture	8.88		0.25	%		16-JUL-21	R5524347

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2614441-7 EX9-21-3							
Sampled By: CLIENT on 14-JUL-21 @ 10:15							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	14-JUL-21	17-JUL-21	R5508763
Toluene	<0.050		0.050	mg/kg	14-JUL-21	17-JUL-21	R5508763
Ethylbenzene	0.014		0.010	mg/kg	14-JUL-21	17-JUL-21	R5508763
Xylenes	<0.10		0.10	mg/kg	14-JUL-21	17-JUL-21	R5508763
m+p-Xylene	<0.050		0.050	mg/kg	14-JUL-21	17-JUL-21	R5508763
o-Xylene	<0.050		0.050	mg/kg	14-JUL-21	17-JUL-21	R5508763
Surrogate: 1,4-Difluorobenzene (SS)	86.5		70-130	%	14-JUL-21	17-JUL-21	R5508763
Surrogate: 4-Bromofluorobenzene (SS)	130.5	SHMI	70-130	%	14-JUL-21	17-JUL-21	R5508763
Surrogate: 3,4-Dichlorotoluene (SS)	70.9		70-130	%	14-JUL-21	17-JUL-21	R5508763
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	96.4		70-130	%	17-JUL-21	17-JUL-21	R5524512
Chrom. to baseline at nC50	YES				17-JUL-21	17-JUL-21	R5524512
Prep/Analysis Dates					17-JUL-21	17-JUL-21	R5524512
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		17-JUL-21	
F1-BTEX	<10		10	mg/kg		17-JUL-21	
F2 (C10-C16)	230		20	mg/kg		17-JUL-21	
F3 (C16-C34)	60		20	mg/kg		17-JUL-21	
F4 (C34-C50)	<20		20	mg/kg		17-JUL-21	
Total Hydrocarbons (C6-C50)	290		20	mg/kg		17-JUL-21	
Miscellaneous Parameters							
% Moisture	13.8		0.25	%		16-JUL-21	R5524347
L2614441-8 EX9-21-16							
Sampled By: CLIENT on 14-JUL-21 @ 10:00							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	14-JUL-21	17-JUL-21	R5508763
Toluene	<0.050		0.050	mg/kg	14-JUL-21	17-JUL-21	R5508763
Ethylbenzene	0.115		0.010	mg/kg	14-JUL-21	17-JUL-21	R5508763
Xylenes	0.36		0.10	mg/kg	14-JUL-21	17-JUL-21	R5508763
m+p-Xylene	0.108		0.050	mg/kg	14-JUL-21	17-JUL-21	R5508763
o-Xylene	0.253		0.050	mg/kg	14-JUL-21	17-JUL-21	R5508763
Surrogate: 1,4-Difluorobenzene (SS)	81.1		70-130	%	14-JUL-21	17-JUL-21	R5508763
Surrogate: 4-Bromofluorobenzene (SS)	140.6	SHMI	70-130	%	14-JUL-21	17-JUL-21	R5508763
Surrogate: 3,4-Dichlorotoluene (SS)	71.6		70-130	%	14-JUL-21	17-JUL-21	R5508763
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	99.8		70-130	%	17-JUL-21	17-JUL-21	R5524512
Chrom. to baseline at nC50	YES				17-JUL-21	17-JUL-21	R5524512
Prep/Analysis Dates					17-JUL-21	17-JUL-21	R5524512
CCME Total Hydrocarbons							
F1 (C6-C10)	11		10	mg/kg		17-JUL-21	
F1-BTEX	11		10	mg/kg		17-JUL-21	
F2 (C10-C16)	402		20	mg/kg		17-JUL-21	
F3 (C16-C34)	80		20	mg/kg		17-JUL-21	
F4 (C34-C50)	<20		20	mg/kg		17-JUL-21	
Total Hydrocarbons (C6-C50)	493		20	mg/kg		17-JUL-21	
Miscellaneous Parameters							
% Moisture	11.0		0.25	%		16-JUL-21	R5524347

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2614441-9 EX9-21-6D							
Sampled By: CLIENT on 14-JUL-21 @ 08:00							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.0053		0.0050	mg/kg	14-JUL-21	17-JUL-21	R5508763
Toluene	<0.050		0.050	mg/kg	14-JUL-21	17-JUL-21	R5508763
Ethylbenzene	<0.010		0.010	mg/kg	14-JUL-21	17-JUL-21	R5508763
Xylenes	<0.10		0.10	mg/kg	14-JUL-21	17-JUL-21	R5508763
m+p-Xylene	<0.050		0.050	mg/kg	14-JUL-21	17-JUL-21	R5508763
o-Xylene	<0.050		0.050	mg/kg	14-JUL-21	17-JUL-21	R5508763
Surrogate: 1,4-Difluorobenzene (SS)	85.5		70-130	%	14-JUL-21	17-JUL-21	R5508763
Surrogate: 4-Bromofluorobenzene (SS)	91.6		70-130	%	14-JUL-21	17-JUL-21	R5508763
Surrogate: 3,4-Dichlorotoluene (SS)	82.3		70-130	%	14-JUL-21	17-JUL-21	R5508763
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	92.2		70-130	%	17-JUL-21	17-JUL-21	R5524512
Chrom. to baseline at nC50	YES				17-JUL-21	17-JUL-21	R5524512
Prep/Analysis Dates					17-JUL-21	17-JUL-21	R5524512
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		17-JUL-21	
F1-BTEX	<10		10	mg/kg		17-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		17-JUL-21	
F3 (C16-C34)	65		20	mg/kg		17-JUL-21	
F4 (C34-C50)	<20		20	mg/kg		17-JUL-21	
Total Hydrocarbons (C6-C50)	65		20	mg/kg		17-JUL-21	
Miscellaneous Parameters							
% Moisture	8.92		0.25	%		16-JUL-21	R5524347
L2614441-10 EX9-21-27							
Sampled By: CLIENT on 14-JUL-21 @ 10:45							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	14-JUL-21	17-JUL-21	R5508763
Toluene	<0.050		0.050	mg/kg	14-JUL-21	17-JUL-21	R5508763
Ethylbenzene	<0.010		0.010	mg/kg	14-JUL-21	17-JUL-21	R5508763
Xylenes	<0.10		0.10	mg/kg	14-JUL-21	17-JUL-21	R5508763
m+p-Xylene	<0.050		0.050	mg/kg	14-JUL-21	17-JUL-21	R5508763
o-Xylene	<0.050		0.050	mg/kg	14-JUL-21	17-JUL-21	R5508763
Surrogate: 1,4-Difluorobenzene (SS)	93.6		70-130	%	14-JUL-21	17-JUL-21	R5508763
Surrogate: 4-Bromofluorobenzene (SS)	106.9		70-130	%	14-JUL-21	17-JUL-21	R5508763
Surrogate: 3,4-Dichlorotoluene (SS)	83.5		70-130	%	14-JUL-21	17-JUL-21	R5508763
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	97.4		70-130	%	17-JUL-21	17-JUL-21	R5524512
Chrom. to baseline at nC50	YES				17-JUL-21	17-JUL-21	R5524512
Prep/Analysis Dates					17-JUL-21	17-JUL-21	R5524512
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		17-JUL-21	
F1-BTEX	<10		10	mg/kg		17-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		17-JUL-21	
F3 (C16-C34)	<20		20	mg/kg		17-JUL-21	
F4 (C34-C50)	<20		20	mg/kg		17-JUL-21	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		17-JUL-21	
Miscellaneous Parameters							
% Moisture	8.54		0.25	%		16-JUL-21	R5524347

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2614441-11 EX9-21-29							
Sampled By: CLIENT on 14-JUL-21 @ 10:50							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	14-JUL-21	17-JUL-21	R5508763
Toluene	<0.050		0.050	mg/kg	14-JUL-21	17-JUL-21	R5508763
Ethylbenzene	<0.010		0.010	mg/kg	14-JUL-21	17-JUL-21	R5508763
Xylenes	<0.10		0.10	mg/kg	14-JUL-21	17-JUL-21	R5508763
m+p-Xylene	<0.050		0.050	mg/kg	14-JUL-21	17-JUL-21	R5508763
o-Xylene	<0.050		0.050	mg/kg	14-JUL-21	17-JUL-21	R5508763
Surrogate: 1,4-Difluorobenzene (SS)	92.0		70-130	%	14-JUL-21	17-JUL-21	R5508763
Surrogate: 4-Bromofluorobenzene (SS)	91.3		70-130	%	14-JUL-21	17-JUL-21	R5508763
Surrogate: 3,4-Dichlorotoluene (SS)	105.1		70-130	%	14-JUL-21	17-JUL-21	R5508763
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	93.1		70-130	%	17-JUL-21	17-JUL-21	R5524512
Chrom. to baseline at nC50	YES				17-JUL-21	17-JUL-21	R5524512
Prep/Analysis Dates					17-JUL-21	17-JUL-21	R5524512
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		17-JUL-21	
F1-BTEX	<10		10	mg/kg		17-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		17-JUL-21	
F3 (C16-C34)	<20		20	mg/kg		17-JUL-21	
F4 (C34-C50)	<20		20	mg/kg		17-JUL-21	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		17-JUL-21	
Miscellaneous Parameters							
% Moisture	8.25		0.25	%		16-JUL-21	R5524347

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
SHMI	Surrogate recovery was outside ALS DQO (High) due to Matrix Interference.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BTXS,F1-MEOH-ED	Soil	BTEX and F1	EPA 8260C/5021A and CWS PHC Tier 1

This analysis involves the extraction of a subsample of the sediment/soil with methanol added in the field at the time of subsampling. The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. BTX Target compound concentrations are measured using mass spectrometry detection. The instrumental portion of F1 analysis is carried out in accordance with the Canada Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method (2001).

ETL-TVH,TEH-CCME-ED	Soil	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F2-4-TMB-ED	Soil	CCME Total Extractable Hydrocarbons	CCME Tier 1

This analysis is carried out in accordance with the "Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method, Canadian Council of Ministers of the Environment" For C10 to C50 hydrocarbons (F2, F3, F4) and gravimetric heavy hydrocarbons (F4G-sg), a subsample of the sediment/soil is extracted with 1:1 hexane:acetone using a rotary extractor. The extract undergoes a silica-gel clean-up to remove polar compounds. F2, F3 & F4 are analyzed by on-column GC/FID, and F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where F4 (C34-C50) and F4G-sg results are reported for a sample, the larger of the reported values is used for comparison against the relevant CCME standard for F4.
7. The gravimetric heavy hydrocarbon results (F4G-sg), cannot be added to the C6 to C50 hydrocarbon results.
8. This method is validated for use.
9. Data from analysis of quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram.

PREP-MOISTURE-ED	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)

The weighed portion of soil is placed in a 105°C oven to dry to a constant weight; the drying time will vary based on the moisture content of the soil. The dried soil weight is then used to calculate % moisture.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
ED	ALS ENVIRONMENTAL - EDMONTON, ALBERTA, CANADA

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Client: GOLDER ASSOCIATES LTD
16820 107 Ave NW
Edmonton AB T5P 4C3
Contact: Steven Fiddler

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTXS,F1-MEOH-ED	**Soil**							
Batch R5494432								
WG3577743-2 LCS								
Benzene			77.5		%		70-130	16-JUL-21
Toluene			87.9		%		70-130	16-JUL-21
Ethylbenzene			89.1		%		70-130	16-JUL-21
m+p-Xylene			95.4		%		70-130	16-JUL-21
o-Xylene			96.2		%		70-130	16-JUL-21
WG3577743-1 MB								
Benzene			<0.0050		mg/kg		0.005	16-JUL-21
Toluene			<0.050		mg/kg		0.05	16-JUL-21
Ethylbenzene			<0.010		mg/kg		0.01	16-JUL-21
m+p-Xylene			<0.050		mg/kg		0.05	16-JUL-21
o-Xylene			<0.050		mg/kg		0.05	16-JUL-21
Surrogate: 1,4-Difluorobenzene (SS)			102.5		%		70-130	16-JUL-21
Surrogate: 4-Bromofluorobenzene (SS)			92.7		%		70-130	16-JUL-21
Surrogate: 3,4-Dichlorotoluene (SS)			110.3		%		70-130	16-JUL-21
Batch R5508763								
WG3577754-4 DUP		**L2614441-3**						
Benzene		0.0307	0.0295		mg/kg	4.0	30	17-JUL-21
Toluene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	17-JUL-21
Ethylbenzene		0.084	0.084		mg/kg	0.2	30	17-JUL-21
m+p-Xylene		0.070	0.069		mg/kg	1.3	30	17-JUL-21
o-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	17-JUL-21
WG3577754-2 LCS								
Benzene			106.9		%		70-130	17-JUL-21
Toluene			92.9		%		70-130	17-JUL-21
Ethylbenzene			80.7		%		70-130	17-JUL-21
m+p-Xylene			99.2		%		70-130	17-JUL-21
o-Xylene			94.2		%		70-130	17-JUL-21
WG3577754-1 MB								
Benzene			<0.0050		mg/kg		0.005	17-JUL-21
Toluene			<0.050		mg/kg		0.05	17-JUL-21
Ethylbenzene			<0.010		mg/kg		0.01	17-JUL-21
m+p-Xylene			<0.050		mg/kg		0.05	17-JUL-21
o-Xylene			<0.050		mg/kg		0.05	17-JUL-21
Surrogate: 1,4-Difluorobenzene (SS)			84.6		%		70-130	17-JUL-21
Surrogate: 4-Bromofluorobenzene (SS)			82.2		%		70-130	17-JUL-21

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTXS,F1-MEOH-ED	**Soil**							
Batch R5508763								
WG3577754-1 MB								
Surrogate: 3,4-Dichlorotoluene (SS)			88.2		%		70-130	17-JUL-21
WG3577754-5 MS		**L2614441-11**						
Benzene			122.3		%		60-140	17-JUL-21
Toluene			111.3		%		60-140	17-JUL-21
Ethylbenzene			98.6		%		60-140	17-JUL-21
m+p-Xylene			113.6		%		60-140	17-JUL-21
o-Xylene			111.4		%		60-140	17-JUL-21
F2-4-TMB-ED	**Soil**							
Batch R5524512								
WG3577744-4 DUP		**L2614441-2**						
F2 (C10-C16)		<20	<20	RPD-NA	mg/kg	N/A	40	17-JUL-21
F3 (C16-C34)		73	73		mg/kg	0.1	40	17-JUL-21
F4 (C34-C50)		20	20		mg/kg	2.2	40	17-JUL-21
WG3577744-3 IRM		**ALS PHC RM3**						
F2 (C10-C16)			94.6		%		70-130	17-JUL-21
F3 (C16-C34)			94.9		%		70-130	17-JUL-21
F4 (C34-C50)			87.8		%		70-130	17-JUL-21
WG3577749-3 IRM		**ALS PHC RM3**						
F2 (C10-C16)			89.0		%		70-130	17-JUL-21
F3 (C16-C34)			89.9		%		70-130	17-JUL-21
F4 (C34-C50)			82.9		%		70-130	17-JUL-21
WG3577744-2 LCS		**DIESEL/MOTOR OIL**						
F2 (C10-C16)			112.8		%		70-130	17-JUL-21
F3 (C16-C34)			113.9		%		70-130	17-JUL-21
F4 (C34-C50)			113.0		%		70-130	17-JUL-21
WG3577749-2 LCS		**DIESEL/MOTOR OIL**						
F2 (C10-C16)			111.9		%		70-130	17-JUL-21
F3 (C16-C34)			116.9		%		70-130	17-JUL-21
F4 (C34-C50)			113.4		%		70-130	17-JUL-21
WG3577744-1 MB								
F2 (C10-C16)			<20		mg/kg		20	17-JUL-21
F3 (C16-C34)			<20		mg/kg		20	17-JUL-21
F4 (C34-C50)			<20		mg/kg		20	17-JUL-21
Surrogate: 2-Bromobenzotrifluoride			98.7		%		70-130	17-JUL-21
WG3577749-1 MB								
F2 (C10-C16)			<20		mg/kg		20	17-JUL-21

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-4-TMB-ED	**Soil**							
Batch R5524512								
WG3577749-1 MB								
F3 (C16-C34)			<20		mg/kg		20	17-JUL-21
F4 (C34-C50)			<20		mg/kg		20	17-JUL-21
Surrogate: 2-Bromobenzotrifluoride			95.0		%		70-130	17-JUL-21
PREP-MOISTURE-ED	**Soil**							
Batch R5524347								
WG3577775-3 DUP		**L2614441-11**						
% Moisture		8.25	8.45		%	2.4	20	16-JUL-21
WG3577775-2 LCS								
% Moisture			99.3		%		90-110	16-JUL-21
WG3577775-1 MB								
% Moisture			<0.25		%		0.25	16-JUL-21

Quality Control Report

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number:

Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report ☑ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax: k.lewis@mandalayresources.com
Email 2: sfiddler@golder.com
Email 3: jmusijowski@golder.com

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax:
Email 2:

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☐ | Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #: Q80711
Job #: 20446521
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only):

ALS Contact: Oliver Gregg Sampler:

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	Lead	Arsenic	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	[redacted]									
	EX9-21-1	14-JUL-21	07:30	SOIL		X				
	EX9-21-6	"	08:00	"		X				
	EX9-21-8	"	08:15	"		X				
	EX9-21-11	13-JUL-21	12:00	"		X				
	EX9-21-14	14-JUL-21	08:30	"		X				
	EX9-21-24	"	8:45	"		X				
	EX9-21-3	"	10:15	"		X				
	EX9-21-16	"	10:00	"		X				
	EX9-21-6D	"	08:00	"		X				
	EX9-21-27	"	10:45	"		X				
	EX9-21-29	"	10:50	"		X				

L2614441-COFC

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO
Are samples for human consumption/ use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
	July 14, 21	1200						

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCT 2018 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

GOLDER ASSOCIATES LTD
ATTN: Steven Fiddler
16820 107 Ave NW
Edmonton AB T5P 4C3

Date Received: 22-JUL-21
Report Date: 25-JUL-21 15:13 (MT)
Version: FINAL

Client Phone: 780-483-3499

Certificate of Analysis

Lab Work Order #: L2617215

Project P.O. #: NOT SUBMITTED
Job Reference: 20446521
C of C Numbers:
Legal Site Desc:

Harman Bhullar
Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2617215-1 EX13-21-30							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.122		0.0050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Toluene	0.189		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Ethylbenzene	0.037		0.010	mg/kg	19-JUL-21	25-JUL-21	R5508763
Xylenes	0.14		0.10	mg/kg	19-JUL-21	25-JUL-21	R5508763
m+p-Xylene	0.082		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
o-Xylene	0.054		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Surrogate: 1,4-Difluorobenzene (SS)	98.8		70-130	%	19-JUL-21	25-JUL-21	R5508763
Surrogate: 4-Bromofluorobenzene (SS)	105.4		70-130	%	19-JUL-21	25-JUL-21	R5508763
Surrogate: 3,4-Dichlorotoluene (SS)	85.6		70-130	%	19-JUL-21	25-JUL-21	R5508763
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	84.7		70-130	%	24-JUL-21	24-JUL-21	R5528351
Chrom. to baseline at nC50	NO				24-JUL-21	24-JUL-21	R5528351
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528351
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	21		20	mg/kg		25-JUL-21	
F3 (C16-C34)	538		20	mg/kg		25-JUL-21	
F4 (C34-C50)	576		20	mg/kg		25-JUL-21	
F4G-SG (GHH-Silica)	3300		500	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	1140		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	9.29		0.25	%		23-JUL-21	R5528618
F4G Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528729
L2617215-2 EX13-21-26							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.0065		0.0050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Toluene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Ethylbenzene	<0.010		0.010	mg/kg	19-JUL-21	25-JUL-21	R5528803
Xylenes	<0.10		0.10	mg/kg	19-JUL-21	25-JUL-21	R5528803
m+p-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
o-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Surrogate: 1,4-Difluorobenzene (SS)	105.5		70-130	%	19-JUL-21	25-JUL-21	R5528803
Surrogate: 4-Bromofluorobenzene (SS)	106.1		70-130	%	19-JUL-21	25-JUL-21	R5528803
Surrogate: 3,4-Dichlorotoluene (SS)	97.1		70-130	%	19-JUL-21	25-JUL-21	R5528803
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	87.3		70-130	%	24-JUL-21	24-JUL-21	R5528351
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528351
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528351
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	104		20	mg/kg		25-JUL-21	
F4 (C34-C50)	34		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	138		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2617215-2 EX13-21-26							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
% Moisture	9.72		0.25	%		23-JUL-21	R5528618
L2617215-3 EX13-21-63							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.0250		0.0050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Toluene	0.102		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Ethylbenzene	0.030		0.010	mg/kg	19-JUL-21	25-JUL-21	R5528803
Xylenes	<0.10		0.10	mg/kg	19-JUL-21	25-JUL-21	R5528803
m+p-Xylene	0.084		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
o-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Surrogate: 1,4-Difluorobenzene (SS)	123.4		70-130	%	19-JUL-21	25-JUL-21	R5528803
Surrogate: 4-Bromofluorobenzene (SS)	93.2		70-130	%	19-JUL-21	25-JUL-21	R5528803
Surrogate: 3,4-Dichlorotoluene (SS)	97.2		70-130	%	19-JUL-21	25-JUL-21	R5528803
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	85.6		70-130	%	24-JUL-21	24-JUL-21	R5528351
Chrom. to baseline at nC50	NO				24-JUL-21	24-JUL-21	R5528351
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528351
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	110		20	mg/kg		25-JUL-21	
F3 (C16-C34)	1140		20	mg/kg		25-JUL-21	
F4 (C34-C50)	279		20	mg/kg		25-JUL-21	
F4G-SG (GHH-Silica)	960		500	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	1530		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	10.2		0.25	%		23-JUL-21	R5528618
F4G Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528729
L2617215-4 EX13-21-52							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.0105		0.0050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Toluene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Ethylbenzene	0.013		0.010	mg/kg	19-JUL-21	25-JUL-21	R5528803
Xylenes	<0.10		0.10	mg/kg	19-JUL-21	25-JUL-21	R5528803
m+p-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
o-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Surrogate: 1,4-Difluorobenzene (SS)	110.2		70-130	%	19-JUL-21	25-JUL-21	R5528803
Surrogate: 4-Bromofluorobenzene (SS)	118.2		70-130	%	19-JUL-21	25-JUL-21	R5528803
Surrogate: 3,4-Dichlorotoluene (SS)	119.2		70-130	%	19-JUL-21	25-JUL-21	R5528803
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	92.8		70-130	%	24-JUL-21	24-JUL-21	R5528351
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528351
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528351
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2617215-4 EX13-21-52							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME Total Hydrocarbons							
F3 (C16-C34)	282		20	mg/kg		25-JUL-21	
F4 (C34-C50)	77		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	359		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	9.71		0.25	%		23-JUL-21	R5528618
L2617215-5 EX13-21-10							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.0262		0.0050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Toluene	0.061		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Ethylbenzene	0.019		0.010	mg/kg	19-JUL-21	25-JUL-21	R5528803
Xylenes	<0.10		0.10	mg/kg	19-JUL-21	25-JUL-21	R5528803
m+p-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
o-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Surrogate: 1,4-Difluorobenzene (SS)	120.4		70-130	%	19-JUL-21	25-JUL-21	R5528803
Surrogate: 4-Bromofluorobenzene (SS)	123.9		70-130	%	19-JUL-21	25-JUL-21	R5528803
Surrogate: 3,4-Dichlorotoluene (SS)	116.2		70-130	%	19-JUL-21	25-JUL-21	R5528803
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	86.3		70-130	%	24-JUL-21	24-JUL-21	R5528351
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528351
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528351
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	112		20	mg/kg		25-JUL-21	
F4 (C34-C50)	35		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	147		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	6.60		0.25	%		23-JUL-21	R5528618
L2617215-6 EX13-21-37							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Toluene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Ethylbenzene	<0.010		0.010	mg/kg	19-JUL-21	25-JUL-21	R5528803
Xylenes	<0.10		0.10	mg/kg	19-JUL-21	25-JUL-21	R5528803
m+p-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
o-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Surrogate: 1,4-Difluorobenzene (SS)	123.6		70-130	%	19-JUL-21	25-JUL-21	R5528803
Surrogate: 4-Bromofluorobenzene (SS)	104.9		70-130	%	19-JUL-21	25-JUL-21	R5528803
Surrogate: 3,4-Dichlorotoluene (SS)	120.0		70-130	%	19-JUL-21	25-JUL-21	R5528803
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	87.1		70-130	%	24-JUL-21	24-JUL-21	R5528351
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528351
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528351
CCME Total Hydrocarbons							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2617215-6 EX13-21-37							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	142		20	mg/kg		25-JUL-21	
F4 (C34-C50)	29		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	171		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	5.95		0.25	%		23-JUL-21	R5528618
L2617215-7 EX13-21-43							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Toluene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Ethylbenzene	<0.010		0.010	mg/kg	19-JUL-21	25-JUL-21	R5528803
Xylenes	<0.10		0.10	mg/kg	19-JUL-21	25-JUL-21	R5528803
m+p-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
o-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Surrogate: 1,4-Difluorobenzene (SS)	112.9		70-130	%	19-JUL-21	25-JUL-21	R5528803
Surrogate: 4-Bromofluorobenzene (SS)	114.2		70-130	%	19-JUL-21	25-JUL-21	R5528803
Surrogate: 3,4-Dichlorotoluene (SS)	107.7		70-130	%	19-JUL-21	25-JUL-21	R5528803
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	89.6		70-130	%	24-JUL-21	24-JUL-21	R5528351
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528351
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528351
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	<20		20	mg/kg		25-JUL-21	
F4 (C34-C50)	<20		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	6.12		0.25	%		23-JUL-21	R5528618
L2617215-8 EX13-21-69							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.0166		0.0050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Toluene	0.121		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Ethylbenzene	0.032		0.010	mg/kg	19-JUL-21	25-JUL-21	R5528803
Xylenes	<0.10		0.10	mg/kg	19-JUL-21	25-JUL-21	R5528803
m+p-Xylene	0.090		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
o-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Surrogate: 1,4-Difluorobenzene (SS)	116.3		70-130	%	19-JUL-21	25-JUL-21	R5528803
Surrogate: 4-Bromofluorobenzene (SS)	93.4		70-130	%	19-JUL-21	25-JUL-21	R5528803
Surrogate: 3,4-Dichlorotoluene (SS)	95.7		70-130	%	19-JUL-21	25-JUL-21	R5528803
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	82.3		70-130	%	24-JUL-21	24-JUL-21	R5528351

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2617215-8 EX13-21-69							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME Total Extractable Hydrocarbons							
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528351
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528351
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	206		20	mg/kg		25-JUL-21	
F4 (C34-C50)	86		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	292		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	6.01		0.25	%		23-JUL-21	R5528618
L2617215-9 EX13-21-64							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.102		0.0050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Toluene	0.325		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Ethylbenzene	0.154		0.010	mg/kg	19-JUL-21	25-JUL-21	R5528803
Xylenes	0.23		0.10	mg/kg	19-JUL-21	25-JUL-21	R5528803
m+p-Xylene	0.143		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
o-Xylene	0.083		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Surrogate: 1,4-Difluorobenzene (SS)	119.9		70-130	%	19-JUL-21	25-JUL-21	R5528803
Surrogate: 4-Bromofluorobenzene (SS)	174.1	SHMI	70-130	%	19-JUL-21	25-JUL-21	R5528803
Surrogate: 3,4-Dichlorotoluene (SS)	83.3		70-130	%	19-JUL-21	25-JUL-21	R5528803
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	82.3		70-130	%	24-JUL-21	24-JUL-21	R5528351
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528351
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528351
CCME Total Hydrocarbons							
F1 (C6-C10)	11		10	mg/kg		25-JUL-21	
F1-BTEX	10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	279		20	mg/kg		25-JUL-21	
F3 (C16-C34)	2270		20	mg/kg		25-JUL-21	
F4 (C34-C50)	336		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	2900		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	4.64		0.25	%		23-JUL-21	R5528618
L2617215-10 EX13-21-2							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.0707		0.0050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Toluene	0.210		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Ethylbenzene	0.032		0.010	mg/kg	19-JUL-21	25-JUL-21	R5528803
Xylenes	0.10		0.10	mg/kg	19-JUL-21	25-JUL-21	R5528803
m+p-Xylene	0.102		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
o-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Surrogate: 1,4-Difluorobenzene (SS)	111.4		70-130	%	19-JUL-21	25-JUL-21	R5528803
Surrogate: 4-Bromofluorobenzene (SS)	117.7		70-130	%	19-JUL-21	25-JUL-21	R5528803

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2617215-10 EX13-21-2							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
BTEX and F1							
Surrogate: 3,4-Dichlorotoluene (SS)	103.6		70-130	%	19-JUL-21	25-JUL-21	R5528803
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	86.3		70-130	%	24-JUL-21	24-JUL-21	R5528351
Chrom. to baseline at nC50	NO				24-JUL-21	24-JUL-21	R5528351
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528351
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	149		20	mg/kg		25-JUL-21	
F3 (C16-C34)	512		20	mg/kg		25-JUL-21	
F4 (C34-C50)	132		20	mg/kg		25-JUL-21	
F4G-SG (GHH-Silica)	<500		500	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	793		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	8.95		0.25	%		23-JUL-21	R5528618
F4G Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528729
L2617215-11 EX13-21-71							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Toluene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Ethylbenzene	<0.010		0.010	mg/kg	19-JUL-21	25-JUL-21	R5528803
Xylenes	<0.10		0.10	mg/kg	19-JUL-21	25-JUL-21	R5528803
m+p-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
o-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Surrogate: 1,4-Difluorobenzene (SS)	115.8		70-130	%	19-JUL-21	25-JUL-21	R5528803
Surrogate: 4-Bromofluorobenzene (SS)	115.7		70-130	%	19-JUL-21	25-JUL-21	R5528803
Surrogate: 3,4-Dichlorotoluene (SS)	112.7		70-130	%	19-JUL-21	25-JUL-21	R5528803
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	86.9		70-130	%	24-JUL-21	24-JUL-21	R5528351
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528351
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528351
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	72		20	mg/kg		25-JUL-21	
F4 (C34-C50)	26		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	98		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	3.77		0.25	%		23-JUL-21	R5528618
L2617215-12 EX13-21-29							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.0153		0.0050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Toluene	0.072		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Ethylbenzene	0.030		0.010	mg/kg	19-JUL-21	25-JUL-21	R5528803

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2617215-12 EX13-21-29							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
BTEX and F1							
Xylenes	0.19		0.10	mg/kg	19-JUL-21	25-JUL-21	R5528803
m+p-Xylene	0.126		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
o-Xylene	0.062		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Surrogate: 1,4-Difluorobenzene (SS)	110.0		70-130	%	19-JUL-21	25-JUL-21	R5528803
Surrogate: 4-Bromofluorobenzene (SS)	111.0		70-130	%	19-JUL-21	25-JUL-21	R5528803
Surrogate: 3,4-Dichlorotoluene (SS)	107.1		70-130	%	19-JUL-21	25-JUL-21	R5528803
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	85.8		70-130	%	24-JUL-21	24-JUL-21	R5528351
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528351
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528351
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	36		20	mg/kg		25-JUL-21	
F3 (C16-C34)	348		20	mg/kg		25-JUL-21	
F4 (C34-C50)	60		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	444		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	9.44		0.25	%		23-JUL-21	R5528618
L2617215-13 EX13-21-23							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.0069		0.0050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Toluene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Ethylbenzene	<0.010		0.010	mg/kg	19-JUL-21	25-JUL-21	R5528803
Xylenes	<0.10		0.10	mg/kg	19-JUL-21	25-JUL-21	R5528803
m+p-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
o-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Surrogate: 1,4-Difluorobenzene (SS)	104.9		70-130	%	19-JUL-21	25-JUL-21	R5528803
Surrogate: 4-Bromofluorobenzene (SS)	112.7		70-130	%	19-JUL-21	25-JUL-21	R5528803
Surrogate: 3,4-Dichlorotoluene (SS)	113.6		70-130	%	19-JUL-21	25-JUL-21	R5528803
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	81.9		70-130	%	24-JUL-21	24-JUL-21	R5528351
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528351
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528351
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	236		20	mg/kg		25-JUL-21	
F4 (C34-C50)	49		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	285		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	8.84		0.25	%		23-JUL-21	R5528618
L2617215-15 EX13-21-65							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2617215-15 EX13-21-65							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Toluene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Ethylbenzene	<0.010		0.010	mg/kg	19-JUL-21	25-JUL-21	R5528803
Xylenes	<0.10		0.10	mg/kg	19-JUL-21	25-JUL-21	R5528803
m+p-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
o-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Surrogate: 1,4-Difluorobenzene (SS)	119.7		70-130	%	19-JUL-21	25-JUL-21	R5528803
Surrogate: 4-Bromofluorobenzene (SS)	109.0		70-130	%	19-JUL-21	25-JUL-21	R5528803
Surrogate: 3,4-Dichlorotoluene (SS)	110.7		70-130	%	19-JUL-21	25-JUL-21	R5528803
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	80.2		70-130	%	24-JUL-21	24-JUL-21	R5528351
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528351
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528351
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	36		20	mg/kg		25-JUL-21	
F4 (C34-C50)	<20		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	36		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	5.81		0.25	%		23-JUL-21	R5528618
L2617215-16 EX13-21-65D							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Toluene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Ethylbenzene	<0.010		0.010	mg/kg	19-JUL-21	25-JUL-21	R5528803
Xylenes	<0.10		0.10	mg/kg	19-JUL-21	25-JUL-21	R5528803
m+p-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
o-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Surrogate: 1,4-Difluorobenzene (SS)	108.4		70-130	%	19-JUL-21	25-JUL-21	R5528803
Surrogate: 4-Bromofluorobenzene (SS)	111.2		70-130	%	19-JUL-21	25-JUL-21	R5528803
Surrogate: 3,4-Dichlorotoluene (SS)	112.0		70-130	%	19-JUL-21	25-JUL-21	R5528803
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	86.9		70-130	%	24-JUL-21	24-JUL-21	R5528351
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528351
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528351
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	<20		20	mg/kg		25-JUL-21	
F4 (C34-C50)	<20		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	5.80		0.25	%		23-JUL-21	R5528618

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2617215-17 EX13-21-62							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.146		0.0050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Toluene	0.384		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Ethylbenzene	0.173		0.010	mg/kg	19-JUL-21	25-JUL-21	R5528803
Xylenes	0.22		0.10	mg/kg	19-JUL-21	25-JUL-21	R5528803
m+p-Xylene	0.160		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
o-Xylene	0.057		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Surrogate: 1,4-Difluorobenzene (SS)	121.8		70-130	%	19-JUL-21	25-JUL-21	R5528803
Surrogate: 4-Bromofluorobenzene (SS)	126.7		70-130	%	19-JUL-21	25-JUL-21	R5528803
Surrogate: 3,4-Dichlorotoluene (SS)	104.4		70-130	%	19-JUL-21	25-JUL-21	R5528803
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	84.8		70-130	%	24-JUL-21	24-JUL-21	R5528351
Chrom. to baseline at nC50	NO				24-JUL-21	24-JUL-21	R5528351
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528351
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	52		20	mg/kg		25-JUL-21	
F3 (C16-C34)	1580		20	mg/kg		25-JUL-21	
F4 (C34-C50)	624		20	mg/kg		25-JUL-21	
F4G-SG (GHH-Silica)	1480		500	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	2260		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	13.3		0.25	%		23-JUL-21	R5528618
F4G Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528729
L2617215-18 EX13-21-46							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Toluene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Ethylbenzene	<0.010		0.010	mg/kg	19-JUL-21	25-JUL-21	R5528803
Xylenes	<0.10		0.10	mg/kg	19-JUL-21	25-JUL-21	R5528803
m+p-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
o-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Surrogate: 1,4-Difluorobenzene (SS)	103.7		70-130	%	19-JUL-21	25-JUL-21	R5528803
Surrogate: 4-Bromofluorobenzene (SS)	107.0		70-130	%	19-JUL-21	25-JUL-21	R5528803
Surrogate: 3,4-Dichlorotoluene (SS)	103.1		70-130	%	19-JUL-21	25-JUL-21	R5528803
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	79.1		70-130	%	24-JUL-21	24-JUL-21	R5528351
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528351
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528351
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	<20		20	mg/kg		25-JUL-21	
F4 (C34-C50)	<20		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2617215-18 EX13-21-46							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
% Moisture	4.02		0.25	%		23-JUL-21	R5528618
L2617215-19 EX13-21-46D							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Toluene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Ethylbenzene	<0.010		0.010	mg/kg	19-JUL-21	25-JUL-21	R5528803
Xylenes	<0.10		0.10	mg/kg	19-JUL-21	25-JUL-21	R5528803
m+p-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
o-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Surrogate: 1,4-Difluorobenzene (SS)	106.6		70-130	%	19-JUL-21	25-JUL-21	R5528803
Surrogate: 4-Bromofluorobenzene (SS)	91.1		70-130	%	19-JUL-21	25-JUL-21	R5528803
Surrogate: 3,4-Dichlorotoluene (SS)	107.0		70-130	%	19-JUL-21	25-JUL-21	R5528803
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	86.6		70-130	%	24-JUL-21	24-JUL-21	R5528351
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528351
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528351
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	<20		20	mg/kg		25-JUL-21	
F4 (C34-C50)	<20		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	3.56		0.25	%		23-JUL-21	R5528618
L2617215-20 EX13-21-42							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.0901		0.0050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Toluene	0.203		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Ethylbenzene	0.062		0.010	mg/kg	19-JUL-21	25-JUL-21	R5528803
Xylenes	0.22		0.10	mg/kg	19-JUL-21	25-JUL-21	R5528803
m+p-Xylene	0.162		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
o-Xylene	0.060		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Surrogate: 1,4-Difluorobenzene (SS)	119.8		70-130	%	19-JUL-21	25-JUL-21	R5528803
Surrogate: 4-Bromofluorobenzene (SS)	120.0		70-130	%	19-JUL-21	25-JUL-21	R5528803
Surrogate: 3,4-Dichlorotoluene (SS)	104.0		70-130	%	19-JUL-21	25-JUL-21	R5528803
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	83.8		70-130	%	24-JUL-21	24-JUL-21	R5528351
Chrom. to baseline at nC50	NO				24-JUL-21	24-JUL-21	R5528351
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528351
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	311		20	mg/kg		25-JUL-21	
F4 (C34-C50)	174		20	mg/kg		25-JUL-21	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2617215-20 EX13-21-42							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME Total Hydrocarbons							
F4G-SG (GHH-Silica)	650		500	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	505		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	12.7		0.25	%		23-JUL-21	R5528618
F4G Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528729
L2617215-21 EX13-21-31							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Toluene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Ethylbenzene	<0.010		0.010	mg/kg	19-JUL-21	25-JUL-21	R5528803
Xylenes	<0.10		0.10	mg/kg	19-JUL-21	25-JUL-21	R5528803
m+p-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
o-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Surrogate: 1,4-Difluorobenzene (SS)	107.0		70-130	%	19-JUL-21	25-JUL-21	R5528803
Surrogate: 4-Bromofluorobenzene (SS)	106.6		70-130	%	19-JUL-21	25-JUL-21	R5528803
Surrogate: 3,4-Dichlorotoluene (SS)	116.4		70-130	%	19-JUL-21	25-JUL-21	R5528803
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	82.1		70-130	%	24-JUL-21	24-JUL-21	R5528351
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528351
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528351
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	147		20	mg/kg		25-JUL-21	
F4 (C34-C50)	55		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	202		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	6.65		0.25	%		23-JUL-21	R5528618
L2617215-22 EX13-21-39							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Toluene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Ethylbenzene	<0.010		0.010	mg/kg	19-JUL-21	25-JUL-21	R5528803
Xylenes	<0.10		0.10	mg/kg	19-JUL-21	25-JUL-21	R5528803
m+p-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
o-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Surrogate: 1,4-Difluorobenzene (SS)	115.5		70-130	%	19-JUL-21	25-JUL-21	R5528803
Surrogate: 4-Bromofluorobenzene (SS)	103.3		70-130	%	19-JUL-21	25-JUL-21	R5528803
Surrogate: 3,4-Dichlorotoluene (SS)	81.7		70-130	%	19-JUL-21	25-JUL-21	R5528803
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	83.8		70-130	%	24-JUL-21	24-JUL-21	R5528715
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528715
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528715
CCME Total Hydrocarbons							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2617215-22 EX13-21-39							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	76		20	mg/kg		25-JUL-21	
F4 (C34-C50)	39		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	115		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	14.0		0.25	%		24-JUL-21	R5528608
L2617215-23 EX13-21-5							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Toluene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Ethylbenzene	<0.010		0.010	mg/kg	19-JUL-21	25-JUL-21	R5528803
Xylenes	<0.10		0.10	mg/kg	19-JUL-21	25-JUL-21	R5528803
m+p-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
o-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Surrogate: 1,4-Difluorobenzene (SS)	108.0		70-130	%	19-JUL-21	25-JUL-21	R5528803
Surrogate: 4-Bromofluorobenzene (SS)	96.1		70-130	%	19-JUL-21	25-JUL-21	R5528803
Surrogate: 3,4-Dichlorotoluene (SS)	87.3		70-130	%	19-JUL-21	25-JUL-21	R5528803
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	88.3		70-130	%	24-JUL-21	24-JUL-21	R5528715
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528715
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528715
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	<20		20	mg/kg		25-JUL-21	
F4 (C34-C50)	<20		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	11.9		0.25	%		24-JUL-21	R5528608
L2617215-24 EX13-21-28							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Toluene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Ethylbenzene	<0.010		0.010	mg/kg	19-JUL-21	25-JUL-21	R5528803
Xylenes	<0.10		0.10	mg/kg	19-JUL-21	25-JUL-21	R5528803
m+p-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
o-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Surrogate: 1,4-Difluorobenzene (SS)	123.7		70-130	%	19-JUL-21	25-JUL-21	R5528803
Surrogate: 4-Bromofluorobenzene (SS)	114.9		70-130	%	19-JUL-21	25-JUL-21	R5528803
Surrogate: 3,4-Dichlorotoluene (SS)	90.0		70-130	%	19-JUL-21	25-JUL-21	R5528803
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	88.4		70-130	%	24-JUL-21	24-JUL-21	R5528715

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2617215-24 EX13-21-28							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME Total Extractable Hydrocarbons							
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528715
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528715
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	123		20	mg/kg		25-JUL-21	
F4 (C34-C50)	44		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	167		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	6.74		0.25	%		24-JUL-21	R5528608
L2617215-25 EX13-21-18							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.0141		0.0050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Toluene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Ethylbenzene	0.010		0.010	mg/kg	19-JUL-21	25-JUL-21	R5528803
Xylenes	<0.10		0.10	mg/kg	19-JUL-21	25-JUL-21	R5528803
m+p-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
o-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5528803
Surrogate: 1,4-Difluorobenzene (SS)	112.3		70-130	%	19-JUL-21	25-JUL-21	R5528803
Surrogate: 4-Bromofluorobenzene (SS)	105.0		70-130	%	19-JUL-21	25-JUL-21	R5528803
Surrogate: 3,4-Dichlorotoluene (SS)	89.8		70-130	%	19-JUL-21	25-JUL-21	R5528803
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	83.7		70-130	%	24-JUL-21	24-JUL-21	R5528715
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528715
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528715
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	182		20	mg/kg		25-JUL-21	
F4 (C34-C50)	59		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	241		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	4.50		0.25	%		24-JUL-21	R5528608

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
SHMI	Surrogate recovery was outside ALS DQO (High) due to Matrix Interference.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BTXS,F1-MEOH-ED	Soil	BTEX and F1	EPA 8260C/5021A and CWS PHC Tier 1

This analysis involves the extraction of a subsample of the sediment/soil with methanol added in the field at the time of subsampling. The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. BTX Target compound concentrations are measured using mass spectrometry detection. The instrumental portion of F1 analysis is carried out in accordance with the Canada Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method (2001).

ETL-TVH,TEH-CCME-ED	Soil	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F2-4-TMB-ED	Soil	CCME Total Extractable Hydrocarbons	CCME Tier 1

This analysis is carried out in accordance with the "Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method, Canadian Council of Ministers of the Environment" For C10 to C50 hydrocarbons (F2, F3, F4) and gravimetric heavy hydrocarbons (F4G-sg), a subsample of the sediment/soil is extracted with 1:1 hexane:acetone using a rotary extractor. The extract undergoes a silica-gel clean-up to remove polar compounds. F2, F3 & F4 are analyzed by on-column GC/FID, and F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where F4 (C34-C50) and F4G-sg results are reported for a sample, the larger of the reported values is used for comparison against the relevant CCME standard for F4.
7. The gravimetric heavy hydrocarbon results (F4G-sg), cannot be added to the C6 to C50 hydrocarbon results.
8. This method is validated for use.
9. Data from analysis of quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram.

F4G-TMB-ED	Soil	CCME Gravimetric Heavy Hydrocarbons (SG)	CCME CWS-PHC, Pub #1310, Dec 2001
PREP-MOISTURE-ED	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)

The weighed portion of soil is placed in a 105°C oven to dry to a constant weight; the drying time will vary based on the moisture content of the soil. The dried soil weight is then used to calculate % moisture.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ED		ALS ENVIRONMENTAL - EDMONTON, ALBERTA, CANADA	

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Client: GOLDER ASSOCIATES LTD
16820 107 Ave NW
Edmonton AB T5P 4C3
Contact: Steven Fiddler

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTXS,F1-MEOH-ED	**Soil**							
Batch R5508763								
WG3582622-4 DUP		**L2617215-1**						
Benzene		0.122	0.114		mg/kg	6.2	30	25-JUL-21
Toluene		0.189	0.170		mg/kg	11	30	25-JUL-21
Ethylbenzene		0.037	0.038		mg/kg	3.3	30	25-JUL-21
m+p-Xylene		0.082	0.070		mg/kg	16	30	25-JUL-21
o-Xylene		0.054	<0.050	RPD-NA	mg/kg	N/A	30	25-JUL-21
WG3582622-2 LCS								
Benzene			90.8		%		70-130	25-JUL-21
Toluene			81.7		%		70-130	25-JUL-21
Ethylbenzene			80.8		%		70-130	25-JUL-21
m+p-Xylene			100.6		%		70-130	25-JUL-21
o-Xylene			99.4		%		70-130	25-JUL-21
WG3582622-1 MB								
Benzene			<0.0050		mg/kg		0.005	25-JUL-21
Toluene			<0.050		mg/kg		0.05	25-JUL-21
Ethylbenzene			<0.010		mg/kg		0.01	25-JUL-21
m+p-Xylene			<0.050		mg/kg		0.05	25-JUL-21
o-Xylene			<0.050		mg/kg		0.05	25-JUL-21
Surrogate: 1,4-Difluorobenzene (SS)			101.6		%		70-130	25-JUL-21
Surrogate: 4-Bromofluorobenzene (SS)			94.2		%		70-130	25-JUL-21
Surrogate: 3,4-Dichlorotoluene (SS)			107.3		%		70-130	25-JUL-21
Batch R5528803								
WG3582642-4 DUP		**L2617215-2**						
Benzene		0.0065	0.0060		mg/kg	9.4	30	25-JUL-21
Toluene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	25-JUL-21
Ethylbenzene		<0.010	<0.010	RPD-NA	mg/kg	N/A	30	25-JUL-21
m+p-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	25-JUL-21
o-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	25-JUL-21
WG3582304-2 LCS								
Benzene			102.3		%		70-130	25-JUL-21
Toluene			107.8		%		70-130	25-JUL-21
Ethylbenzene			97.1		%		70-130	25-JUL-21
m+p-Xylene			102.6		%		70-130	25-JUL-21
o-Xylene			111.0		%		70-130	25-JUL-21
WG3582642-2 LCS								
Benzene			108.0		%		70-130	25-JUL-21

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTXS,F1-MEOH-ED	**Soil**							
Batch R5528803								
WG3582642-2 LCS								
Toluene			105.2		%		70-130	25-JUL-21
Ethylbenzene			99.4		%		70-130	25-JUL-21
m+p-Xylene			98.1		%		70-130	25-JUL-21
o-Xylene			117.6		%		70-130	25-JUL-21
WG3582304-1 MB								
Benzene			<0.0050		mg/kg		0.005	25-JUL-21
Toluene			<0.050		mg/kg		0.05	25-JUL-21
Ethylbenzene			<0.010		mg/kg		0.01	25-JUL-21
m+p-Xylene			<0.050		mg/kg		0.05	25-JUL-21
o-Xylene			<0.050		mg/kg		0.05	25-JUL-21
Surrogate: 1,4-Difluorobenzene (SS)			118.5		%		70-130	25-JUL-21
Surrogate: 4-Bromofluorobenzene (SS)			104.8		%		70-130	25-JUL-21
Surrogate: 3,4-Dichlorotoluene (SS)			98.2		%		70-130	25-JUL-21
WG3582642-1 MB								
Benzene			<0.0050		mg/kg		0.005	25-JUL-21
Toluene			<0.050		mg/kg		0.05	25-JUL-21
Ethylbenzene			<0.010		mg/kg		0.01	25-JUL-21
m+p-Xylene			<0.050		mg/kg		0.05	25-JUL-21
o-Xylene			<0.050		mg/kg		0.05	25-JUL-21
Surrogate: 1,4-Difluorobenzene (SS)			123.5		%		70-130	25-JUL-21
Surrogate: 4-Bromofluorobenzene (SS)			106.1		%		70-130	25-JUL-21
Surrogate: 3,4-Dichlorotoluene (SS)			111.4		%		70-130	25-JUL-21
WG3582642-5 MS		**L2617215-22**						
Benzene			121.8		%		60-140	25-JUL-21
Toluene			122.9		%		60-140	25-JUL-21
Ethylbenzene			116.5		%		60-140	25-JUL-21
m+p-Xylene			122.3		%		60-140	25-JUL-21
o-Xylene			128.4		%		60-140	25-JUL-21
F2-4-TMB-ED	**Soil**							
Batch R5528351								
WG3582609-4 DUP		**L2617215-21**						
F2 (C10-C16)		<20	<20	RPD-NA	mg/kg	N/A	40	24-JUL-21
F3 (C16-C34)		147	97	DUP-H	mg/kg	N/A	40	24-JUL-21
F4 (C34-C50)		55	37		mg/kg	38	40	24-JUL-21
WG3582609-3 IRM		**ALS PHC RM3**						

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-4-TMB-ED	**Soil**							
Batch R5528351								
WG3582609-3 IRM		**ALS PHC RM3**						
F2 (C10-C16)			94.4		%		70-130	24-JUL-21
F3 (C16-C34)			93.8		%		70-130	24-JUL-21
F4 (C34-C50)			88.4		%		70-130	24-JUL-21
WG3582609-2 LCS		**DIESEL/MOTOR OIL**						
F2 (C10-C16)			106.7		%		70-130	24-JUL-21
F3 (C16-C34)			111.5		%		70-130	24-JUL-21
F4 (C34-C50)			106.5		%		70-130	24-JUL-21
WG3582609-1 MB								
F2 (C10-C16)			<20		mg/kg		20	24-JUL-21
F3 (C16-C34)			<20		mg/kg		20	24-JUL-21
F4 (C34-C50)			<20		mg/kg		20	24-JUL-21
Surrogate: 2-Bromobenzotrifluoride			90.0		%		70-130	24-JUL-21
Batch R5528715								
WG3582613-3 IRM		**ALS PHC RM3**						
F2 (C10-C16)			95.7		%		70-130	24-JUL-21
F3 (C16-C34)			97.1		%		70-130	24-JUL-21
F4 (C34-C50)			80.6		%		70-130	24-JUL-21
WG3582613-2 LCS		**DIESEL/MOTOR OIL**						
F2 (C10-C16)			105.8		%		70-130	24-JUL-21
F3 (C16-C34)			114.8		%		70-130	24-JUL-21
F4 (C34-C50)			114.8		%		70-130	24-JUL-21
WG3582613-1 MB								
F2 (C10-C16)			<20		mg/kg		20	24-JUL-21
F3 (C16-C34)			<20		mg/kg		20	24-JUL-21
F4 (C34-C50)			<20		mg/kg		20	24-JUL-21
Surrogate: 2-Bromobenzotrifluoride			91.8		%		70-130	24-JUL-21
F4G-TMB-ED	**Soil**							
Batch R5528729								
WG3583122-3 IRM		**ALS PHC RM3**						
Gravimetric Heavy Hydrocarbons (Silica)			87.4		%		70-130	24-JUL-21
WG3583122-2 LCS		**DIESEL / MOTOR OIL**						
Gravimetric Heavy Hydrocarbons (Silica)			88.1		%		70-130	24-JUL-21
WG3583122-1 MB								
Gravimetric Heavy Hydrocarbons (Silica)			<500		mg/kg		500	24-JUL-21
PREP-MOISTURE-ED	**Soil**							

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PREP-MOISTURE-ED	**Soil**							
Batch R5528608								
WG3582649-2 LCS								
% Moisture			99.9		%		90-110	24-JUL-21
WG3582649-1 MB								
% Moisture			<0.25		%		0.25	24-JUL-21
Batch R5528618								
WG3582535-3 DUP		**L2617215-21**						
% Moisture		6.65	6.63		%	0.4	20	23-JUL-21
WG3582535-2 LCS								
% Moisture			99.5		%		90-110	23-JUL-21
WG3582535-1 MB								
% Moisture			<0.25		%		0.25	23-JUL-21

Quality Control Report

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
DUP-H	Duplicate results outside ALS DQO, due to sample heterogeneity.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number:

Page 1 of 2

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report ☑ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax k.lewis@mandalayresources.com
Email 2 sfiddler@golder.com
Email 3 jmusijowski@golder.com

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax
Email 2

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐
EMERGENCY: 1 Business day [E - 100%] ☑ | Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm
For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #: Q80711
Job #: 20446521
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only):

ALS Contact: Oliver Gregg Sampler:

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	Lead	Arsenic	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	EX13-21-30	19-Jul-21		Soil	3	X				
	EX13-21-26					X				
	EX13-21-63					X				
	EX13-21-52					X				
	EX13-21-10					X				
	EX13-21-37					X				
	EX13-21-43					X				
	EX13-21-69					X				
	EX13-21-64					X				
	EX13-21-2					X				
	EX13-21-71					X				
	EX13-21-29					X				

L2617215-COFC

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO
Are samples for human consumption/ use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☑ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
10.9							

SHIPMENT RELEASE (client use)

Released by:	Date:	Time:
R Boyce RLE	July 20/21	8:00

INITIAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:
	July 22-21	845

FINAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCT 2016 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number:

Page 2 of 2

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)

Quality Control (QC) Report with Report ☑ YES ☐ NO

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: k.lewis@mandalayresources.com

Email 2: sfiddler@golder.com

Email 3: jmusijowski@golder.com

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax:

Email 2:

Project Information

ALS Account # / Quote #: Q80711

Job #: 2044652 1

PO / AFE:

LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#:

Major/Minor Code: Routing Code:

Requisitioner:

Location:

ALS Lab Work Order # (lab use only):

ALS Contact: Oliver Gregg **Sampler:**

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ 3 day [P3-25%] ☐ 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☐ Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	Lead	Arsenic	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	EX13-21-23	July 19-21		Soil	3	X				
	EX13-21-23					X				
	EX13-21-65					X				
	EX13-21-65D					X				
	EX13-21-62					X				
	EX13-21-46					X				
	EX13-21-46D					X				
	EX13-21-42					X				
	EX13-21-31					X				
	EX13-21-39					X				
	EX13-21-5					X				
	EX13-21-28					X				

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human consumption/ use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☑ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
10.9							

SHIPMENT RELEASE (client use)

Released by: R. Boyer Date: July 20/21 Time: 8:00

INITIAL SHIPMENT RECEPTION (lab use only)

Received by: Date: Jul 22-21 Time: 8:45

FINAL SHIPMENT RECEPTION (lab use only)

Received by: Date: Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCT 2015 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

XXXXXXXXXXXX

XXXXXXXXXXXX

XXXXXXXXXXXX

XXXXXXXXXXXX

GOLDER ASSOCIATES LTD
ATTN: Steven Fiddler
16820 107 Ave NW
Edmonton AB T5P 4C3

Date Received: 22-JUL-21
Report Date: 25-JUL-21 15:13 (MT)
Version: FINAL

Client Phone: 780-483-3499

Certificate of Analysis

Lab Work Order #: L2617230

Project P.O. #: NOT SUBMITTED
Job Reference: 20446521
C of C Numbers:
Legal Site Desc:

Harman Bhullar
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2617230-1 EX12-21-3							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.0061		0.0050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Toluene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Ethylbenzene	<0.010		0.010	mg/kg	19-JUL-21	25-JUL-21	R5508763
Xylenes	<0.10		0.10	mg/kg	19-JUL-21	25-JUL-21	R5508763
m+p-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
o-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Surrogate: 1,4-Difluorobenzene (SS)	118.1		70-130	%	19-JUL-21	25-JUL-21	R5508763
Surrogate: 4-Bromofluorobenzene (SS)	110.6		70-130	%	19-JUL-21	25-JUL-21	R5508763
Surrogate: 3,4-Dichlorotoluene (SS)	122.0		70-130	%	19-JUL-21	25-JUL-21	R5508763
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	87.4		70-130	%	24-JUL-21	24-JUL-21	R5528715
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528715
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528715
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	63		20	mg/kg		25-JUL-21	
F4 (C34-C50)	26		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	89		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	12.7		0.25	%		23-JUL-21	R5528389
L2617230-2 EX12-21-4							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.0186		0.0050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Toluene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Ethylbenzene	0.012		0.010	mg/kg	19-JUL-21	25-JUL-21	R5508763
Xylenes	<0.10		0.10	mg/kg	19-JUL-21	25-JUL-21	R5508763
m+p-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
o-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Surrogate: 1,4-Difluorobenzene (SS)	108.0		70-130	%	19-JUL-21	25-JUL-21	R5508763
Surrogate: 4-Bromofluorobenzene (SS)	113.6		70-130	%	19-JUL-21	25-JUL-21	R5508763
Surrogate: 3,4-Dichlorotoluene (SS)	96.9		70-130	%	19-JUL-21	25-JUL-21	R5508763
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	86.2		70-130	%	24-JUL-21	24-JUL-21	R5528715
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528715
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528715
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	79		20	mg/kg		25-JUL-21	
F4 (C34-C50)	31		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	110		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	10.1		0.25	%		23-JUL-21	R5528389

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2617230-3 EX12-21-5							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Toluene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Ethylbenzene	<0.010		0.010	mg/kg	19-JUL-21	25-JUL-21	R5508763
Xylenes	<0.10		0.10	mg/kg	19-JUL-21	25-JUL-21	R5508763
m+p-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
o-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Surrogate: 1,4-Difluorobenzene (SS)	96.4		70-130	%	19-JUL-21	25-JUL-21	R5508763
Surrogate: 4-Bromofluorobenzene (SS)	95.7		70-130	%	19-JUL-21	25-JUL-21	R5508763
Surrogate: 3,4-Dichlorotoluene (SS)	103.0		70-130	%	19-JUL-21	25-JUL-21	R5508763
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	83.9		70-130	%	24-JUL-21	24-JUL-21	R5528715
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528715
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528715
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	110		20	mg/kg		25-JUL-21	
F4 (C34-C50)	45		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	155		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	12.2		0.25	%		23-JUL-21	R5528389
L2617230-4 EX12-21-7							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Toluene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Ethylbenzene	<0.010		0.010	mg/kg	19-JUL-21	25-JUL-21	R5508763
Xylenes	<0.10		0.10	mg/kg	19-JUL-21	25-JUL-21	R5508763
m+p-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
o-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Surrogate: 1,4-Difluorobenzene (SS)	111.1		70-130	%	19-JUL-21	25-JUL-21	R5508763
Surrogate: 4-Bromofluorobenzene (SS)	106.0		70-130	%	19-JUL-21	25-JUL-21	R5508763
Surrogate: 3,4-Dichlorotoluene (SS)	126.1		70-130	%	19-JUL-21	25-JUL-21	R5508763
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	86.4		70-130	%	24-JUL-21	24-JUL-21	R5528715
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528715
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528715
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	<20		20	mg/kg		25-JUL-21	
F4 (C34-C50)	<20		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	8.62		0.25	%		23-JUL-21	R5528389

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2617230-5 EX12-21-9							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Toluene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Ethylbenzene	<0.010		0.010	mg/kg	19-JUL-21	25-JUL-21	R5508763
Xylenes	<0.10		0.10	mg/kg	19-JUL-21	25-JUL-21	R5508763
m+p-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
o-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Surrogate: 1,4-Difluorobenzene (SS)	106.6		70-130	%	19-JUL-21	25-JUL-21	R5508763
Surrogate: 4-Bromofluorobenzene (SS)	99.7		70-130	%	19-JUL-21	25-JUL-21	R5508763
Surrogate: 3,4-Dichlorotoluene (SS)	112.1		70-130	%	19-JUL-21	25-JUL-21	R5508763
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	84.3		70-130	%	24-JUL-21	24-JUL-21	R5528715
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528715
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528715
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	<20		20	mg/kg		25-JUL-21	
F4 (C34-C50)	<20		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	7.72		0.25	%		23-JUL-21	R5528389
L2617230-6 EX12-21-10							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Toluene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Ethylbenzene	<0.010		0.010	mg/kg	19-JUL-21	25-JUL-21	R5508763
Xylenes	<0.10		0.10	mg/kg	19-JUL-21	25-JUL-21	R5508763
m+p-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
o-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Surrogate: 1,4-Difluorobenzene (SS)	114.2		70-130	%	19-JUL-21	25-JUL-21	R5508763
Surrogate: 4-Bromofluorobenzene (SS)	106.9		70-130	%	19-JUL-21	25-JUL-21	R5508763
Surrogate: 3,4-Dichlorotoluene (SS)	113.6		70-130	%	19-JUL-21	25-JUL-21	R5508763
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	87.3		70-130	%	24-JUL-21	24-JUL-21	R5528715
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528715
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528715
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	<20		20	mg/kg		25-JUL-21	
F4 (C34-C50)	<20		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	9.03		0.25	%		23-JUL-21	R5528389

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2617230-7 EX12-21-11							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Toluene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Ethylbenzene	<0.010		0.010	mg/kg	19-JUL-21	25-JUL-21	R5508763
Xylenes	<0.10		0.10	mg/kg	19-JUL-21	25-JUL-21	R5508763
m+p-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
o-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Surrogate: 1,4-Difluorobenzene (SS)	111.7		70-130	%	19-JUL-21	25-JUL-21	R5508763
Surrogate: 4-Bromofluorobenzene (SS)	107.3		70-130	%	19-JUL-21	25-JUL-21	R5508763
Surrogate: 3,4-Dichlorotoluene (SS)	106.0		70-130	%	19-JUL-21	25-JUL-21	R5508763
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	89.9		70-130	%	24-JUL-21	24-JUL-21	R5528715
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528715
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528715
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	<20		20	mg/kg		25-JUL-21	
F4 (C34-C50)	<20		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	12.3		0.25	%		23-JUL-21	R5528389
L2617230-8 EX12-21-13							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Toluene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Ethylbenzene	<0.010		0.010	mg/kg	19-JUL-21	25-JUL-21	R5508763
Xylenes	<0.10		0.10	mg/kg	19-JUL-21	25-JUL-21	R5508763
m+p-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
o-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Surrogate: 1,4-Difluorobenzene (SS)	106.0		70-130	%	19-JUL-21	25-JUL-21	R5508763
Surrogate: 4-Bromofluorobenzene (SS)	109.6		70-130	%	19-JUL-21	25-JUL-21	R5508763
Surrogate: 3,4-Dichlorotoluene (SS)	108.2		70-130	%	19-JUL-21	25-JUL-21	R5508763
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	85.4		70-130	%	24-JUL-21	24-JUL-21	R5528715
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528715
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528715
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	<20		20	mg/kg		25-JUL-21	
F4 (C34-C50)	<20		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	9.90		0.25	%		23-JUL-21	R5528389

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2617230-9 EX12-21-15							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Toluene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Ethylbenzene	<0.010		0.010	mg/kg	19-JUL-21	25-JUL-21	R5508763
Xylenes	<0.10		0.10	mg/kg	19-JUL-21	25-JUL-21	R5508763
m+p-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
o-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Surrogate: 1,4-Difluorobenzene (SS)	100.1		70-130	%	19-JUL-21	25-JUL-21	R5508763
Surrogate: 4-Bromofluorobenzene (SS)	94.1		70-130	%	19-JUL-21	25-JUL-21	R5508763
Surrogate: 3,4-Dichlorotoluene (SS)	92.5		70-130	%	19-JUL-21	25-JUL-21	R5508763
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	85.8		70-130	%	24-JUL-21	24-JUL-21	R5528715
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528715
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528715
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	<20		20	mg/kg		25-JUL-21	
F4 (C34-C50)	<20		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	10.4		0.25	%		23-JUL-21	R5528389
L2617230-10 EX12-21-17							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Toluene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Ethylbenzene	<0.010		0.010	mg/kg	19-JUL-21	25-JUL-21	R5508763
Xylenes	<0.10		0.10	mg/kg	19-JUL-21	25-JUL-21	R5508763
m+p-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
o-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Surrogate: 1,4-Difluorobenzene (SS)	112.3		70-130	%	19-JUL-21	25-JUL-21	R5508763
Surrogate: 4-Bromofluorobenzene (SS)	103.6		70-130	%	19-JUL-21	25-JUL-21	R5508763
Surrogate: 3,4-Dichlorotoluene (SS)	115.2		70-130	%	19-JUL-21	25-JUL-21	R5508763
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	87.4		70-130	%	24-JUL-21	24-JUL-21	R5528715
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528715
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528715
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	<20		20	mg/kg		25-JUL-21	
F4 (C34-C50)	<20		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	7.98		0.25	%		23-JUL-21	R5528389

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2617230-11 EX12-21-18							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Toluene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Ethylbenzene	<0.010		0.010	mg/kg	19-JUL-21	25-JUL-21	R5508763
Xylenes	<0.10		0.10	mg/kg	19-JUL-21	25-JUL-21	R5508763
m+p-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
o-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Surrogate: 1,4-Difluorobenzene (SS)	109.1		70-130	%	19-JUL-21	25-JUL-21	R5508763
Surrogate: 4-Bromofluorobenzene (SS)	103.3		70-130	%	19-JUL-21	25-JUL-21	R5508763
Surrogate: 3,4-Dichlorotoluene (SS)	124.2		70-130	%	19-JUL-21	25-JUL-21	R5508763
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	86.8		70-130	%	24-JUL-21	24-JUL-21	R5528715
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528715
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528715
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	<20		20	mg/kg		25-JUL-21	
F4 (C34-C50)	<20		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	11.5		0.25	%		23-JUL-21	R5528389
L2617230-12 EX12-21-21							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.0051		0.0050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Toluene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Ethylbenzene	<0.010		0.010	mg/kg	19-JUL-21	25-JUL-21	R5508763
Xylenes	<0.10		0.10	mg/kg	19-JUL-21	25-JUL-21	R5508763
m+p-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
o-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Surrogate: 1,4-Difluorobenzene (SS)	104.6		70-130	%	19-JUL-21	25-JUL-21	R5508763
Surrogate: 4-Bromofluorobenzene (SS)	100.0		70-130	%	19-JUL-21	25-JUL-21	R5508763
Surrogate: 3,4-Dichlorotoluene (SS)	111.3		70-130	%	19-JUL-21	25-JUL-21	R5508763
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	84.0		70-130	%	24-JUL-21	24-JUL-21	R5528715
Chrom. to baseline at nC50	NO				24-JUL-21	24-JUL-21	R5528715
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528715
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	34		20	mg/kg		25-JUL-21	
F3 (C16-C34)	493		20	mg/kg		25-JUL-21	
F4 (C34-C50)	222		20	mg/kg		25-JUL-21	
F4G-SG (GHH-Silica)	<500		500	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	749		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	7.37		0.25	%		23-JUL-21	R5528389

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2617230-12 EX12-21-21							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
F4G Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528729
L2617230-13 EX12-21-25							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Toluene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Ethylbenzene	<0.010		0.010	mg/kg	19-JUL-21	25-JUL-21	R5508763
Xylenes	<0.10		0.10	mg/kg	19-JUL-21	25-JUL-21	R5508763
m+p-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
o-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Surrogate: 1,4-Difluorobenzene (SS)	99.8		70-130	%	19-JUL-21	25-JUL-21	R5508763
Surrogate: 4-Bromofluorobenzene (SS)	96.0		70-130	%	19-JUL-21	25-JUL-21	R5508763
Surrogate: 3,4-Dichlorotoluene (SS)	112.9		70-130	%	19-JUL-21	25-JUL-21	R5508763
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	84.5		70-130	%	24-JUL-21	24-JUL-21	R5528715
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528715
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528715
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	<20		20	mg/kg		25-JUL-21	
F4 (C34-C50)	<20		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	8.37		0.25	%		23-JUL-21	R5528389
L2617230-14 EX12-21-14							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Toluene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Ethylbenzene	<0.010		0.010	mg/kg	19-JUL-21	25-JUL-21	R5508763
Xylenes	<0.10		0.10	mg/kg	19-JUL-21	25-JUL-21	R5508763
m+p-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
o-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Surrogate: 1,4-Difluorobenzene (SS)	101.0		70-130	%	19-JUL-21	25-JUL-21	R5508763
Surrogate: 4-Bromofluorobenzene (SS)	97.8		70-130	%	19-JUL-21	25-JUL-21	R5508763
Surrogate: 3,4-Dichlorotoluene (SS)	116.2		70-130	%	19-JUL-21	25-JUL-21	R5508763
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	90.2		70-130	%	24-JUL-21	24-JUL-21	R5528715
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528715
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528715
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	<20		20	mg/kg		25-JUL-21	
F4 (C34-C50)	<20		20	mg/kg		25-JUL-21	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2617230-14 EX12-21-14							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME Total Hydrocarbons							
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	14.7		0.25	%		23-JUL-21	R5528389
L2617230-15 EX12-21-27							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.0234		0.0050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Toluene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Ethylbenzene	0.012		0.010	mg/kg	19-JUL-21	25-JUL-21	R5508763
Xylenes	<0.10		0.10	mg/kg	19-JUL-21	25-JUL-21	R5508763
m+p-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
o-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Surrogate: 1,4-Difluorobenzene (SS)	105.8		70-130	%	19-JUL-21	25-JUL-21	R5508763
Surrogate: 4-Bromofluorobenzene (SS)	120.7		70-130	%	19-JUL-21	25-JUL-21	R5508763
Surrogate: 3,4-Dichlorotoluene (SS)	85.7		70-130	%	19-JUL-21	25-JUL-21	R5508763
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	79.9		70-130	%	24-JUL-21	24-JUL-21	R5528715
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528715
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528715
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	56		20	mg/kg		25-JUL-21	
F3 (C16-C34)	205		20	mg/kg		25-JUL-21	
F4 (C34-C50)	81		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	342		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	9.41		0.25	%		23-JUL-21	R5528389
L2617230-16 EX12-21-28							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Toluene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Ethylbenzene	<0.010		0.010	mg/kg	19-JUL-21	25-JUL-21	R5508763
Xylenes	<0.10		0.10	mg/kg	19-JUL-21	25-JUL-21	R5508763
m+p-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
o-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Surrogate: 1,4-Difluorobenzene (SS)	114.3		70-130	%	19-JUL-21	25-JUL-21	R5508763
Surrogate: 4-Bromofluorobenzene (SS)	111.4		70-130	%	19-JUL-21	25-JUL-21	R5508763
Surrogate: 3,4-Dichlorotoluene (SS)	123.3		70-130	%	19-JUL-21	25-JUL-21	R5508763
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	79.9		70-130	%	24-JUL-21	24-JUL-21	R5528715
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528715
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528715
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2617230-16 EX12-21-28							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME Total Hydrocarbons							
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	39		20	mg/kg		25-JUL-21	
F4 (C34-C50)	<20		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	39		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	7.02		0.25	%		23-JUL-21	R5528389
L2617230-17 EX12-21-5D							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Toluene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Ethylbenzene	<0.010		0.010	mg/kg	19-JUL-21	25-JUL-21	R5508763
Xylenes	<0.10		0.10	mg/kg	19-JUL-21	25-JUL-21	R5508763
m+p-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
o-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Surrogate: 1,4-Difluorobenzene (SS)	95.9		70-130	%	19-JUL-21	25-JUL-21	R5508763
Surrogate: 4-Bromofluorobenzene (SS)	93.7		70-130	%	19-JUL-21	25-JUL-21	R5508763
Surrogate: 3,4-Dichlorotoluene (SS)	99.6		70-130	%	19-JUL-21	25-JUL-21	R5508763
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	80.2		70-130	%	24-JUL-21	24-JUL-21	R5528715
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528715
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528715
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	94		20	mg/kg		25-JUL-21	
F4 (C34-C50)	55		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	149		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	11.9		0.25	%		23-JUL-21	R5528389
L2617230-18 EX12-21-9D							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Toluene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Ethylbenzene	<0.010		0.010	mg/kg	19-JUL-21	25-JUL-21	R5508763
Xylenes	<0.10		0.10	mg/kg	19-JUL-21	25-JUL-21	R5508763
m+p-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
o-Xylene	<0.050		0.050	mg/kg	19-JUL-21	25-JUL-21	R5508763
Surrogate: 1,4-Difluorobenzene (SS)	100.1		70-130	%	19-JUL-21	25-JUL-21	R5508763
Surrogate: 4-Bromofluorobenzene (SS)	96.4		70-130	%	19-JUL-21	25-JUL-21	R5508763
Surrogate: 3,4-Dichlorotoluene (SS)	114.3		70-130	%	19-JUL-21	25-JUL-21	R5508763
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	78.4		70-130	%	24-JUL-21	24-JUL-21	R5528715
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528715
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528715

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2617230-18 EX12-21-9D							
Sampled By: CLIENT on 19-JUL-21							
Matrix: Soil							
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	<20		20	mg/kg		25-JUL-21	
F4 (C34-C50)	<20		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	6.02		0.25	%		23-JUL-21	R5528389

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BTXS,F1-MEOH-ED	Soil	BTEX and F1	EPA 8260C/5021A and CWS PHC Tier 1

This analysis involves the extraction of a subsample of the sediment/soil with methanol added in the field at the time of subsampling. The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. BTX Target compound concentrations are measured using mass spectrometry detection. The instrumental portion of F1 analysis is carried out in accordance with the Canada Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method (2001).

ETL-TVH,TEH-CCME-ED	Soil	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F2-4-TMB-ED	Soil	CCME Total Extractable Hydrocarbons	CCME Tier 1

This analysis is carried out in accordance with the "Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method, Canadian Council of Ministers of the Environment" For C10 to C50 hydrocarbons (F2, F3, F4) and gravimetric heavy hydrocarbons (F4G-sg), a subsample of the sediment/soil is extracted with 1:1 hexane:acetone using a rotary extractor. The extract undergoes a silica-gel clean-up to remove polar compounds. F2, F3 & F4 are analyzed by on-column GC/FID, and F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where F4 (C34-C50) and F4G-sg results are reported for a sample, the larger of the reported values is used for comparison against the relevant CCME standard for F4.
7. The gravimetric heavy hydrocarbon results (F4G-sg), cannot be added to the C6 to C50 hydrocarbon results.
8. This method is validated for use.
9. Data from analysis of quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram.

F4G-TMB-ED	Soil	CCME Gravimetric Heavy Hydrocarbons (SG)	CCME CWS-PHC, Pub #1310, Dec 2001
PREP-MOISTURE-ED	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)

The weighed portion of soil is placed in a 105°C oven to dry to a constant weight; the drying time will vary based on the moisture content of the soil. The dried soil weight is then used to calculate % moisture.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
ED	ALS ENVIRONMENTAL - EDMONTON, ALBERTA, CANADA

Chain of Custody Numbers:

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Client: GOLDER ASSOCIATES LTD
16820 107 Ave NW
Edmonton AB T5P 4C3
Contact: Steven Fiddler

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTXS,F1-MEOH-ED	**Soil**							
Batch R5508763								
WG3582577-4 DUP		**L2617230-1**						
Benzene		0.0061	0.0056		mg/kg	8.6	30	25-JUL-21
Toluene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	25-JUL-21
Ethylbenzene		<0.010	<0.010	RPD-NA	mg/kg	N/A	30	25-JUL-21
m+p-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	25-JUL-21
o-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	25-JUL-21
WG3582577-2 LCS								
Benzene			90.8		%		70-130	25-JUL-21
Toluene			81.7		%		70-130	25-JUL-21
Ethylbenzene			80.8		%		70-130	25-JUL-21
m+p-Xylene			100.6		%		70-130	25-JUL-21
o-Xylene			99.4		%		70-130	25-JUL-21
WG3582577-1 MB								
Benzene			<0.0050		mg/kg		0.005	25-JUL-21
Toluene			<0.050		mg/kg		0.05	25-JUL-21
Ethylbenzene			<0.010		mg/kg		0.01	25-JUL-21
m+p-Xylene			<0.050		mg/kg		0.05	25-JUL-21
o-Xylene			<0.050		mg/kg		0.05	25-JUL-21
Surrogate: 1,4-Difluorobenzene (SS)			99.6		%		70-130	25-JUL-21
Surrogate: 4-Bromofluorobenzene (SS)			94.7		%		70-130	25-JUL-21
Surrogate: 3,4-Dichlorotoluene (SS)			111.7		%		70-130	25-JUL-21
F2-4-TMB-ED	**Soil**							
Batch R5528715								
WG3582613-4 DUP		**L2617230-16**						
F2 (C10-C16)		<20	<20	RPD-NA	mg/kg	N/A	40	24-JUL-21
F3 (C16-C34)		39	61	J	mg/kg	22	40	24-JUL-21
F4 (C34-C50)		<20	26	RPD-NA	mg/kg	N/A	40	24-JUL-21
WG3582613-3 IRM		**ALS PHC RM3**						
F2 (C10-C16)			95.7		%		70-130	24-JUL-21
F3 (C16-C34)			97.1		%		70-130	24-JUL-21
F4 (C34-C50)			80.6		%		70-130	24-JUL-21
WG3582616-3 IRM		**ALS PHC RM3**						
F2 (C10-C16)			101.8		%		70-130	24-JUL-21
F3 (C16-C34)			103.9		%		70-130	24-JUL-21
F4 (C34-C50)			96.2		%		70-130	24-JUL-21
WG3582613-2 LCS		**DIESEL/MOTOR OIL**						

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-4-TMB-ED	**Soil**							
Batch R5528715								
WG3582613-2 LCS		**DIESEL/MOTOR OIL**						
F2 (C10-C16)			105.8		%		70-130	24-JUL-21
F3 (C16-C34)			114.8		%		70-130	24-JUL-21
F4 (C34-C50)			114.8		%		70-130	24-JUL-21
WG3582616-2 LCS		**DIESEL/MOTOR OIL**						
F2 (C10-C16)			101.6		%		70-130	24-JUL-21
F3 (C16-C34)			106.8		%		70-130	24-JUL-21
F4 (C34-C50)			109.3		%		70-130	24-JUL-21
WG3582613-1 MB								
F2 (C10-C16)			<20		mg/kg		20	24-JUL-21
F3 (C16-C34)			<20		mg/kg		20	24-JUL-21
F4 (C34-C50)			<20		mg/kg		20	24-JUL-21
Surrogate: 2-Bromobenzotrifluoride			91.8		%		70-130	24-JUL-21
WG3582616-1 MB								
F2 (C10-C16)			<20		mg/kg		20	24-JUL-21
F3 (C16-C34)			<20		mg/kg		20	24-JUL-21
F4 (C34-C50)			<20		mg/kg		20	24-JUL-21
Surrogate: 2-Bromobenzotrifluoride			83.7		%		70-130	24-JUL-21
F4G-TMB-ED	**Soil**							
Batch R5528729								
WG3583122-3 IRM		**ALS PHC RM3**						
Gravimetric Heavy Hydrocarbons (Silica)			87.4		%		70-130	24-JUL-21
WG3583122-2 LCS		**DIESEL / MOTOR OIL**						
Gravimetric Heavy Hydrocarbons (Silica)			88.1		%		70-130	24-JUL-21
WG3583122-1 MB								
Gravimetric Heavy Hydrocarbons (Silica)			<500		mg/kg		500	24-JUL-21
PREP-MOISTURE-ED	**Soil**							
Batch R5528389								
WG3582584-2 LCS								
% Moisture			99.5		%		90-110	23-JUL-21
WG3582584-1 MB								
% Moisture			<0.25		%		0.25	23-JUL-21

Quality Control Report

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number:

Page 1 of 2

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution	
Select Report Format:	☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report	☑ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	k.lewis@mandalayresources.com
Email 2	sfiddler@golder.com
Email 3	jmusijowski@golder.com

Invoice Distribution	
Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	
Email 2	

Project Information	
ALS Account # / Quote #:	Q80711
Job #:	20446521
PO / AFE:	
LSD:	

Oil and Gas Required Fields (client use)	
AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (lab use only):

ALS Contact: Oliver Gregg **Sampler:**

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☒ | Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	Lead	Arsenic	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	EX12-21-3	19-Jul-21		Soil	3	X				
	EX12-21-4				3	X				
	EX12-21-5				3	X				
	EX12-21-7				3	X				
	EX12-21-9				3	X				
	EX12-21-10					X				
	EX12-21-11					X				
	EX12-21-13					X				
	EX12-21-15					X				
	EX12-21-17					X				
	EX12-21-18					X				
	EX12-21-21					X				

L2617230-COFC

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human consumption/ use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen	☐	SIF Observations	Yes ☐	No	☐
Ice Packs	☑ Ice Cubes ☐	Custody seal intact	Yes ☐	No	☐
Cooling Initiated	☐				

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
12.1					

SHIPMENT RELEASE (client use)		
Released by: Ray R. Boyce	Date: July 21/21	Time: 11:00

INITIAL SHIPMENT RECEPTION (lab use only)		
Received by:	Date: Jul 22-21	Time: 8:45

FINAL SHIPMENT RECEPTION (lab use only)		
Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCT 2018 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number:

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)

Quality Control (QC) Report with Report ☑ YES ☐ NO

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: k.lewis@mandalayresources.com

Email 2: sfiddler@golder.com

Email 3: jmusijowski@golder.com

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax:

Email 2:

Project Information

ALS Account # / Quote #: Q80711

Job #:

PO / AFE:

LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#:

Major/Minor Code: Routing Code:

Requisitioner:

Location:

ALS Lab Work Order # (lab use only):

ALS Contact: Oliver Gregg **Sampler:**

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☐ | Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	Lead	Arsenic	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	EX12-21-25	19-Jul-21		Soil	3	X				
	EX12-21-14					X				
	EX12-21-27					X				
	EX12-21-28					X				
	EX12-21-50					X				
	EX12-21-90					X				

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human consumption/ use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
12.1							

SHIPMENT RELEASE (client use)

Released by:	Date:	Time:
R. Boyce	July 21/21	11:00

INITIAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:
	21/07/21	8:45

FINAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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Failure to complete [illegible]s of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees [illegible]e Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

GOLDER ASSOCIATES LTD
ATTN: Steven Fiddler
16820 107 Ave NW
Edmonton AB T5P 4C3

Date Received: 22-JUL-21
Report Date: 25-JUL-21 15:13 (MT)
Version: FINAL

Client Phone: 780-483-3499

Certificate of Analysis

Lab Work Order #: L2617242

Project P.O. #: NOT SUBMITTED
Job Reference: 20446521
C of C Numbers:
Legal Site Desc:

Harman Bhullar
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2617242-1 EX7-21-3							
Sampled By: CLIENT on 20-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Toluene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Ethylbenzene	0.043		0.010	mg/kg	20-JUL-21	25-JUL-21	R5508763
Xylenes	0.41		0.10	mg/kg	20-JUL-21	25-JUL-21	R5508763
m+p-Xylene	0.114		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
o-Xylene	0.292		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Surrogate: 1,4-Difluorobenzene (SS)	99.0		70-130	%	20-JUL-21	25-JUL-21	R5508763
Surrogate: 4-Bromofluorobenzene (SS)	125.6		70-130	%	20-JUL-21	25-JUL-21	R5508763
Surrogate: 3,4-Dichlorotoluene (SS)	73.1		70-130	%	20-JUL-21	25-JUL-21	R5508763
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	87.2		70-130	%	24-JUL-21	24-JUL-21	R5528715
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528715
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528715
CCME Total Hydrocarbons							
F1 (C6-C10)	53		10	mg/kg		25-JUL-21	
F1-BTEX	53		10	mg/kg		25-JUL-21	
F2 (C10-C16)	262		20	mg/kg		25-JUL-21	
F3 (C16-C34)	43		20	mg/kg		25-JUL-21	
F4 (C34-C50)	<20		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	358		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	11.1		0.25	%		24-JUL-21	R5528608
L2617242-2 EX7-21-5							
Sampled By: CLIENT on 20-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Toluene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Ethylbenzene	<0.010		0.010	mg/kg	20-JUL-21	25-JUL-21	R5508763
Xylenes	<0.10		0.10	mg/kg	20-JUL-21	25-JUL-21	R5508763
m+p-Xylene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
o-Xylene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Surrogate: 1,4-Difluorobenzene (SS)	95.3		70-130	%	20-JUL-21	25-JUL-21	R5508763
Surrogate: 4-Bromofluorobenzene (SS)	97.9		70-130	%	20-JUL-21	25-JUL-21	R5508763
Surrogate: 3,4-Dichlorotoluene (SS)	92.2		70-130	%	20-JUL-21	25-JUL-21	R5508763
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	81.8		70-130	%	24-JUL-21	24-JUL-21	R5528715
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528715
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528715
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	<20		20	mg/kg		25-JUL-21	
F4 (C34-C50)	<20		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	4.62		0.25	%		24-JUL-21	R5528608

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2617242-3 EX7-21-12							
Sampled By: CLIENT on 20-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Toluene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Ethylbenzene	<0.010		0.010	mg/kg	20-JUL-21	25-JUL-21	R5508763
Xylenes	<0.10		0.10	mg/kg	20-JUL-21	25-JUL-21	R5508763
m+p-Xylene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
o-Xylene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Surrogate: 1,4-Difluorobenzene (SS)	94.0		70-130	%	20-JUL-21	25-JUL-21	R5508763
Surrogate: 4-Bromofluorobenzene (SS)	90.3		70-130	%	20-JUL-21	25-JUL-21	R5508763
Surrogate: 3,4-Dichlorotoluene (SS)	98.6		70-130	%	20-JUL-21	25-JUL-21	R5508763
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	83.6		70-130	%	24-JUL-21	24-JUL-21	R5528715
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528715
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528715
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	<20		20	mg/kg		25-JUL-21	
F4 (C34-C50)	<20		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	13.0		0.25	%		24-JUL-21	R5528608
L2617242-4 EX7-21-14							
Sampled By: CLIENT on 20-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Toluene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Ethylbenzene	<0.010		0.010	mg/kg	20-JUL-21	25-JUL-21	R5508763
Xylenes	<0.10		0.10	mg/kg	20-JUL-21	25-JUL-21	R5508763
m+p-Xylene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
o-Xylene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Surrogate: 1,4-Difluorobenzene (SS)	109.6		70-130	%	20-JUL-21	25-JUL-21	R5508763
Surrogate: 4-Bromofluorobenzene (SS)	174.7	SLMI	70-130	%	20-JUL-21	25-JUL-21	R5508763
Surrogate: 3,4-Dichlorotoluene (SS)	75.2		70-130	%	20-JUL-21	25-JUL-21	R5508763
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	83.2		70-130	%	24-JUL-21	24-JUL-21	R5528715
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528715
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528715
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	<20		20	mg/kg		25-JUL-21	
F4 (C34-C50)	<20		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	12.3		0.25	%		24-JUL-21	R5528608

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2617242-5 EX7-21-21							
Sampled By: CLIENT on 20-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Toluene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Ethylbenzene	0.033		0.010	mg/kg	20-JUL-21	25-JUL-21	R5508763
Xylenes	<0.10		0.10	mg/kg	20-JUL-21	25-JUL-21	R5508763
m+p-Xylene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
o-Xylene	0.053		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Surrogate: 1,4-Difluorobenzene (SS)	0.0	NR:SNA	70-130	%	20-JUL-21	25-JUL-21	R5508763
Surrogate: 4-Bromofluorobenzene (SS)	0.0	NR:SNA	70-130	%	20-JUL-21	25-JUL-21	R5508763
Surrogate: 3,4-Dichlorotoluene (SS)	0.80	NR:SNA	70-130	%	20-JUL-21	25-JUL-21	R5508763
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	78.6		70-130	%	24-JUL-21	24-JUL-21	R5528715
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528715
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528715
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	<20		20	mg/kg		25-JUL-21	
F4 (C34-C50)	<20		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	8.49		0.25	%		24-JUL-21	R5528608
L2617242-6 EX7-21-22							
Sampled By: CLIENT on 20-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Toluene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Ethylbenzene	<0.010		0.010	mg/kg	20-JUL-21	25-JUL-21	R5508763
Xylenes	<0.10		0.10	mg/kg	20-JUL-21	25-JUL-21	R5508763
m+p-Xylene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
o-Xylene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Surrogate: 1,4-Difluorobenzene (SS)	105.1		70-130	%	20-JUL-21	25-JUL-21	R5508763
Surrogate: 4-Bromofluorobenzene (SS)	111.5		70-130	%	20-JUL-21	25-JUL-21	R5508763
Surrogate: 3,4-Dichlorotoluene (SS)	93.4		70-130	%	20-JUL-21	25-JUL-21	R5508763
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	80.2		70-130	%	24-JUL-21	24-JUL-21	R5528715
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528715
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528715
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	<20		20	mg/kg		25-JUL-21	
F4 (C34-C50)	<20		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	8.00		0.25	%		24-JUL-21	R5528608

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2617242-7 EX7-21-9							
Sampled By: CLIENT on 20-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Toluene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Ethylbenzene	<0.010		0.010	mg/kg	20-JUL-21	25-JUL-21	R5508763
Xylenes	<0.10		0.10	mg/kg	20-JUL-21	25-JUL-21	R5508763
m+p-Xylene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
o-Xylene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Surrogate: 1,4-Difluorobenzene (SS)	112.6		70-130	%	20-JUL-21	25-JUL-21	R5508763
Surrogate: 4-Bromofluorobenzene (SS)	121.6		70-130	%	20-JUL-21	25-JUL-21	R5508763
Surrogate: 3,4-Dichlorotoluene (SS)	101.9		70-130	%	20-JUL-21	25-JUL-21	R5508763
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	85.1		70-130	%	24-JUL-21	24-JUL-21	R5528715
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528715
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528715
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	<20		20	mg/kg		25-JUL-21	
F4 (C34-C50)	<20		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	11.4		0.25	%		24-JUL-21	R5528608
L2617242-8 EX7-21-19							
Sampled By: CLIENT on 20-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Toluene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Ethylbenzene	0.059		0.010	mg/kg	20-JUL-21	25-JUL-21	R5508763
Xylenes	0.14		0.10	mg/kg	20-JUL-21	25-JUL-21	R5508763
m+p-Xylene	0.136		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
o-Xylene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Surrogate: 1,4-Difluorobenzene (SS)	97.3		70-130	%	20-JUL-21	25-JUL-21	R5508763
Surrogate: 4-Bromofluorobenzene (SS)	107.5		70-130	%	20-JUL-21	25-JUL-21	R5508763
Surrogate: 3,4-Dichlorotoluene (SS)	82.3		70-130	%	20-JUL-21	25-JUL-21	R5508763
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	83.5		70-130	%	24-JUL-21	24-JUL-21	R5528715
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528715
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528715
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	<20		20	mg/kg		25-JUL-21	
F4 (C34-C50)	<20		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	9.62		0.25	%		24-JUL-21	R5528608

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2617242-9 EX7-21-19D							
Sampled By: CLIENT on 20-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Toluene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Ethylbenzene	0.060		0.010	mg/kg	20-JUL-21	25-JUL-21	R5508763
Xylenes	0.13		0.10	mg/kg	20-JUL-21	25-JUL-21	R5508763
m+p-Xylene	0.127		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
o-Xylene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Surrogate: 1,4-Difluorobenzene (SS)	117.7		70-130	%	20-JUL-21	25-JUL-21	R5508763
Surrogate: 4-Bromofluorobenzene (SS)	125.1		70-130	%	20-JUL-21	25-JUL-21	R5508763
Surrogate: 3,4-Dichlorotoluene (SS)	100.4		70-130	%	20-JUL-21	25-JUL-21	R5508763
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	85.3		70-130	%	24-JUL-21	24-JUL-21	R5528715
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528715
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528715
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	<20		20	mg/kg		25-JUL-21	
F4 (C34-C50)	<20		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	9.80		0.25	%		24-JUL-21	R5528608
L2617242-10 EX7-21-13							
Sampled By: CLIENT on 20-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.0555		0.0050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Toluene	0.963		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Ethylbenzene	2.87		0.010	mg/kg	20-JUL-21	25-JUL-21	R5508763
Xylenes	11.0		0.10	mg/kg	20-JUL-21	25-JUL-21	R5508763
m+p-Xylene	3.93		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
o-Xylene	7.11		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Surrogate: 1,4-Difluorobenzene (SS)	98.8		70-130	%	20-JUL-21	25-JUL-21	R5508763
Surrogate: 4-Bromofluorobenzene (SS)	109.5		70-130	%	20-JUL-21	25-JUL-21	R5508763
Surrogate: 3,4-Dichlorotoluene (SS)	56.7	SLMI	70-130	%	20-JUL-21	25-JUL-21	R5508763
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	N/A	SMI	70-130	%	24-JUL-21	24-JUL-21	R5528715
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528715
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528715
CCME Total Hydrocarbons							
F1 (C6-C10)	769		10	mg/kg		25-JUL-21	
F1-BTEX	754		10	mg/kg		25-JUL-21	
F2 (C10-C16)	2930		20	mg/kg		25-JUL-21	
F3 (C16-C34)	352		20	mg/kg		25-JUL-21	
F4 (C34-C50)	<20		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	4050		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	15.0		0.25	%		24-JUL-21	R5528608

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
NR:SNA	No Result: Surrogate Not Added
SLMI	Surrogate recovery was outside ALS DQO (Low) due to Matrix Interference.
SMI	Surrogate recovery could not be measured due to sample matrix interference.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BTXS,F1-MEOH-ED	Soil	BTEX and F1	EPA 8260C/5021A and CWS PHC Tier 1

This analysis involves the extraction of a subsample of the sediment/soil with methanol added in the field at the time of subsampling. The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. BTX Target compound concentrations are measured using mass spectrometry detection. The instrumental portion of F1 analysis is carried out in accordance with the Canada Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method (2001).

ETL-TVH,TEH-CCME-ED	Soil	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F2-4-TMB-ED	Soil	CCME Total Extractable Hydrocarbons	CCME Tier 1

This analysis is carried out in accordance with the "Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method, Canadian Council of Ministers of the Environment" For C10 to C50 hydrocarbons (F2, F3, F4) and gravimetric heavy hydrocarbons (F4G-sg), a subsample of the sediment/soil is extracted with 1:1 hexane:acetone using a rotary extractor. The extract undergoes a silica-gel clean-up to remove polar compounds. F2, F3 & F4 are analyzed by on-column GC/FID, and F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where F4 (C34-C50) and F4G-sg results are reported for a sample, the larger of the reported values is used for comparison against the relevant CCME standard for F4.
7. The gravimetric heavy hydrocarbon results (F4G-sg), cannot be added to the C6 to C50 hydrocarbon results.
8. This method is validated for use.
9. Data from analysis of quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram.

PREP-MOISTURE-ED	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)

The weighed portion of soil is placed in a 105°C oven to dry to a constant weight; the drying time will vary based on the moisture content of the soil. The dried soil weight is then used to calculate % moisture.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
Laboratory Definition Code	**Laboratory Location**		
ED	ALS ENVIRONMENTAL - EDMONTON, ALBERTA, CANADA		

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L2617242 Report Date: 25-JUL-21

Client: GOLDER ASSOCIATES LTD
16820 107 Ave NW
Edmonton AB T5P 4C3
Contact: Steven Fiddler

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTXS,F1-MEOH-ED	**Soil**							
Batch R5508763								
WG3582622-2 LCS								
Benzene			90.8		%		70-130	25-JUL-21
Toluene			81.7		%		70-130	25-JUL-21
Ethylbenzene			80.8		%		70-130	25-JUL-21
m+p-Xylene			100.6		%		70-130	25-JUL-21
o-Xylene			99.4		%		70-130	25-JUL-21
WG3582622-1 MB								
Benzene			<0.0050		mg/kg		0.005	25-JUL-21
Toluene			<0.050		mg/kg		0.05	25-JUL-21
Ethylbenzene			<0.010		mg/kg		0.01	25-JUL-21
m+p-Xylene			<0.050		mg/kg		0.05	25-JUL-21
o-Xylene			<0.050		mg/kg		0.05	25-JUL-21
Surrogate: 1,4-Difluorobenzene (SS)			101.6		%		70-130	25-JUL-21
Surrogate: 4-Bromofluorobenzene (SS)			94.2		%		70-130	25-JUL-21
Surrogate: 3,4-Dichlorotoluene (SS)			107.3		%		70-130	25-JUL-21
F2-4-TMB-ED	**Soil**							
Batch R5528715								
WG3582616-4 DUP		**L2617242-10**						
F2 (C10-C16)		2930	2910		mg/kg	0.8	40	24-JUL-21
F3 (C16-C34)		352	336		mg/kg	4.7	40	24-JUL-21
F4 (C34-C50)		<20	<20	RPD-NA	mg/kg	N/A	40	24-JUL-21
WG3582616-3 IRM		**ALS PHC RM3**						
F2 (C10-C16)			101.8		%		70-130	24-JUL-21
F3 (C16-C34)			103.9		%		70-130	24-JUL-21
F4 (C34-C50)			96.2		%		70-130	24-JUL-21
WG3582616-2 LCS		**DIESEL/MOTOR OIL**						
F2 (C10-C16)			101.6		%		70-130	24-JUL-21
F3 (C16-C34)			106.8		%		70-130	24-JUL-21
F4 (C34-C50)			109.3		%		70-130	24-JUL-21
WG3582616-1 MB								
F2 (C10-C16)			<20		mg/kg		20	24-JUL-21
F3 (C16-C34)			<20		mg/kg		20	24-JUL-21
F4 (C34-C50)			<20		mg/kg		20	24-JUL-21
Surrogate: 2-Bromobenzotrifluoride			83.7		%		70-130	24-JUL-21
PREP-MOISTURE-ED	**Soil**							

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PREP-MOISTURE-ED	**Soil**							
Batch R5528608								
WG3582649-2 LCS								
% Moisture			99.9		%		90-110	24-JUL-21
WG3582649-1 MB								
% Moisture			<0.25		%		0.25	24-JUL-21

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number:

Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)

Quality Control (QC) Report with Report ☑ YES ☐ NO

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: k.lewis@mandalayresources.com

Email 2: sfiddler@golder.com

Email 3: jmusijowski@golder.com

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax:

Email 2:

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☑ | Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #: Q80711

Job #: 20446521

PO / AFE:

LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: | PO#

Major/Minor Code: | Routing Code:

Requisitioner:

Location:

ALS Lab Work Order # (lab use only):

ALS Contact: Oliver Gregg | Sampler:

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	Lead	Arsenic	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	EX7-21-3	20/JUL-21		Soil	3	X				
	EX7-21-5	"		"	"	X				
	EX7-21-12	"		"	"	X				
	EX7-21-14	"		"	"	X				
	EX7-21-21	"		"	"	X				
	EX7-21-22	"		"	"	X				
	EX7-21-9	"		"	"	X				
	EX7-21-19	"		"	"	X				
	EX7-21-190	"		"	"	X				
	EX7-21-13	"		"	"	X				

L2617242-COFC

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human consumption/ use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ | SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ | Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C	FINAL COOLER TEMPERATURES °C
13.1	

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
	JUL 21 21	1200		JUL 22-21	845			

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

DCT 2016 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

GOLDER ASSOCIATES LTD
ATTN: Steven Fiddler
16820 107 Ave NW
Edmonton AB T5P 4C3

Date Received: 22-JUL-21
Report Date: 25-JUL-21 15:13 (MT)
Version: FINAL

Client Phone: 780-483-3499

Certificate of Analysis

Lab Work Order #: L2617248

Project P.O. #: NOT SUBMITTED
Job Reference: 20446521
C of C Numbers:
Legal Site Desc:

Harman Bhullar
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2617248-1 EX10-21-6							
Sampled By: CLIENT on 20-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Toluene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Ethylbenzene	<0.010		0.010	mg/kg	20-JUL-21	25-JUL-21	R5508763
Xylenes	<0.10		0.10	mg/kg	20-JUL-21	25-JUL-21	R5508763
m+p-Xylene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
o-Xylene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Surrogate: 1,4-Difluorobenzene (SS)	99.6		70-130	%	20-JUL-21	25-JUL-21	R5508763
Surrogate: 4-Bromofluorobenzene (SS)	106.3		70-130	%	20-JUL-21	25-JUL-21	R5508763
Surrogate: 3,4-Dichlorotoluene (SS)	77.2		70-130	%	20-JUL-21	25-JUL-21	R5508763
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	75.7		70-130	%	24-JUL-21	24-JUL-21	R5528351
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528351
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528351
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	380		20	mg/kg		25-JUL-21	
F4 (C34-C50)	60		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	440		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	8.23		0.25	%		23-JUL-21	R5528389
L2617248-2 EX10-21-7							
Sampled By: CLIENT on 20-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Toluene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Ethylbenzene	<0.010		0.010	mg/kg	20-JUL-21	25-JUL-21	R5508763
Xylenes	<0.10		0.10	mg/kg	20-JUL-21	25-JUL-21	R5508763
m+p-Xylene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
o-Xylene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Surrogate: 1,4-Difluorobenzene (SS)	96.5		70-130	%	20-JUL-21	25-JUL-21	R5508763
Surrogate: 4-Bromofluorobenzene (SS)	96.6		70-130	%	20-JUL-21	25-JUL-21	R5508763
Surrogate: 3,4-Dichlorotoluene (SS)	91.1		70-130	%	20-JUL-21	25-JUL-21	R5508763
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	82.6		70-130	%	24-JUL-21	24-JUL-21	R5528351
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528351
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528351
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	477		20	mg/kg		25-JUL-21	
F4 (C34-C50)	65		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	542		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	9.53		0.25	%		24-JUL-21	R5528608

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2617248-3 EX10-21-8							
Sampled By: CLIENT on 20-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Toluene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Ethylbenzene	<0.010		0.010	mg/kg	20-JUL-21	25-JUL-21	R5508763
Xylenes	<0.10		0.10	mg/kg	20-JUL-21	25-JUL-21	R5508763
m+p-Xylene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
o-Xylene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Surrogate: 1,4-Difluorobenzene (SS)	105.2		70-130	%	20-JUL-21	25-JUL-21	R5508763
Surrogate: 4-Bromofluorobenzene (SS)	100.9		70-130	%	20-JUL-21	25-JUL-21	R5508763
Surrogate: 3,4-Dichlorotoluene (SS)	102.1		70-130	%	20-JUL-21	25-JUL-21	R5508763
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	82.2		70-130	%	24-JUL-21	24-JUL-21	R5528351
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528351
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528351
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	191		20	mg/kg		25-JUL-21	
F4 (C34-C50)	34		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	225		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	9.34		0.25	%		24-JUL-21	R5528608
L2617248-4 EX10-21-1							
Sampled By: CLIENT on 20-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Toluene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Ethylbenzene	<0.010		0.010	mg/kg	20-JUL-21	25-JUL-21	R5508763
Xylenes	<0.10		0.10	mg/kg	20-JUL-21	25-JUL-21	R5508763
m+p-Xylene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
o-Xylene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Surrogate: 1,4-Difluorobenzene (SS)	108.4		70-130	%	20-JUL-21	25-JUL-21	R5508763
Surrogate: 4-Bromofluorobenzene (SS)	110.2		70-130	%	20-JUL-21	25-JUL-21	R5508763
Surrogate: 3,4-Dichlorotoluene (SS)	105.6		70-130	%	20-JUL-21	25-JUL-21	R5508763
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	85.1		70-130	%	24-JUL-21	24-JUL-21	R5528351
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528351
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528351
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	20		20	mg/kg		25-JUL-21	
F4 (C34-C50)	<20		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	20		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	9.48		0.25	%		24-JUL-21	R5528608

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2617248-5 EX10-21-2							
Sampled By: CLIENT on 20-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Toluene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Ethylbenzene	<0.010		0.010	mg/kg	20-JUL-21	25-JUL-21	R5508763
Xylenes	<0.10		0.10	mg/kg	20-JUL-21	25-JUL-21	R5508763
m+p-Xylene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
o-Xylene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Surrogate: 1,4-Difluorobenzene (SS)	103.2		70-130	%	20-JUL-21	25-JUL-21	R5508763
Surrogate: 4-Bromofluorobenzene (SS)	98.9		70-130	%	20-JUL-21	25-JUL-21	R5508763
Surrogate: 3,4-Dichlorotoluene (SS)	102.0		70-130	%	20-JUL-21	25-JUL-21	R5508763
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	81.1		70-130	%	24-JUL-21	24-JUL-21	R5528351
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528351
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528351
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	<20		20	mg/kg		25-JUL-21	
F4 (C34-C50)	<20		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	9.17		0.25	%		24-JUL-21	R5528608
L2617248-6 EX10-21-2D							
Sampled By: CLIENT on 20-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Toluene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Ethylbenzene	<0.010		0.010	mg/kg	20-JUL-21	25-JUL-21	R5508763
Xylenes	<0.10		0.10	mg/kg	20-JUL-21	25-JUL-21	R5508763
m+p-Xylene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
o-Xylene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Surrogate: 1,4-Difluorobenzene (SS)	107.2		70-130	%	20-JUL-21	25-JUL-21	R5508763
Surrogate: 4-Bromofluorobenzene (SS)	101.8		70-130	%	20-JUL-21	25-JUL-21	R5508763
Surrogate: 3,4-Dichlorotoluene (SS)	113.0		70-130	%	20-JUL-21	25-JUL-21	R5508763
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	82.2		70-130	%	24-JUL-21	24-JUL-21	R5528351
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528351
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528351
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	<20		20	mg/kg		25-JUL-21	
F4 (C34-C50)	<20		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	9.40		0.25	%		24-JUL-21	R5528608

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2617248-7 EX10-21-10							
Sampled By: CLIENT on 20-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Toluene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Ethylbenzene	<0.010		0.010	mg/kg	20-JUL-21	25-JUL-21	R5508763
Xylenes	<0.10		0.10	mg/kg	20-JUL-21	25-JUL-21	R5508763
m+p-Xylene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
o-Xylene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Surrogate: 1,4-Difluorobenzene (SS)	105.2		70-130	%	20-JUL-21	25-JUL-21	R5508763
Surrogate: 4-Bromofluorobenzene (SS)	97.0		70-130	%	20-JUL-21	25-JUL-21	R5508763
Surrogate: 3,4-Dichlorotoluene (SS)	106.1		70-130	%	20-JUL-21	25-JUL-21	R5508763
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	79.0		70-130	%	24-JUL-21	24-JUL-21	R5528351
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528351
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528351
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	<20		20	mg/kg		25-JUL-21	
F4 (C34-C50)	<20		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	8.60		0.25	%		24-JUL-21	R5528608
L2617248-8 EX10-21-11							
Sampled By: CLIENT on 20-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Toluene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Ethylbenzene	<0.010		0.010	mg/kg	20-JUL-21	25-JUL-21	R5508763
Xylenes	<0.10		0.10	mg/kg	20-JUL-21	25-JUL-21	R5508763
m+p-Xylene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
o-Xylene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Surrogate: 1,4-Difluorobenzene (SS)	106.2		70-130	%	20-JUL-21	25-JUL-21	R5508763
Surrogate: 4-Bromofluorobenzene (SS)	102.2		70-130	%	20-JUL-21	25-JUL-21	R5508763
Surrogate: 3,4-Dichlorotoluene (SS)	107.5		70-130	%	20-JUL-21	25-JUL-21	R5508763
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	79.7		70-130	%	24-JUL-21	24-JUL-21	R5528351
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528351
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528351
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	156		20	mg/kg		25-JUL-21	
F4 (C34-C50)	82		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	238		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	10.9		0.25	%		24-JUL-21	R5528623

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2617248-9 EX10-21-12							
Sampled By: CLIENT on 20-JUL-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Toluene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Ethylbenzene	<0.010		0.010	mg/kg	20-JUL-21	25-JUL-21	R5508763
Xylenes	<0.10		0.10	mg/kg	20-JUL-21	25-JUL-21	R5508763
m+p-Xylene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
o-Xylene	<0.050		0.050	mg/kg	20-JUL-21	25-JUL-21	R5508763
Surrogate: 1,4-Difluorobenzene (SS)	99.2		70-130	%	20-JUL-21	25-JUL-21	R5508763
Surrogate: 4-Bromofluorobenzene (SS)	95.3		70-130	%	20-JUL-21	25-JUL-21	R5508763
Surrogate: 3,4-Dichlorotoluene (SS)	103.1		70-130	%	20-JUL-21	25-JUL-21	R5508763
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	79.6		70-130	%	24-JUL-21	24-JUL-21	R5528351
Chrom. to baseline at nC50	YES				24-JUL-21	24-JUL-21	R5528351
Prep/Analysis Dates					24-JUL-21	24-JUL-21	R5528351
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		25-JUL-21	
F1-BTEX	<10		10	mg/kg		25-JUL-21	
F2 (C10-C16)	<20		20	mg/kg		25-JUL-21	
F3 (C16-C34)	<20		20	mg/kg		25-JUL-21	
F4 (C34-C50)	<20		20	mg/kg		25-JUL-21	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		25-JUL-21	
Miscellaneous Parameters							
% Moisture	10.7		0.25	%		24-JUL-21	R5528623

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BTXS,F1-MEOH-ED	Soil	BTEX and F1	EPA 8260C/5021A and CWS PHC Tier 1

This analysis involves the extraction of a subsample of the sediment/soil with methanol added in the field at the time of subsampling. The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. BTX Target compound concentrations are measured using mass spectrometry detection. The instrumental portion of F1 analysis is carried out in accordance with the Canada Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method (2001).

ETL-TVH,TEH-CCME-ED	Soil	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F2-4-TMB-ED	Soil	CCME Total Extractable Hydrocarbons	CCME Tier 1

This analysis is carried out in accordance with the "Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method, Canadian Council of Ministers of the Environment" For C10 to C50 hydrocarbons (F2, F3, F4) and gravimetric heavy hydrocarbons (F4G-sg), a subsample of the sediment/soil is extracted with 1:1 hexane:acetone using a rotary extractor. The extract undergoes a silica-gel clean-up to remove polar compounds. F2, F3 & F4 are analyzed by on-column GC/FID, and F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where F4 (C34-C50) and F4G-sg results are reported for a sample, the larger of the reported values is used for comparison against the relevant CCME standard for F4.
7. The gravimetric heavy hydrocarbon results (F4G-sg), cannot be added to the C6 to C50 hydrocarbon results.
8. This method is validated for use.
9. Data from analysis of quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram.

PREP-MOISTURE-ED	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)

The weighed portion of soil is placed in a 105°C oven to dry to a constant weight; the drying time will vary based on the moisture content of the soil. The dried soil weight is then used to calculate % moisture.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
ED	ALS ENVIRONMENTAL - EDMONTON, ALBERTA, CANADA

Chain of Custody Numbers:

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L2617248 Report Date: 25-JUL-21

Client: GOLDER ASSOCIATES LTD
16820 107 Ave NW
Edmonton AB T5P 4C3
Contact: Steven Fiddler

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTXS,F1-MEOH-ED	**Soil**							
Batch R5508763								
WG3582622-2 LCS								
Benzene			90.8		%		70-130	25-JUL-21
Toluene			81.7		%		70-130	25-JUL-21
Ethylbenzene			80.8		%		70-130	25-JUL-21
m+p-Xylene			100.6		%		70-130	25-JUL-21
o-Xylene			99.4		%		70-130	25-JUL-21
WG3582622-1 MB								
Benzene			<0.0050		mg/kg		0.005	25-JUL-21
Toluene			<0.050		mg/kg		0.05	25-JUL-21
Ethylbenzene			<0.010		mg/kg		0.01	25-JUL-21
m+p-Xylene			<0.050		mg/kg		0.05	25-JUL-21
o-Xylene			<0.050		mg/kg		0.05	25-JUL-21
Surrogate: 1,4-Difluorobenzene (SS)			101.6		%		70-130	25-JUL-21
Surrogate: 4-Bromofluorobenzene (SS)			94.2		%		70-130	25-JUL-21
Surrogate: 3,4-Dichlorotoluene (SS)			107.3		%		70-130	25-JUL-21
WG3582622-5 MS		**L2617248-9**						
Benzene			105.8		%		60-140	25-JUL-21
Toluene			92.2		%		60-140	25-JUL-21
Ethylbenzene			83.0		%		60-140	25-JUL-21
m+p-Xylene			97.4		%		60-140	25-JUL-21
o-Xylene			96.0		%		60-140	25-JUL-21
F2-4-TMB-ED	**Soil**							
Batch R5528351								
WG3581827-3 IRM		**ALS PHC RM3**						
F2 (C10-C16)			104.9		%		70-130	22-JUL-21
F3 (C16-C34)			110.5		%		70-130	22-JUL-21
F4 (C34-C50)			107.4		%		70-130	22-JUL-21
WG3581827-2 LCS		**DIESEL/MOTOR OIL**						
F2 (C10-C16)			110.6		%		70-130	22-JUL-21
F3 (C16-C34)			114.4		%		70-130	22-JUL-21
F4 (C34-C50)			116.8		%		70-130	22-JUL-21
WG3581827-1 MB								
F2 (C10-C16)			<20		mg/kg		20	22-JUL-21
F3 (C16-C34)			<20		mg/kg		20	22-JUL-21
F4 (C34-C50)			<20		mg/kg		20	22-JUL-21
Surrogate: 2-Bromobenzotrifluoride			81.5		%		70-130	22-JUL-21

Quality Control Report

Workorder: L2617248 Report Date: 25-JUL-21

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PREP-MOISTURE-ED	**Soil**							
Batch R5528389								
WG3582584-3 DUP		**L2617248-1**						
% Moisture		8.23	7.30		%	12	20	23-JUL-21
WG3582584-2 LCS								
% Moisture			99.5		%		90-110	23-JUL-21
WG3582584-1 MB								
% Moisture			<0.25		%		0.25	23-JUL-21
Batch R5528608								
WG3582649-3 DUP		**L2617248-7**						
% Moisture		8.60	8.84		%	2.7	20	24-JUL-21
WG3582649-2 LCS								
% Moisture			99.9		%		90-110	24-JUL-21
WG3582649-1 MB								
% Moisture			<0.25		%		0.25	24-JUL-21
Batch R5528623								
WG3582769-2 LCS								
% Moisture			101.2		%		90-110	24-JUL-21
WG3582769-1 MB								
% Moisture			<0.25		%		0.25	24-JUL-21

Quality Control Report

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number:

Page \ of \

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution	
Select Report Format:	☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report	☑ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	k.lewis@mandalayresources.com
Email 2	sfiddler@golder.com
Email 3	jmusijowski@golder.com

Invoice Distribution	
Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	
Email 2	

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☒ | Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information	
ALS Account # / Quote #:	Q80711
Job #:	20146521
PO / AFE:	
LSD:	

Oil and Gas Required Fields (client use)	
AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (lab use only):

ALS Contact: Oliver Gregg

Sampler:

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	Lead	Arsenic	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	EX10-21-6	20-Jul-21		Soil	3	X				
	EX10-21-7	"		"	3	X				
	EX10-21-8	"		"	3	X				
	EX10-21-1	"		"	3	X				
	EX10-21-2	"		"	3	X				
	EX10-21-3D	"		"	3	X				
	EX10-21-10	"		"	3	X				
	EX10-21-11	"		"	3	X				
	EX10-21-12	"		"	3	X				

L2617248-COFC

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Are samples taken from a Regulated DW System? ☐ YES ☐ NO	Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427
Are samples for human consumption/ use? ☐ YES ☐ NO	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ | SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ | Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
15.1							

SHIPMENT RELEASE (client use)		
Released by:	Date:	Time:
	July 21, 20	1200

INITIAL SHIPMENT RECEPTION (lab use only)		
Received by:	Date:	Time:
	21-22-21	8:05

FINAL SHIPMENT RECEPTION (lab use only)		
Received by:	Date:	Time:

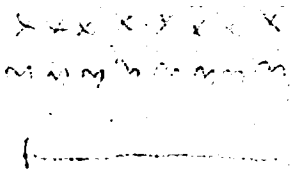
REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

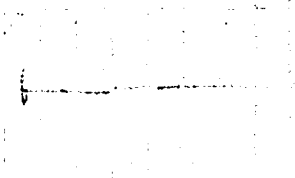
WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCT 2018 FRONT

Failure to complete ...ns of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agre... the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water sampl... taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.





GOLDER ASSOCIATES LTD
ATTN: Steven Fiddler
16820 107 Ave NW
Edmonton AB T5P 4C3

Date Received: 28-JUL-21
Report Date: 01-AUG-21 19:06 (MT)
Version: FINAL

Client Phone: 780-483-3499

Certificate of Analysis

Lab Work Order #: L2620188

Project P.O. #: NOT SUBMITTED
Job Reference: 20446521
C of C Numbers:
Legal Site Desc: LUPIN MINE

Harman Bhullar
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2620188-1 EX7-21-23							
Sampled By: CLIENT on 26-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0078	DLIS	0.0078	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.023	DLIS	0.023	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.022	DLIS	0.022	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.078	DLIS	0.078	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.078	DLIS	0.078	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	123.3		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	115.7		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	01-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	01-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	84.0		70-130	%	31-JUL-21	01-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<16	DLIS	16	mg/kg		01-AUG-21	
F1-BTEX	<16		16	mg/kg		01-AUG-21	
F2 (C10-C16)	73		25	mg/kg		01-AUG-21	
F3 (C16-C34)	63		50	mg/kg		01-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		01-AUG-21	
Total Hydrocarbons (C6-C50)	136		50	mg/kg		01-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	112.0		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.11		0.11	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	2.30		0.25	%		01-AUG-21	R5538031
L2620188-2 EX7-21-24							
Sampled By: CLIENT on 26-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	100.0		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	115.7		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	01-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	01-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	105.7		70-130	%	31-JUL-21	01-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		01-AUG-21	
F1-BTEX	<10		10	mg/kg		01-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		01-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		01-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		01-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		01-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	112.4		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2620188-2 EX7-21-24							
Sampled By: CLIENT on 26-JUL-21							
Matrix: Soil							
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	3.51		0.25	%		01-AUG-21	R5538031

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
DLIS	Detection Limit Adjusted: Insufficient Sample

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BTXS-MEOH-HS-MS-CL	Soil	BTEX and Styrene	EPA 8260C/5021A

The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. Target compound concentrations are measured using mass spectrometry detection.

F1-4-CALC-CL	Soil	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-MEOH-HS-FID-CL	Soil	F1(C6-C10)	CWS PHC Tier 1

The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. The F1 fraction concentration is measured using flame ionization detection.

F2-4-TMB-H/A-FID-CL	Soil	CCME F2-4 Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

This analysis is carried out in accordance with the "Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method, Canadian Council of Ministers of the Environment, December 2001." For C10 to C50 hydrocarbons (F2, F3, F4) and gravimetric heavy hydrocarbons (F4G-sg), a subsample of the sediment/soil is extracted with 1:1 hexane:acetone using a rotary extractor. The extract undergoes a silica-gel clean-up to remove polar compounds. F2, F3 & F4 are analyzed by on-column GC/FID, and F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where F4 (C34-C50) and F4G-sg results are reported for a sample, the larger of the reported values is used for comparison against the relevant CCME standard for F4.
7. The gravimetric heavy hydrocarbon results (F4G-sg), cannot be added to the C6 to C50 hydrocarbon results.
8. This method is validated for use.
9. Data from analysis of quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram.

MOISTURE-CL	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)

This analysis is carried out gravimetrically by drying the sample at 105 C

XYLENES-SUM-CALC-CL	Soil	Sum of Xylene Isomer Concentrations	CALCULATED RESULT

Total xylenes represents the sum of o-xylene and m&p-xylene.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
CL	ALS ENVIRONMENTAL - CALGARY, ALBERTA, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Client: GOLDER ASSOCIATES LTD
16820 107 Ave NW
Edmonton AB T5P 4C3
Contact: Steven Fiddler

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTXS-MEOH-HS-MS-CL	**Soil**							
Batch R5538023								
WG3588235-3 DUP		**L2620188-1**						
Benzene		<0.0078	<0.0078	RPD-NA	mg/kg	N/A	30	31-JUL-21
Ethylbenzene		<0.023	<0.023	RPD-NA	mg/kg	N/A	30	31-JUL-21
Toluene		<0.022	<0.022	RPD-NA	mg/kg	N/A	30	31-JUL-21
o-Xylene		<0.078	<0.078	RPD-NA	mg/kg	N/A	30	31-JUL-21
m+p-Xylene		<0.078	<0.078	RPD-NA	mg/kg	N/A	30	31-JUL-21
WG3588235-2 LCS								
Benzene			86.6		%		70-130	31-JUL-21
Ethylbenzene			90.6		%		70-130	31-JUL-21
Toluene			96.5		%		70-130	31-JUL-21
o-Xylene			92.0		%		70-130	31-JUL-21
m+p-Xylene			83.8		%		70-130	31-JUL-21
WG3588235-1 MB								
Benzene			<0.0050		mg/kg		0.005	31-JUL-21
Ethylbenzene			<0.015		mg/kg		0.015	31-JUL-21
Toluene			<0.014		mg/kg		0.014	31-JUL-21
o-Xylene			<0.050		mg/kg		0.05	31-JUL-21
m+p-Xylene			<0.050		mg/kg		0.05	31-JUL-21
Surrogate: 1,4-Difluorobenzene			104.0		%		70-130	31-JUL-21
Surrogate: 4-Bromofluorobenzene			111.3		%		70-130	31-JUL-21
F1-MEOH-HS-FID-CL	**Soil**							
Batch R5538024								
WG3588235-3 DUP		**L2620188-1**						
F1(C6-C10)		<16	<16	RPD-NA	mg/kg	N/A	30	31-JUL-21
WG3588235-2 LCS								
F1(C6-C10)			96.1		%		70-130	31-JUL-21
WG3588235-1 MB								
F1(C6-C10)			<10		mg/kg		10	31-JUL-21
Surrogate: 3,4-Dichlorotoluene			110.5		%		70-130	31-JUL-21
F2-4-TMB-H/A-FID-CL	**Soil**							
Batch R5538437								
WG3588231-1 MB								
F2: (C10-C16)			<25		mg/kg		25	01-AUG-21
F3: (C16-C34)			<50		mg/kg		50	01-AUG-21
F4: (C34-C50)			<50		mg/kg		50	01-AUG-21
Surrogate: 2-Bromobenzotrifluoride			113.0		%		70-130	01-AUG-21

Quality Control Report

Workorder: L2620188 Report Date: 01-AUG-21

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MOISTURE-CL	**Soil**							
Batch R5538031								
WG3588233-3 DUP		**L2620188-1**						
Moisture		2.30	2.66		%	15	20	01-AUG-21
WG3588233-2 LCS								
Moisture			99.2		%		90-110	01-AUG-21
WG3588233-1 MB								
Moisture			<0.25		%		0.25	01-AUG-21

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

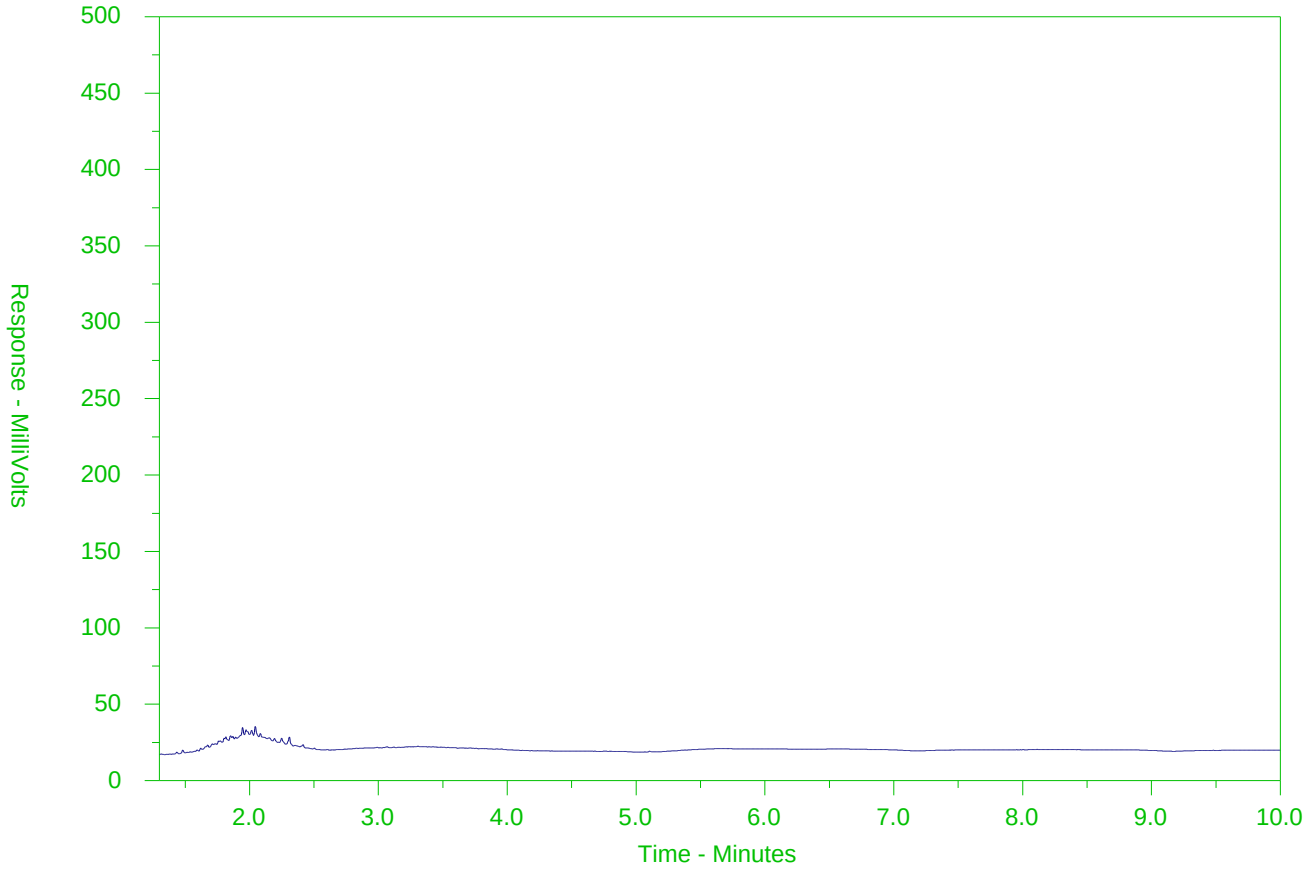
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2620188-1
Client Sample ID: EX7-21-23



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

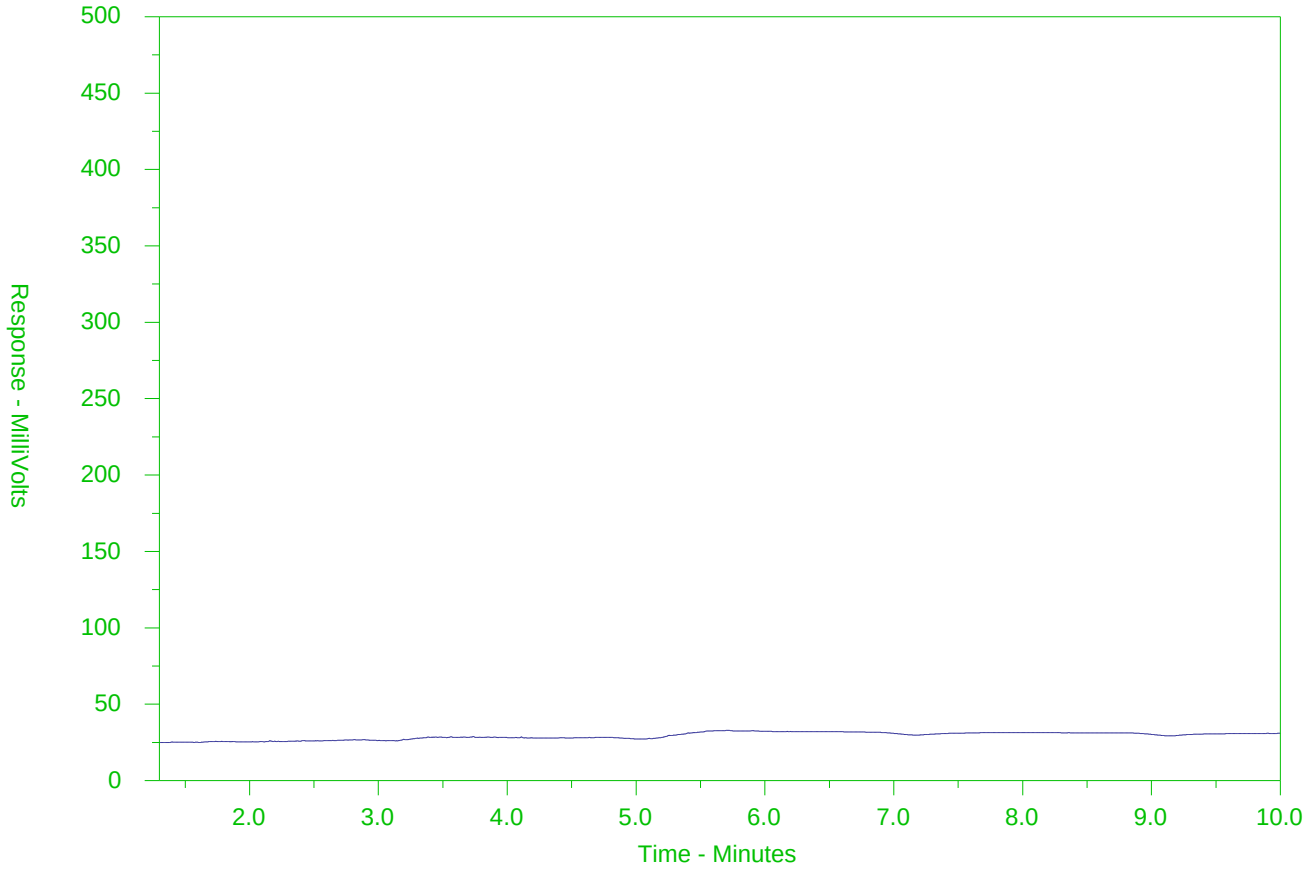
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2620188-2
Client Sample ID: EX7-21-24



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here
(lab use only)

COC Number:

Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution	
Select Report Format:	☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report	☑ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	k.lewis@mandalayresources.com
Email 2	sfiddler@golder.com
Email 3	jmusijowski@golder.com

Invoice Distribution	
Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	
Email 2	

Project Information	
ALS Account # / Quote #:	Q80711
Job #:	20-446521
PO / AFE:	
LSD:	Lupin Mine
ALS Lab Work Order # (lab use only):	L2620188

Oil and Gas Required Fields (client use)		
AFE/Cost Center:		PO#
Major/Minor Code:		Routing Code:
Requisitioner:		
Location:		
ALS Contact:	Oliver Gregg	Sampler:

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days)
- 4 day [P4-20%] ☐
- 3 day [P3-25%] ☐
- 2 day [P2-50%] ☐

EMERGENCY
- 1 Business day [E - 100%] ☒
- Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	Lead	Arsenic	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
1	EX7-21-23	26-Jul-21		Soil	3	X				
2	EX7-21-24	"		"	3	X				

L2620188-COFC

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Are samples taken from a Regulated DW System? ☐ YES ☐ NO	Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427
Are samples for human consumption/ use? ☐ YES ☐ NO	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐		SIF Observations	Yes ☐	No ☐	
Ice Packs ☐	Ice Cubes ☐	Custody seal intact	Yes ☐	No ☐	
Cooling Initiated ☐					

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
11.2							

SHIPMENT RELEASE (client use)		
Released by: Rebecca Byrne	Date: July 23/21	Time: 9:00

INITIAL SHIPMENT RECEPTION (lab use only)		
Received by: MF	Date: 26-Jul-21	Time: 8:00

FINAL SHIPMENT RECEPTION (lab use only)		
Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

Failure to complete ... ns of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agre... he Terms and Conditions as specified on the back page of the white - report copy.

1. If any water sam... taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form

GOLDER ASSOCIATES LTD
ATTN: Steven Fiddler
16820 107 Ave NW
Edmonton AB T5P 4C3

Date Received: 28-JUL-21
Report Date: 02-AUG-21 17:20 (MT)
Version: FINAL

Client Phone: 780-483-3499

Certificate of Analysis

Lab Work Order #: L2620196

Project P.O. #: NOT SUBMITTED
Job Reference: 20446521
C of C Numbers:
Legal Site Desc: LUPIN MINE

Harman Bhullar
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2620196-1 EX13-21-71							
Sampled By: CLIENT on 26-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	117.8		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	114.3		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	NO			ppm	31-JUL-21	01-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	01-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	82.4		70-130	%	31-JUL-21	01-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	112		25	mg/kg		02-AUG-21	
F3 (C16-C34)	1390		50	mg/kg		02-AUG-21	
F4 (C34-C50)	324		50	mg/kg		02-AUG-21	
F4G-SG (GHH-Silica)	1240		500	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	1830		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	106.1		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	9.29		0.25	%		01-AUG-21	R5538031
F4G Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538277
L2620196-2 EX13-21-72							
Sampled By: CLIENT on 26-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	0.0203		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	0.028		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	0.135		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	0.057		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	0.059		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	125.6		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	119.1		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	01-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	01-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	81.6		70-130	%	31-JUL-21	01-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		01-AUG-21	
F1-BTEX	<10		10	mg/kg		01-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		01-AUG-21	
F3 (C16-C34)	128		50	mg/kg		01-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		01-AUG-21	
Total Hydrocarbons (C6-C50)	128		50	mg/kg		01-AUG-21	
F1(C6-C10)							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2620196-2 EX13-21-72							
Sampled By: CLIENT on 26-JUL-21							
Matrix: Soil							
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	122.2		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	0.116		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	2.68		0.25	%		01-AUG-21	R5538031
L2620196-3 EX13-21-73							
Sampled By: CLIENT on 26-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	106.9		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	115.8		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	01-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	01-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	83.2		70-130	%	31-JUL-21	01-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		01-AUG-21	
F1-BTEX	<10		10	mg/kg		01-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		01-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		01-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		01-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		01-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	116.8		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	4.11		0.25	%		01-AUG-21	R5538031
L2620196-4 EX13-21-74							
Sampled By: CLIENT on 26-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	0.0084		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	0.020		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	115.6		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	114.7		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	01-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	01-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	87.3		70-130	%	31-JUL-21	01-AUG-21	R5538437
CCME Total Hydrocarbons							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2620196-4 EX13-21-74							
Sampled By: CLIENT on 26-JUL-21							
Matrix: Soil							
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		01-AUG-21	
F1-BTEX	<10		10	mg/kg		01-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		01-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		01-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		01-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		01-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	114.1		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	6.24		0.25	%		01-AUG-21	R5538031
L2620196-5 EX13-21-75							
Sampled By: CLIENT on 26-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	0.0057		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	112.0		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	123.5		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	01-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	01-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	78.6		70-130	%	31-JUL-21	01-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		01-AUG-21	
F1-BTEX	<10		10	mg/kg		01-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		01-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		01-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		01-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		01-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	105.7		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	8.67		0.25	%		01-AUG-21	R5538031

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BTXS-MEOH-HS-MS-CL	Soil	BTEX and Styrene	EPA 8260C/5021A

The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. Target compound concentrations are measured using mass spectrometry detection.

F1-4-CALC-CL	Soil	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-MEOH-HS-FID-CL	Soil	F1(C6-C10)	CWS PHC Tier 1

The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. The F1 fraction concentration is measured using flame ionization detection.

F2-4-TMB-H/A-FID-CL	Soil	CCME F2-4 Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

This analysis is carried out in accordance with the "Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method, Canadian Council of Ministers of the Environment, December 2001." For C10 to C50 hydrocarbons (F2, F3, F4) and gravimetric heavy hydrocarbons (F4G-sg), a subsample of the sediment/soil is extracted with 1:1 hexane:acetone using a rotary extractor. The extract undergoes a silica-gel clean-up to remove polar compounds. F2, F3 & F4 are analyzed by on-column GC/FID, and F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where F4 (C34-C50) and F4G-sg results are reported for a sample, the larger of the reported values is used for comparison against the relevant CCME standard for F4.
7. The gravimetric heavy hydrocarbon results (F4G-sg), cannot be added to the C6 to C50 hydrocarbon results.
8. This method is validated for use.
9. Data from analysis of quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram.

F4G-TMB-CL	Soil	CCME Gravimetric Heavy Hydrocarbons (SG)	CCME CWS-PHC, Pub #1310, Dec 2001

This analysis is carried out in accordance with the "Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method, Canadian Council of Ministers of the Environment, December 2001." For gravimetric heavy hydrocarbons (F4G-sg), a subsample of the sediment/soil is extracted with 1:1 hexane:acetone using a rotary extractor. The extract undergoes a silica-gel clean-up to remove polar compounds prior to gravimetric analysis.

Notes:
1. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
2. Where F4 (C34-C50) and F4G-sg results are reported for a sample, the larger of the reported values is used for comparison against the relevant CCME standard for F4.
3. The gravimetric heavy hydrocarbon (F4G-sg) result cannot be added to the C6 to C50 hydrocarbons results.
4. This method is validated for use.
5. Data from analysis of quality control samples is available upon request.
6. Reported results are expressed as milligrams per dry kilogram.

MOISTURE-CL	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
This analysis is carried out gravimetrically by drying the sample at 105 C			
XYLENES-SUM-CALC-CL	Soil	Sum of Xylene Isomer Concentrations	CALCULATED RESULT
Total xylenes represents the sum of o-xylene and m&p-xylene.			

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
CL	ALS ENVIRONMENTAL - CALGARY, ALBERTA, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Client: GOLDER ASSOCIATES LTD
16820 107 Ave NW
Edmonton AB T5P 4C3
Contact: Steven Fiddler

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTXS-MEOH-HS-MS-CL	**Soil**							
Batch R5538023								
WG3588235-2 LCS								
Benzene			86.6		%		70-130	31-JUL-21
Ethylbenzene			90.6		%		70-130	31-JUL-21
Toluene			96.5		%		70-130	31-JUL-21
o-Xylene			92.0		%		70-130	31-JUL-21
m+p-Xylene			83.8		%		70-130	31-JUL-21
WG3588235-1 MB								
Benzene			<0.0050		mg/kg		0.005	31-JUL-21
Ethylbenzene			<0.015		mg/kg		0.015	31-JUL-21
Toluene			<0.014		mg/kg		0.014	31-JUL-21
o-Xylene			<0.050		mg/kg		0.05	31-JUL-21
m+p-Xylene			<0.050		mg/kg		0.05	31-JUL-21
Surrogate: 1,4-Difluorobenzene			104.0		%		70-130	31-JUL-21
Surrogate: 4-Bromofluorobenzene			111.3		%		70-130	31-JUL-21
F1-MEOH-HS-FID-CL	**Soil**							
Batch R5538024								
WG3588235-2 LCS								
F1(C6-C10)			96.1		%		70-130	31-JUL-21
WG3588235-1 MB								
F1(C6-C10)			<10		mg/kg		10	31-JUL-21
Surrogate: 3,4-Dichlorotoluene			110.5		%		70-130	31-JUL-21
F2-4-TMB-H/A-FID-CL	**Soil**							
Batch R5538437								
WG3588231-3 IRM		**ALS PHC3 RM**						
F2: (C10-C16)			103.6		%		70-130	02-AUG-21
F3: (C16-C34)			106.7		%		70-130	02-AUG-21
F4: (C34-C50)			113.9		%		70-130	02-AUG-21
WG3588231-2 LCS								
F2: (C10-C16)			105.5		%		70-130	02-AUG-21
F3: (C16-C34)			113.3		%		70-130	02-AUG-21
F4: (C34-C50)			95.7		%		70-130	02-AUG-21
WG3588231-1 MB								
F2: (C10-C16)			<25		mg/kg		25	01-AUG-21
F3: (C16-C34)			<50		mg/kg		50	01-AUG-21
F4: (C34-C50)			<50		mg/kg		50	01-AUG-21
Surrogate: 2-Bromobenzotrifluoride			113.0		%		70-130	01-AUG-21

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F4G-TMB-CL	**Soil**							
Batch R5538277								
WG3588221-3 IRM		**ALS PHC3 RM**						
Gravimetric Heavy Hydrocarbons (Silica)			72.7		%		70-130	01-AUG-21
WG3588221-2 LCS								
Gravimetric Heavy Hydrocarbons (Silica)			94.6		%		70-130	01-AUG-21
WG3588221-1 MB								
Gravimetric Heavy Hydrocarbons (Silica)			<500		mg/kg		500	01-AUG-21
MOISTURE-CL	**Soil**							
Batch R5538031								
WG3588233-2 LCS								
Moisture			99.2		%		90-110	01-AUG-21
WG3588233-1 MB								
Moisture			<0.25		%		0.25	01-AUG-21

Quality Control Report

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

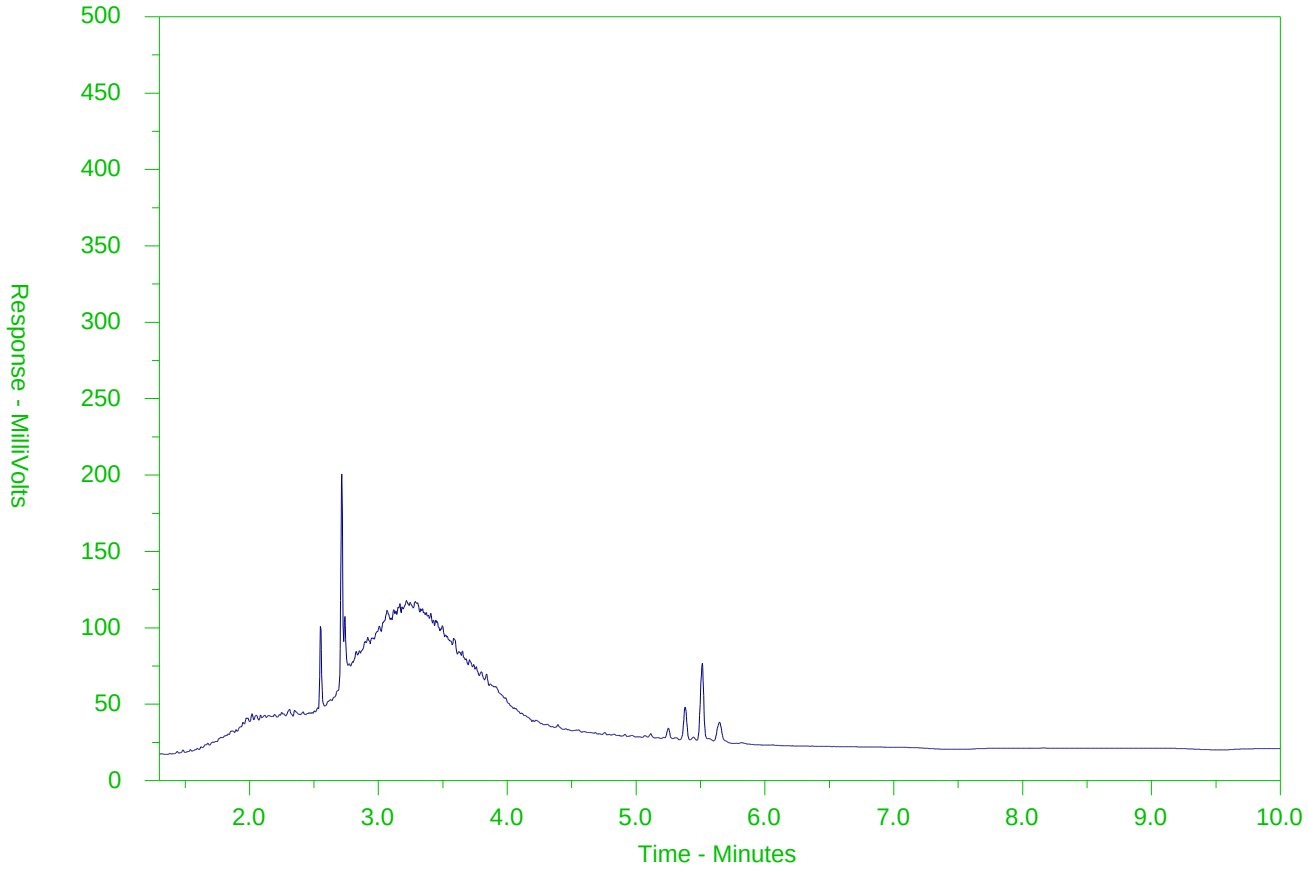
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2620196-1
Client Sample ID: EX13-21-71



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

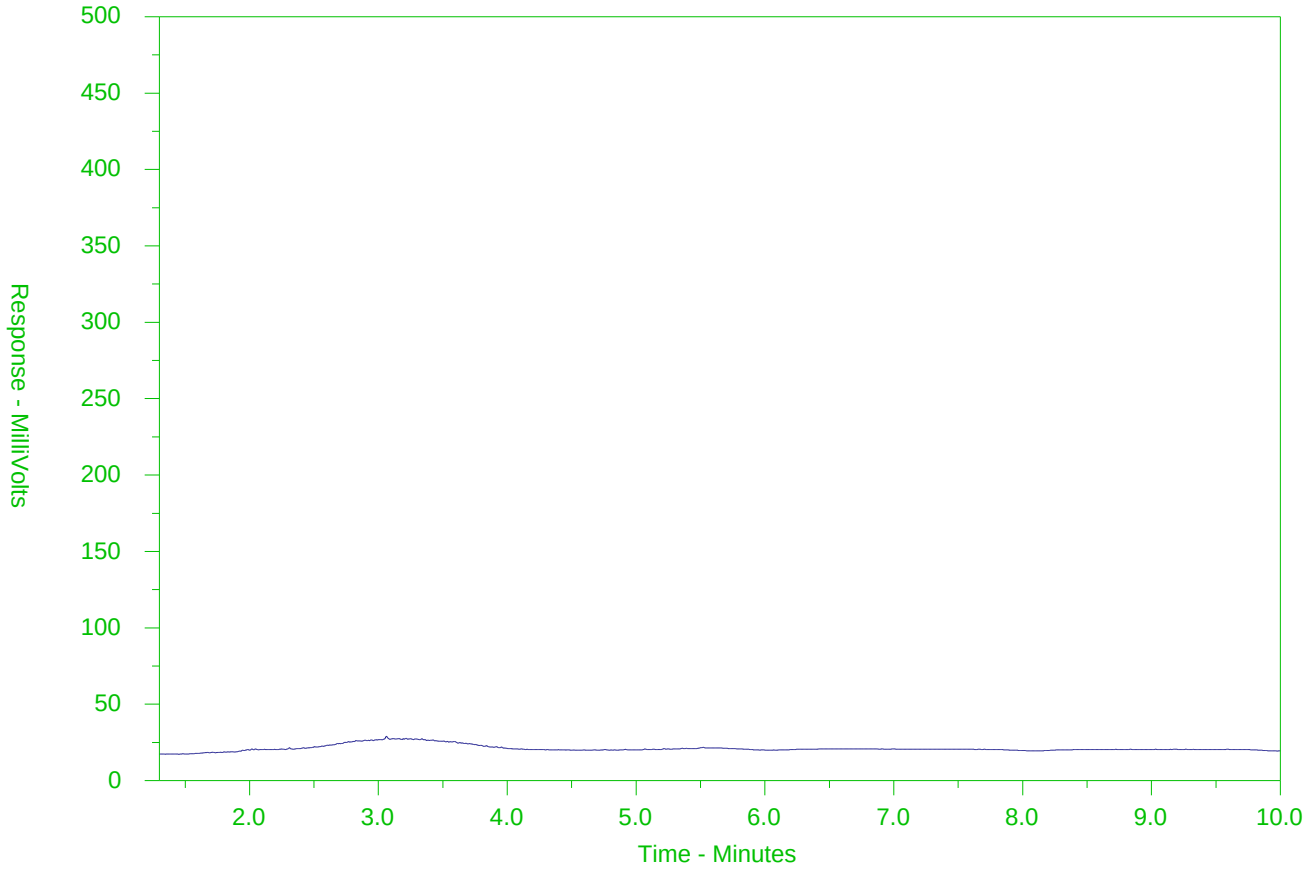
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2620196-2
Client Sample ID: EX13-21-72



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

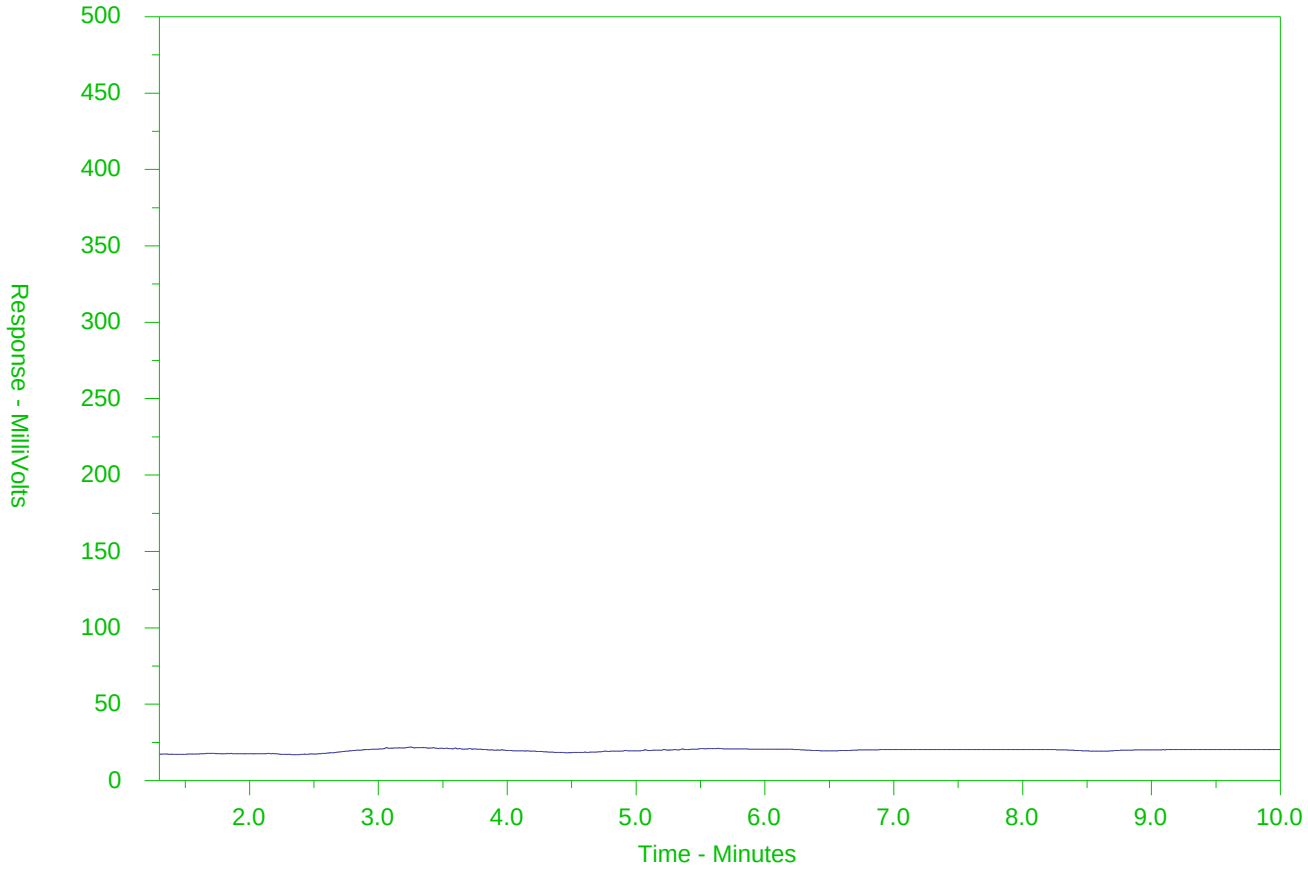
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2620196-3
Client Sample ID: EX13-21-73



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

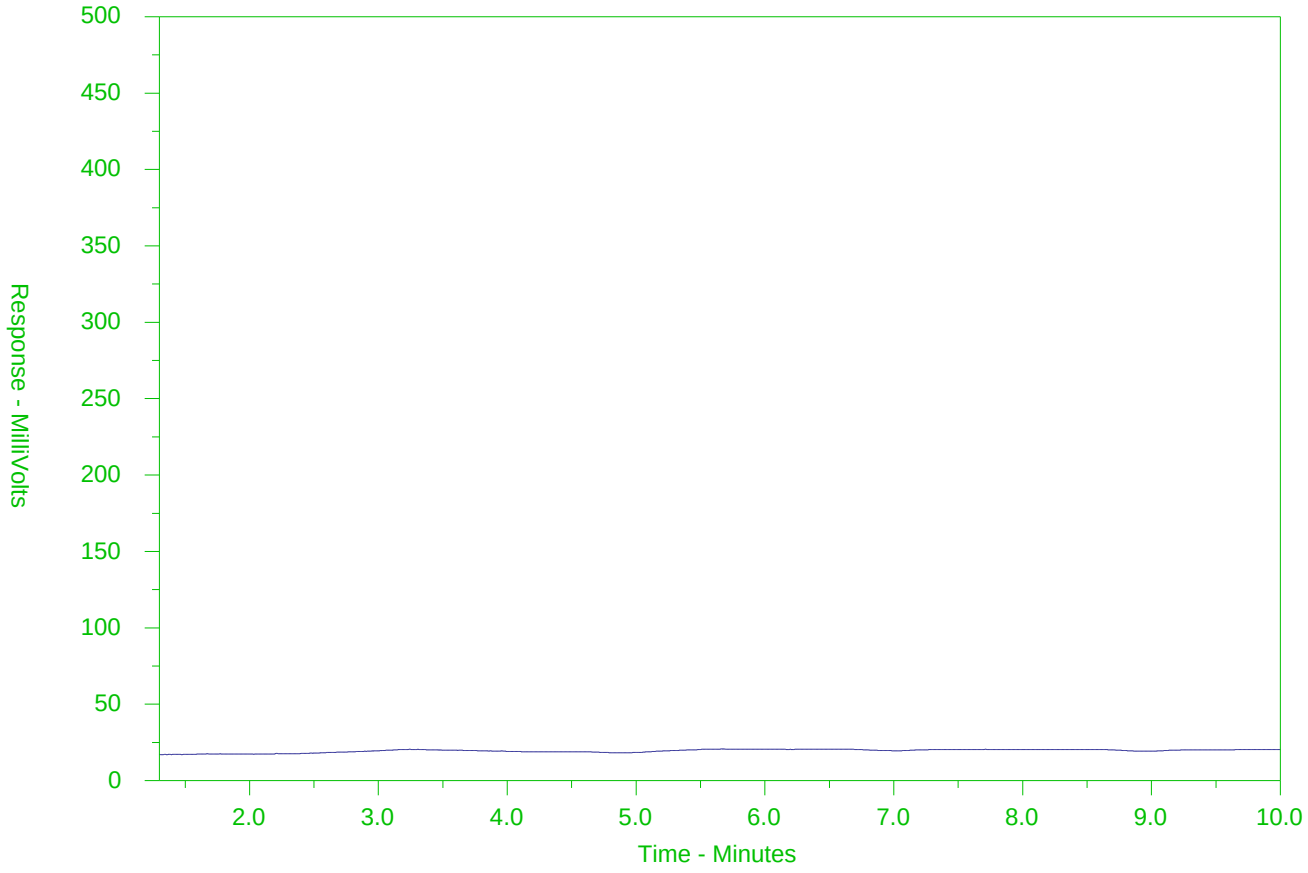
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2620196-4
Client Sample ID: EX13-21-74



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

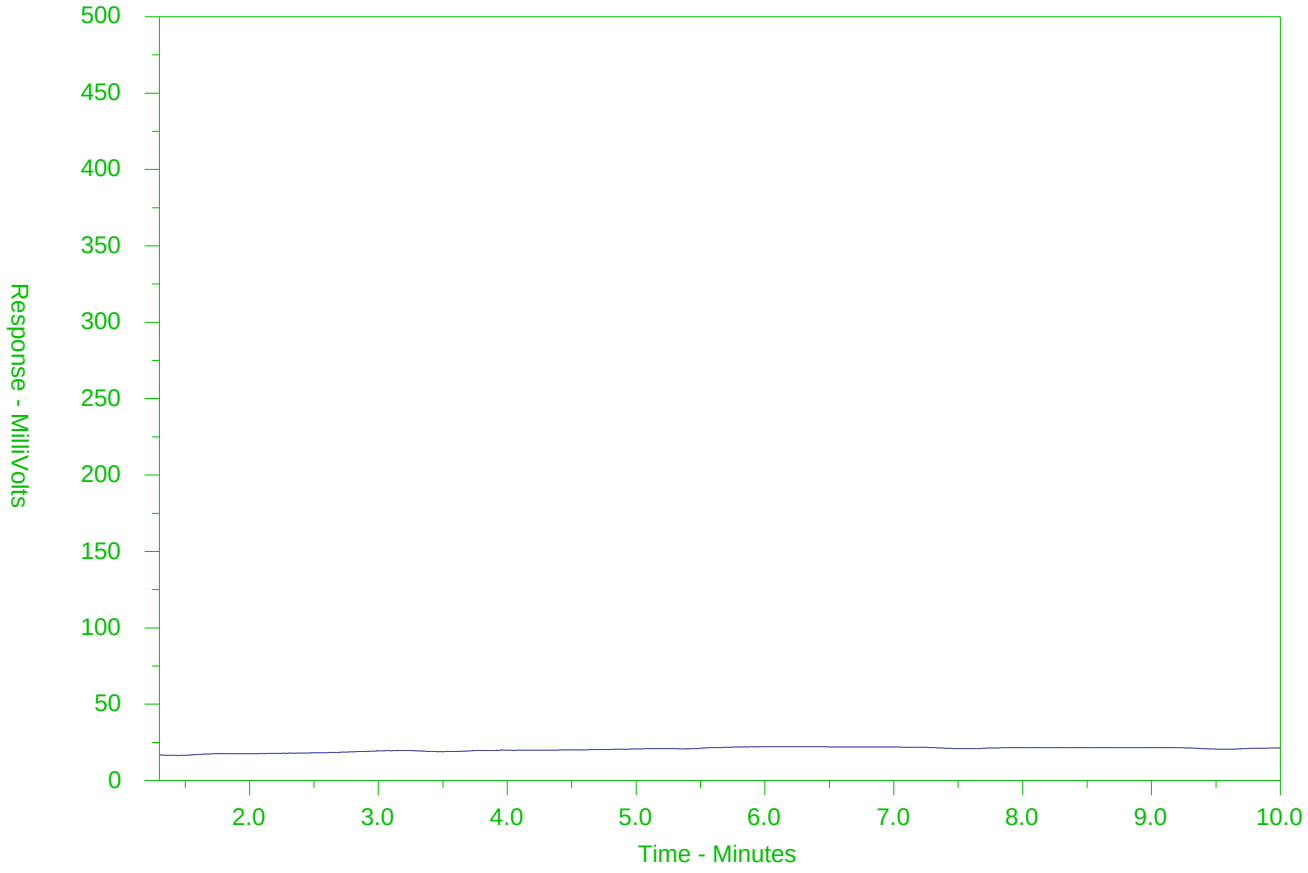
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2620196-5
Client Sample ID: EX13-21-75



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number:

Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution	
Select Report Format:	☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report	☑ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	k.lewis@mandalayresources.com
Email 2	sfiddler@golder.com
Email 3	jmusijowski@golder.com

Invoice Distribution	
Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	
Email 2	

Project Information	
ALS Account # / Quote #:	Q80711
Job #:	20146521
PO / AFE:	
LSD:	Lupin Mine

Oil and Gas Required Fields (client use)	
AFE/Cost Center	PO#
Major/Minor Code	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (lab use only): L2620196

ALS Contact: Oliver Gregg

Sampler:

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☐ | Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	Lead	Arsenic	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
1	EX13-21-71	25-Jul-21		Soil	3	X				
2	EX13-21-72	"		"	1	X				
3	EX13-21-73	"		"	1	X				
4	EX13-21-74	"		"	1	X				
5	EX13-21-75	"		"	1	X				

L2620196-COFC

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Are samples taken from a Regulated DW System? ☐ YES ☐ NO	Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427
Are samples for human consumption/ use? ☐ YES ☐ NO	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ | SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ | Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
11.7							

SHIPMENT RELEASE (client use)		
Released by: Rebecca Bradley	Date: July 29/21	Time: 8:00

INITIAL SHIPMENT RECEPTION (lab use only)		
Received by: MR	Date: 29-Jul-21	Time: 1560

FINAL SHIPMENT RECEPTION (lab use only)		
Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1 If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

GOLDER ASSOCIATES LTD
ATTN: Steven Fiddler
16820 107 Ave NW
Edmonton AB T5P 4C3

Date Received: 28-JUL-21
Report Date: 02-AUG-21 13:21 (MT)
Version: FINAL

Client Phone: 780-483-3499

Certificate of Analysis

Lab Work Order #: L2620199

Project P.O. #: NOT SUBMITTED
Job Reference: 20446521
C of C Numbers:
Legal Site Desc: LUPIN MINE

Harman Bhullar
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2620199-1 EX9-21-30							
Sampled By: CLIENT on 22-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	98.2		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	93.4		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	88.4		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		02-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	108.2		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	7.38		0.25	%		01-AUG-21	R5538035
L2620199-2 EX9-21-31							
Sampled By: CLIENT on 22-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	97.0		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	93.5		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	93.2		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		02-AUG-21	
F3 (C16-C34)	105		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	105		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	99.5		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2620199-2 EX9-21-31							
Sampled By: CLIENT on 22-JUL-21							
Matrix: Soil							
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	5.03		0.25	%		01-AUG-21	R5538035
L2620199-3 EX9-21-33							
Sampled By: CLIENT on 22-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	102.6		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	96.3		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	99.2		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		02-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		02-AUG-21	
F4 (C34-C50)	56		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	56		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	112.5		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	6.30		0.25	%		01-AUG-21	R5538035
L2620199-4 EX9-21-34							
Sampled By: CLIENT on 22-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0086	DLIS	0.0086	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.026	DLIS	0.026	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.024	DLIS	0.024	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.086	DLIS	0.086	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.086	DLIS	0.086	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	124.2		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	121.7		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	91.3		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<17	DLIS	17	mg/kg		02-AUG-21	
F1-BTEX	<17		17	mg/kg		02-AUG-21	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2620199-4 EX9-21-34							
Sampled By: CLIENT on 22-JUL-21							
Matrix: Soil							
CCME Total Hydrocarbons							
F2 (C10-C16)	<25		25	mg/kg		02-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	123.6		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.12		0.12	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	9.92		0.25	%		01-AUG-21	R5538035
L2620199-5 EX9-21-42							
Sampled By: CLIENT on 22-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	114.7		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	100.7		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	93.1		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		02-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	109.9		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	5.01		0.25	%		01-AUG-21	R5538035
L2620199-6 EX9-21-43							
Sampled By: CLIENT on 22-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	100.2		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	95.0		70-130	%	31-JUL-21	31-JUL-21	R5538023

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2620199-6 EX9-21-43							
Sampled By: CLIENT on 22-JUL-21							
Matrix: Soil							
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	118.6		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	150		25	mg/kg		02-AUG-21	
F3 (C16-C34)	224		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	374		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	106.1		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	2.83		0.25	%		01-AUG-21	R5538035
L2620199-7 EX9-21-48							
Sampled By: CLIENT on 22-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	97.7		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	97.1		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	89.4		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	405		25	mg/kg		02-AUG-21	
F3 (C16-C34)	291		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	696		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	108.3		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	6.99		0.25	%		01-AUG-21	R5538035
L2620199-8 EX9-21-53							
Sampled By: CLIENT on 22-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2620199-8 EX9-21-53							
Sampled By: CLIENT on 22-JUL-21							
Matrix: Soil							
BTEX and Styrene							
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	96.4		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	88.4		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	89.6		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	91		25	mg/kg		02-AUG-21	
F3 (C16-C34)	101		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	192		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	101.9		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	3.61		0.25	%		01-AUG-21	R5538035
L2620199-9 EX9-21-56							
Sampled By: CLIENT on 22-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	122.0		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	116.8		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	83.3		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	40		25	mg/kg		02-AUG-21	
F3 (C16-C34)	132		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	172		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	120.9		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2620199-9 EX9-21-56							
Sampled By: CLIENT on 22-JUL-21							
Matrix: Soil							
Moisture	2.83		0.25	%		01-AUG-21	R5538035
L2620199-10 EX9-21-61							
Sampled By: CLIENT on 22-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	92.0		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	88.1		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	90.5		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	82		25	mg/kg		02-AUG-21	
F3 (C16-C34)	258		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	340		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	99.6		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	2.81		0.25	%		01-AUG-21	R5538035
L2620199-11 EX9-21-63							
Sampled By: CLIENT on 22-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	115.3		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	111.7		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	88.8		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		02-AUG-21	
F3 (C16-C34)	65		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2620199-11 EX9-21-63							
Sampled By: CLIENT on 22-JUL-21							
Matrix: Soil							
CCME Total Hydrocarbons							
Total Hydrocarbons (C6-C50)	65		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	110.8		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	6.67		0.25	%		01-AUG-21	R5538035
L2620199-12 EX9-21-72							
Sampled By: CLIENT on 22-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	0.094		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	0.016		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	0.273		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	0.120		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	111.9		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	101.6		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	110.2		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		02-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	75.1		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	0.393		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	10.7		0.25	%		01-AUG-21	R5538035
L2620199-13 EX9-21-77							
Sampled By: CLIENT on 22-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	109.1		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	105.5		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2620199-13 EX9-21-77							
Sampled By: CLIENT on 22-JUL-21							
Matrix: Soil							
CCME F2-4 Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	98.7		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	28		10	mg/kg		02-AUG-21	
F1-BTEX	28		10	mg/kg		02-AUG-21	
F2 (C10-C16)	554		25	mg/kg		02-AUG-21	
F3 (C16-C34)	546		50	mg/kg		02-AUG-21	
F4 (C34-C50)	75		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	1200		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	77.4		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	3.77		0.25	%		01-AUG-21	R5538035
L2620199-14 EX9-21-81							
Sampled By: CLIENT on 22-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	104.5		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	107.5		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	85.1		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	33		25	mg/kg		02-AUG-21	
F3 (C16-C34)	134		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	167		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	106.4		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	9.93		0.25	%		01-AUG-21	R5538035
L2620199-15 EX9-21-88							
Sampled By: CLIENT on 22-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2620199-15 EX9-21-88							
Sampled By: CLIENT on 22-JUL-21							
Matrix: Soil							
BTEX and Styrene							
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	114.0		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	104.4		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	95		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		02-AUG-21	
F3 (C16-C34)	88		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	88		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	81.6		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	9.76		0.25	%		01-AUG-21	R5538035
L2620199-16 EX9-21-91							
Sampled By: CLIENT on 22-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	117.4		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	115.2		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	113.7		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		02-AUG-21	
F3 (C16-C34)	52		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	52		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	116.0		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	3.10		0.25	%		01-AUG-21	R5538035

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2620199-17 EX9-21-81D							
Sampled By: CLIENT on 22-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	93.4		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	96.9		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	79.6		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		02-AUG-21	
F3 (C16-C34)	114		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	114		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	98.8		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	5.37		0.25	%		01-AUG-21	R5538035
L2620199-18 EX9-21-63D							
Sampled By: CLIENT on 22-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	104.3		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	101.3		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	78.9		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	77		25	mg/kg		02-AUG-21	
F3 (C16-C34)	185		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	262		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	114.5		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2620199-18 EX9-21-63D							
Sampled By: CLIENT on 22-JUL-21							
Matrix: Soil							
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	8.18		0.25	%		01-AUG-21	R5538035
L2620199-19 EX9-21-95							
Sampled By: CLIENT on 23-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	124.2		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	116.8		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	82.1		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		02-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	105.3		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	9.70		0.25	%		01-AUG-21	R5538035
L2620199-20 EX9-21-100							
Sampled By: CLIENT on 23-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	98.0		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	93.7		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	107.5		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2620199-20 EX9-21-100							
Sampled By: CLIENT on 23-JUL-21							
Matrix: Soil							
CCME Total Hydrocarbons							
F2 (C10-C16)	128		25	mg/kg		02-AUG-21	
F3 (C16-C34)	124		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	252		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	83.4		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	7.13		0.25	%		01-AUG-21	R5538035
L2620199-21 EX9-21-104							
Sampled By: CLIENT on 23-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	91.7		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	100.4		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	88.3		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	76		25	mg/kg		02-AUG-21	
F3 (C16-C34)	80		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	156		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	97.0		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	3.72		0.25	%		01-AUG-21	R5538031
L2620199-22 EX9-21-10							
Sampled By: CLIENT on 27-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	97.9		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	103.4		70-130	%	31-JUL-21	31-JUL-21	R5538023

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2620199-22 EX9-21-10							
Sampled By: CLIENT on 27-JUL-21							
Matrix: Soil							
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	84.2		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		02-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	107.6		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	8.33		0.25	%		01-AUG-21	R5538031
L2620199-23 EX9-21-10D							
Sampled By: CLIENT on 27-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	94.3		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	100.9		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	84.2		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		02-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	104.6		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	8.07		0.25	%		01-AUG-21	R5538031
L2620199-24 EX9-21-58							
Sampled By: CLIENT on 27-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2620199-24 EX9-21-58							
Sampled By: CLIENT on 27-JUL-21							
Matrix: Soil							
BTEX and Styrene							
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	122.7		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	108.7		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	108.1		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		02-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	117.4		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	7.71		0.25	%		01-AUG-21	R5538031
L2620199-25 EX9-21-86							
Sampled By: CLIENT on 27-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	87.0		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	94.7		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	108.3		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		02-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	70.2		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2620199-25 EX9-21-86							
Sampled By: CLIENT on 27-JUL-21							
Matrix: Soil							
Moisture	8.24		0.25	%		01-AUG-21	R5538031
L2620199-26 EX9-21-108							
Sampled By: CLIENT on 27-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	116.4		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	116.4		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	106.7		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		02-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	106.0		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	7.51		0.25	%		01-AUG-21	R5538031
L2620199-27 EX9-21-109							
Sampled By: CLIENT on 27-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	124.3		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	124.2		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	112.4		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		02-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2620199-27 EX9-21-109							
Sampled By: CLIENT on 27-JUL-21							
Matrix: Soil							
CCME Total Hydrocarbons							
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	95.1		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	8.64		0.25	%		01-AUG-21	R5538031
L2620199-28 EX9-21-110							
Sampled By: CLIENT on 27-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	101.0		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	109.1		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	115.2		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		02-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	94.5		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	9.15		0.25	%		01-AUG-21	R5538031
L2620199-29 EX9-21-111							
Sampled By: CLIENT on 27-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	122.2		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	122.0		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2620199-29 EX9-21-111							
Sampled By: CLIENT on 27-JUL-21							
Matrix: Soil							
CCME F2-4 Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	110.8		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		02-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	103.2		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	8.17		0.25	%		01-AUG-21	R5538031
L2620199-30 EX9-21-112							
Sampled By: CLIENT on 27-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	0.0143		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	112.4		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	116.5		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	113.7		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		02-AUG-21	
F3 (C16-C34)	61		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	61		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	105.9		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	9.42		0.25	%		01-AUG-21	R5538031
L2620199-31 EX9-21-118							
Sampled By: CLIENT on 27-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	0.0172		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	0.018		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	0.056		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2620199-31 EX9-21-118							
Sampled By: CLIENT on 27-JUL-21							
Matrix: Soil							
BTEX and Styrene							
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	0.094		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	111.4		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	123.0		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	89.3		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		02-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	115.3		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	0.094		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	7.89		0.25	%		01-AUG-21	R5538031

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Qualifiers for Individual Samples Listed:

Lab Sample ID	Client Sample ID	Qualifier	Description
L2620199-15	EX9-21-88	VOCJ	Methanol leaked from both vials. - Soil jar was submitted as VOC sample container. VOC results may be biased low, and do not meet federal (CCME) or provincial requirements (for BC, AB-Tier1, MB, ON, SK).

Sample Parameter Qualifier Key:

Qualifier	Description
DLIS	Detection Limit Adjusted: Insufficient Sample

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BTXS-MEOH-HS-MS-CL	Soil	BTEX and Styrene	EPA 8260C/5021A

The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. Target compound concentrations are measured using mass spectrometry detection.

F1-4-CALC-CL	Soil	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-MEOH-HS-FID-CL	Soil	F1(C6-C10)	CWS PHC Tier 1

The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. The F1 fraction concentration is measured using flame ionization detection.

F2-4-TMB-H/A-FID-CL	Soil	CCME F2-4 Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

This analysis is carried out in accordance with the "Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method, Canadian Council of Ministers of the Environment, December 2001." For C10 to C50 hydrocarbons (F2, F3, F4) and gravimetric heavy hydrocarbons (F4G-sg), a subsample of the sediment/soil is extracted with 1:1 hexane:acetone using a rotary extractor. The extract undergoes a silica-gel clean-up to remove polar compounds. F2, F3 & F4 are analyzed by on-column GC/FID, and F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where F4 (C34-C50) and F4G-sg results are reported for a sample, the larger of the reported values is used for comparison against the relevant CCME standard for F4.
7. The gravimetric heavy hydrocarbon results (F4G-sg), cannot be added to the C6 to C50 hydrocarbon results.
8. This method is validated for use.
9. Data from analysis of quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram.

MOISTURE-CL	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)

This analysis is carried out gravimetrically by drying the sample at 105 C

XYLENES-SUM-CALC-CL	Soil	Sum of Xylene Isomer Concentrations	CALCULATED RESULT

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

Total xylenes represents the sum of o-xylene and m&p-xylene.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
CL	ALS ENVIRONMENTAL - CALGARY, ALBERTA, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Client: GOLDER ASSOCIATES LTD
16820 107 Ave NW
Edmonton AB T5P 4C3
Contact: Steven Fiddler

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTXS-MEOH-HS-MS-CL	**Soil**							
Batch R5538023								
WG3588238-3 DUP		**L2620199-1**						
Benzene		<0.0050	<0.0050	RPD-NA	mg/kg	N/A	30	31-JUL-21
Ethylbenzene		<0.015	<0.015	RPD-NA	mg/kg	N/A	30	31-JUL-21
Toluene		<0.014	<0.014	RPD-NA	mg/kg	N/A	30	31-JUL-21
o-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	31-JUL-21
m+p-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	31-JUL-21
WG3588235-2 LCS								
Benzene			86.6		%		70-130	31-JUL-21
Ethylbenzene			90.6		%		70-130	31-JUL-21
Toluene			96.5		%		70-130	31-JUL-21
o-Xylene			92.0		%		70-130	31-JUL-21
m+p-Xylene			83.8		%		70-130	31-JUL-21
WG3588238-2 LCS								
Benzene			83.9		%		70-130	31-JUL-21
Ethylbenzene			88.0		%		70-130	31-JUL-21
Toluene			82.2		%		70-130	31-JUL-21
o-Xylene			88.1		%		70-130	31-JUL-21
m+p-Xylene			89.9		%		70-130	31-JUL-21
WG3588235-1 MB								
Benzene			<0.0050		mg/kg		0.005	31-JUL-21
Ethylbenzene			<0.015		mg/kg		0.015	31-JUL-21
Toluene			<0.014		mg/kg		0.014	31-JUL-21
o-Xylene			<0.050		mg/kg		0.05	31-JUL-21
m+p-Xylene			<0.050		mg/kg		0.05	31-JUL-21
Surrogate: 1,4-Difluorobenzene			104.0		%		70-130	31-JUL-21
Surrogate: 4-Bromofluorobenzene			111.3		%		70-130	31-JUL-21
WG3588238-1 MB								
Benzene			<0.0050		mg/kg		0.005	31-JUL-21
Ethylbenzene			<0.015		mg/kg		0.015	31-JUL-21
Toluene			<0.014		mg/kg		0.014	31-JUL-21
o-Xylene			<0.050		mg/kg		0.05	31-JUL-21
m+p-Xylene			<0.050		mg/kg		0.05	31-JUL-21
Surrogate: 1,4-Difluorobenzene			100.2		%		70-130	31-JUL-21
Surrogate: 4-Bromofluorobenzene			97.2		%		70-130	31-JUL-21
F1-MEOH-HS-FID-CL	**Soil**							

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-MEOH-HS-FID-CL	**Soil**							
Batch R5538024								
WG3588238-3 DUP		**L2620199-1**						
F1(C6-C10)		<10	<10	RPD-NA	mg/kg	N/A	30	31-JUL-21
WG3588235-2 LCS								
F1(C6-C10)			96.1		%		70-130	31-JUL-21
WG3588238-2 LCS								
F1(C6-C10)			100.7		%		70-130	31-JUL-21
WG3588235-1 MB								
F1(C6-C10)			<10		mg/kg		10	31-JUL-21
Surrogate: 3,4-Dichlorotoluene			110.5		%		70-130	31-JUL-21
WG3588238-1 MB								
F1(C6-C10)			<10		mg/kg		10	31-JUL-21
Surrogate: 3,4-Dichlorotoluene			104.5		%		70-130	31-JUL-21
F2-4-TMB-H/A-FID-CL	**Soil**							
Batch R5538437								
WG3588227-4 DUP		**L2620199-1**						
F2: (C10-C16)		<25	<25	RPD-NA	mg/kg	N/A	40	02-AUG-21
F3: (C16-C34)		<50	<50	RPD-NA	mg/kg	N/A	40	02-AUG-21
F4: (C34-C50)		<50	<50	RPD-NA	mg/kg	N/A	40	02-AUG-21
WG3588231-3 IRM		**ALS PHC3 RM**						
F2: (C10-C16)			103.6		%		70-130	02-AUG-21
F3: (C16-C34)			106.7		%		70-130	02-AUG-21
F4: (C34-C50)			113.9		%		70-130	02-AUG-21
WG3588227-2 LCS								
F2: (C10-C16)			103.1		%		70-130	02-AUG-21
F3: (C16-C34)			111.5		%		70-130	02-AUG-21
F4: (C34-C50)			94.2		%		70-130	02-AUG-21
WG3588231-2 LCS								
F2: (C10-C16)			105.5		%		70-130	02-AUG-21
F3: (C16-C34)			113.3		%		70-130	02-AUG-21
F4: (C34-C50)			95.7		%		70-130	02-AUG-21
WG3588227-1 MB								
F2: (C10-C16)			<25		mg/kg		25	02-AUG-21
F3: (C16-C34)			<50		mg/kg		50	02-AUG-21
F4: (C34-C50)			<50		mg/kg		50	02-AUG-21
Surrogate: 2-Bromobenzotrifluoride			129.0		%		70-130	02-AUG-21
WG3588231-1 MB								
F2: (C10-C16)			<25		mg/kg		25	01-AUG-21

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-4-TMB-H/A-FID-CL	**Soil**							
Batch R5538437								
WG3588231-1 MB								
F3: (C16-C34)			<50		mg/kg		50	01-AUG-21
F4: (C34-C50)			<50		mg/kg		50	01-AUG-21
Surrogate: 2-Bromobenzotrifluoride			113.0		%		70-130	01-AUG-21
MOISTURE-CL	**Soil**							
Batch R5538031								
WG3588233-2 LCS								
Moisture			99.2		%		90-110	01-AUG-21
WG3588233-1 MB								
Moisture			<0.25		%		0.25	01-AUG-21
Batch R5538035								
WG3588230-3 DUP		**L2620199-1**						
Moisture		7.38	6.20		%	17	20	01-AUG-21
WG3588230-2 LCS								
Moisture			97.9		%		90-110	01-AUG-21
WG3588230-1 MB								
Moisture			<0.25		%		0.25	01-AUG-21

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

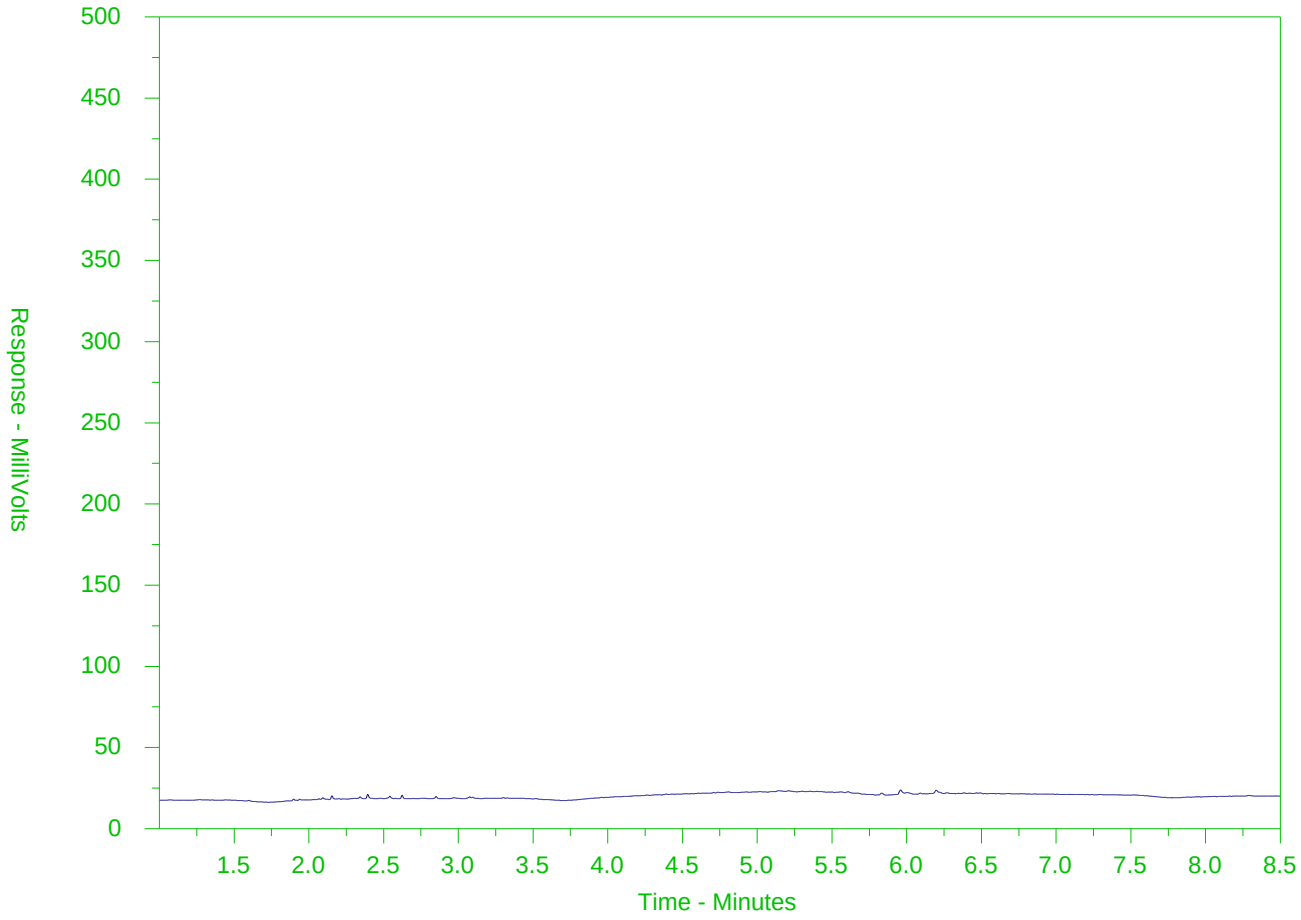
All test results reported with this submission were conducted within ALS recommended hold times.

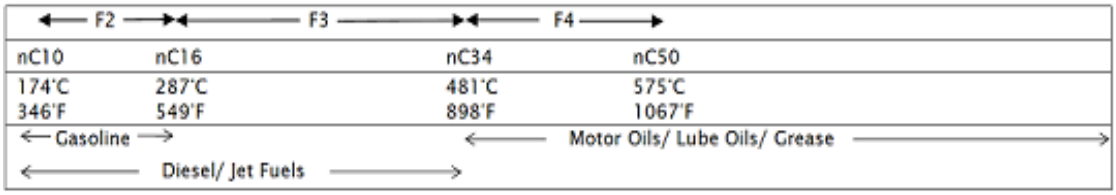
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

ALS Sample ID: L2620199-1
Client Sample ID: EX9-21-30





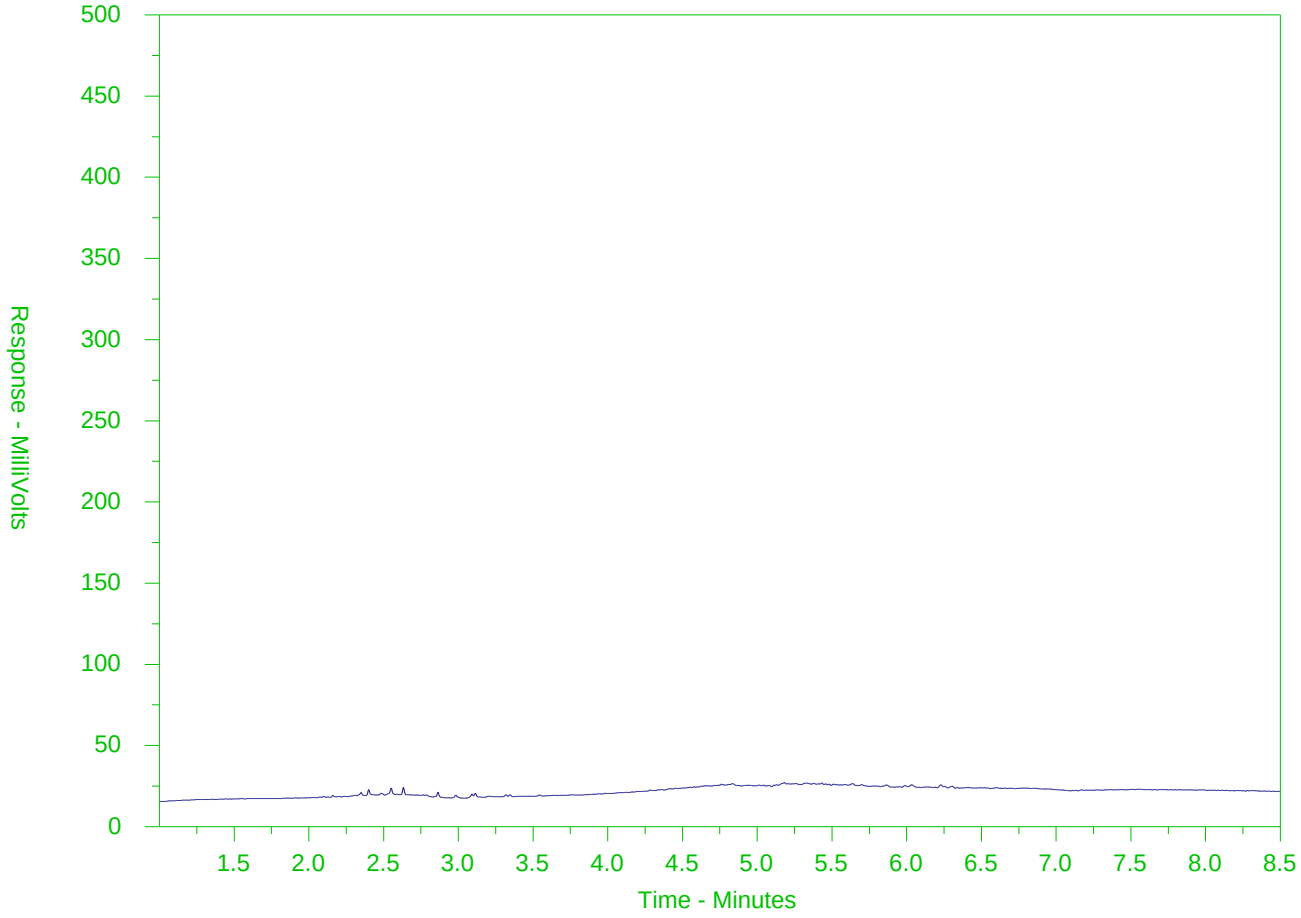
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

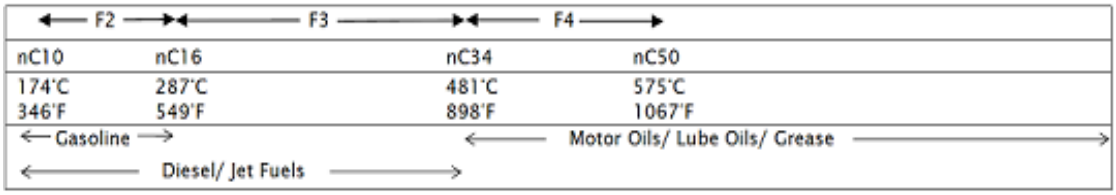
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2620199-2
Client Sample ID: EX9-21-31





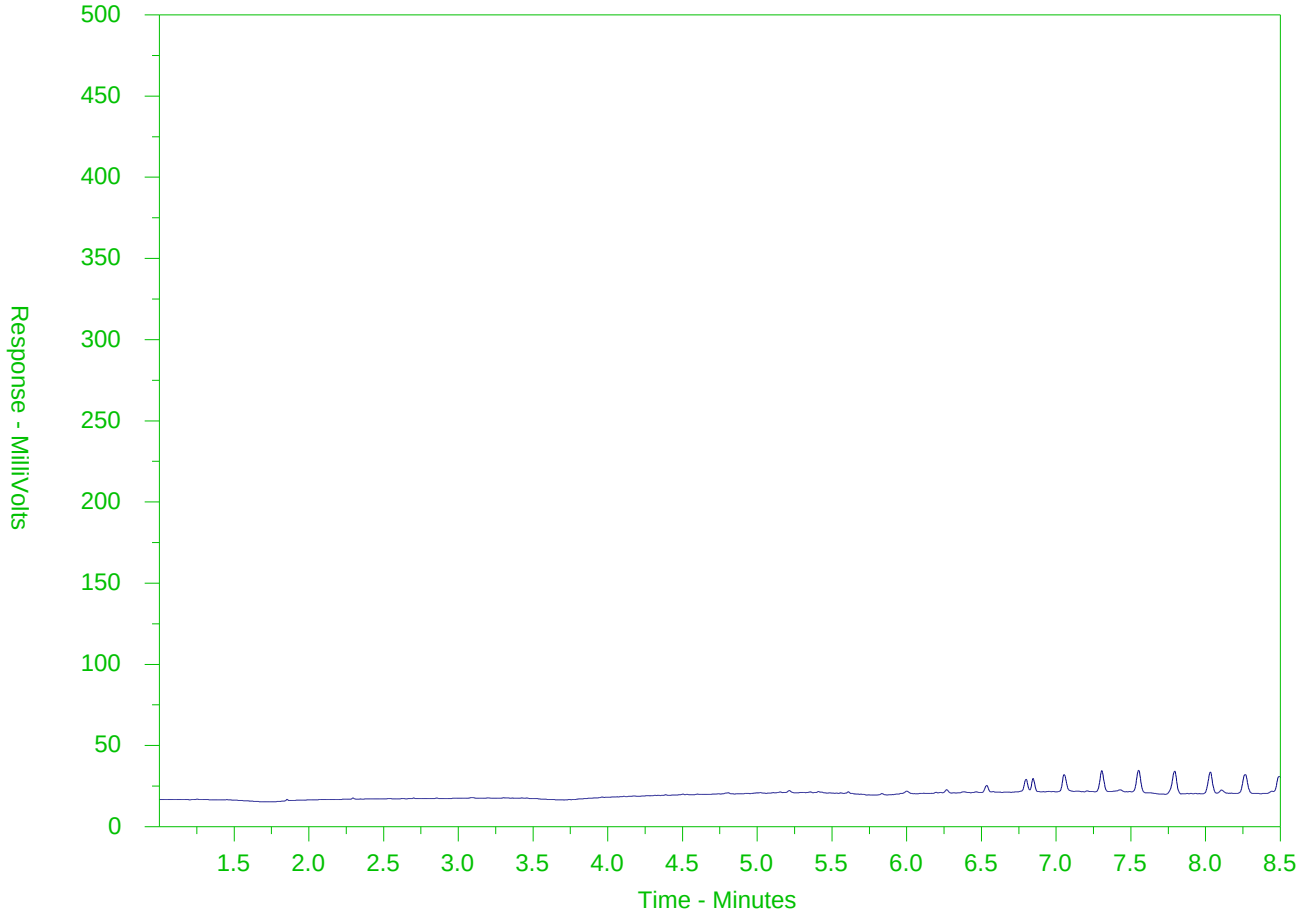
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

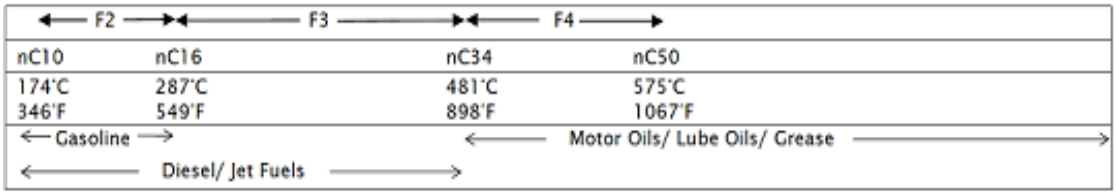
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2620199-3
Client Sample ID: EX9-21-33





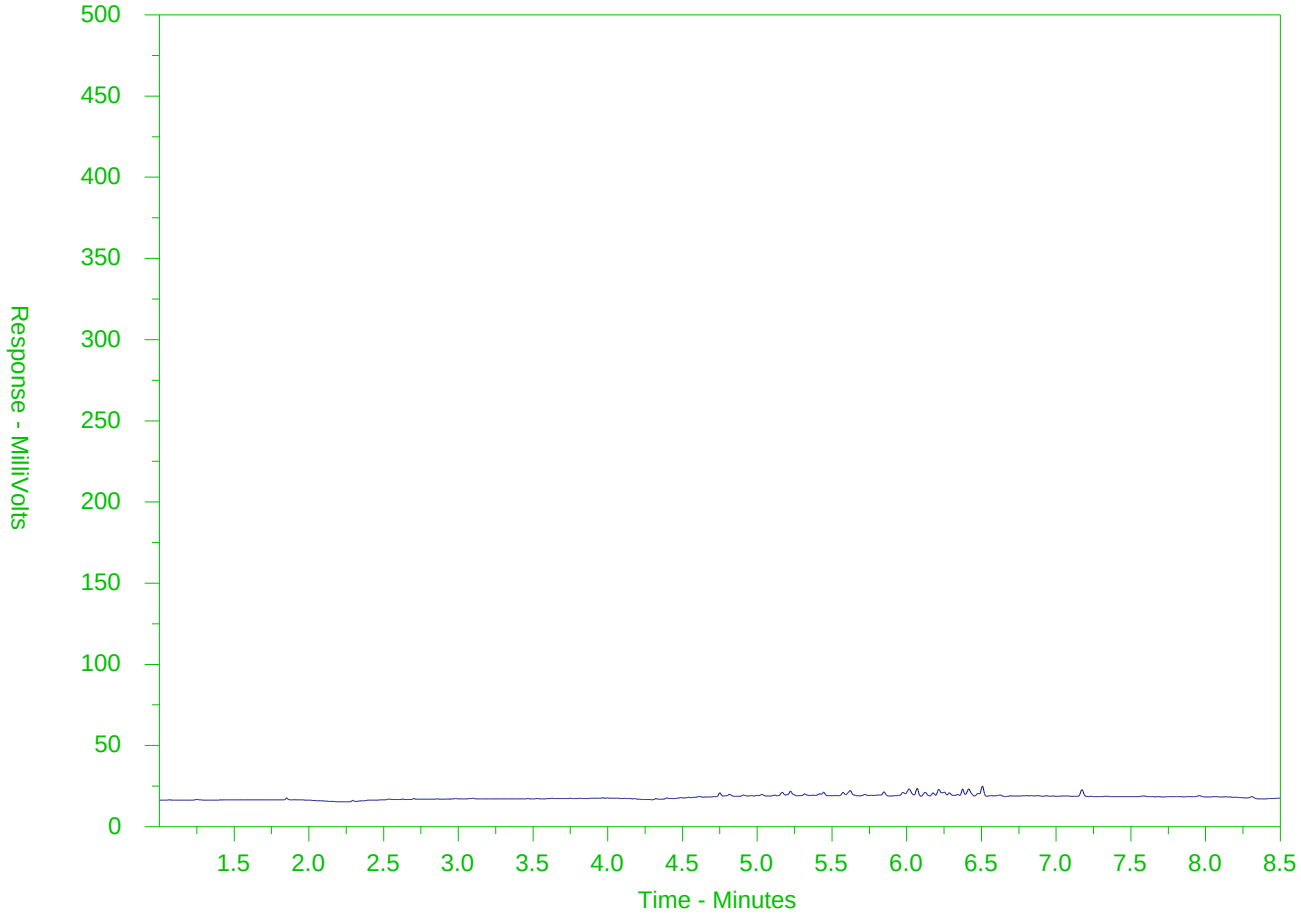
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

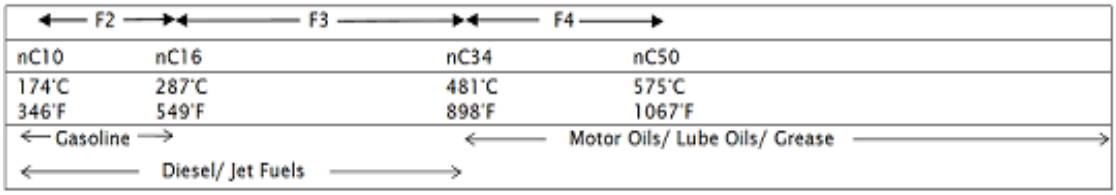
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2620199-4
Client Sample ID: EX9-21-34





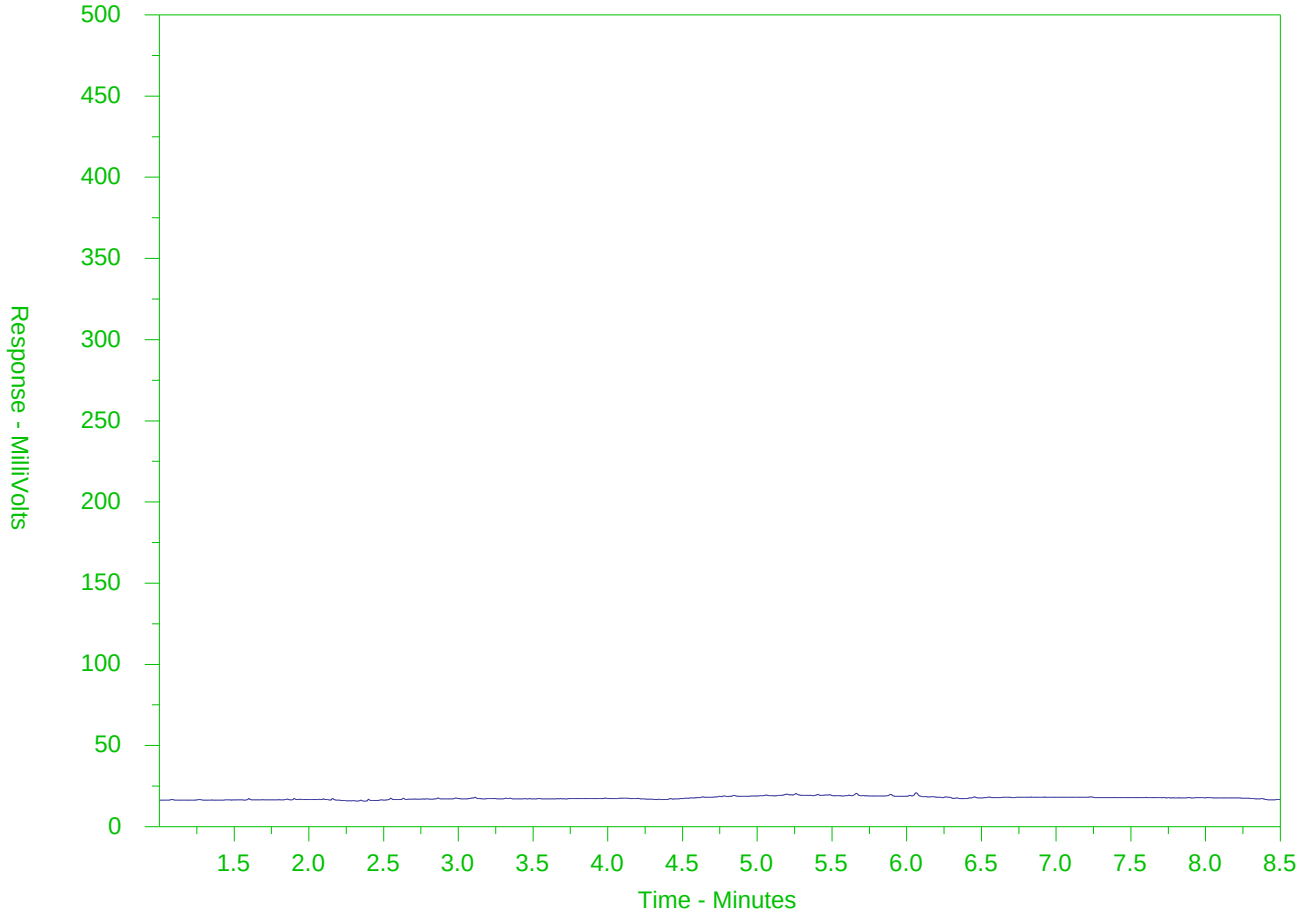
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

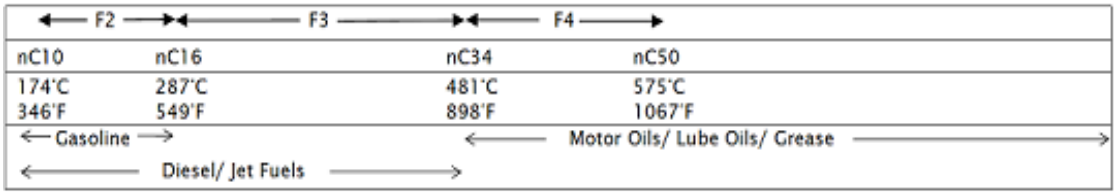
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2620199-5
Client Sample ID: EX9-21-42





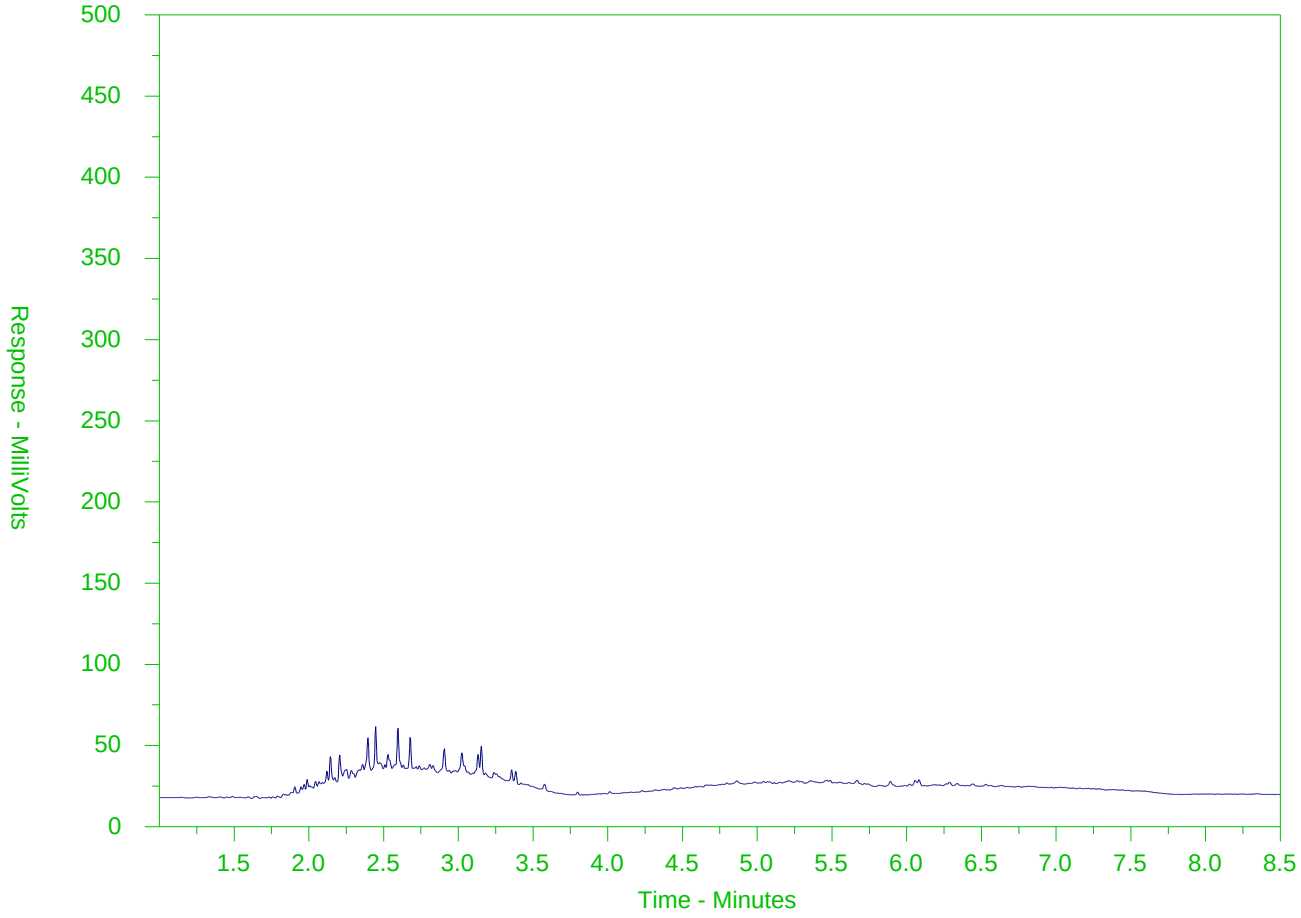
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

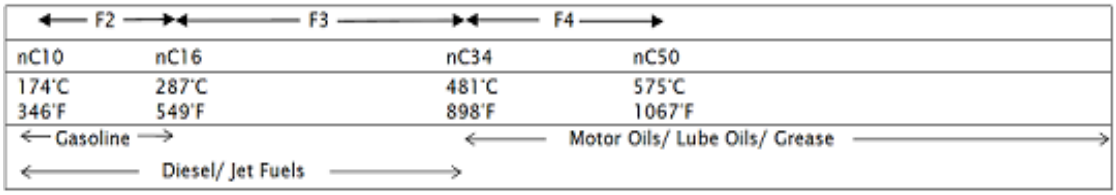
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2620199-6
Client Sample ID: EX9-21-43





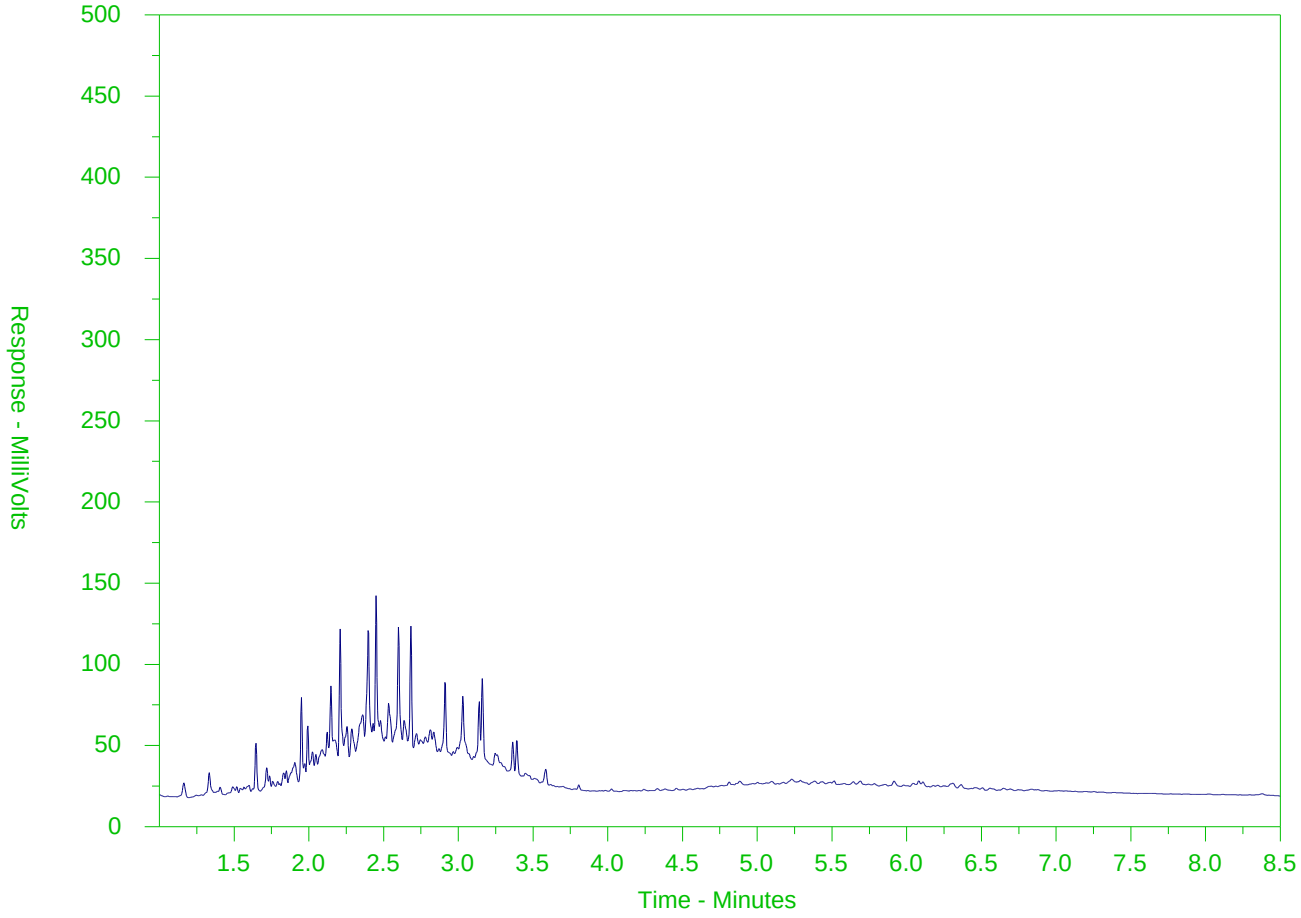
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

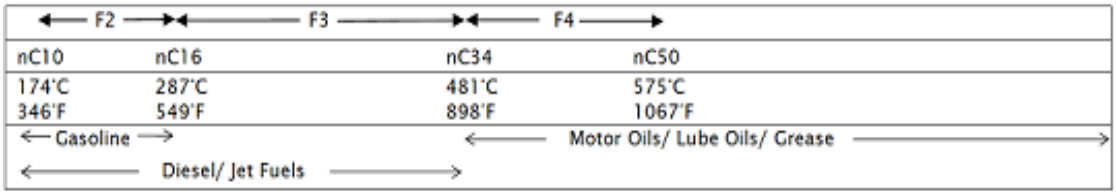
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2620199-7
Client Sample ID: EX9-21-48





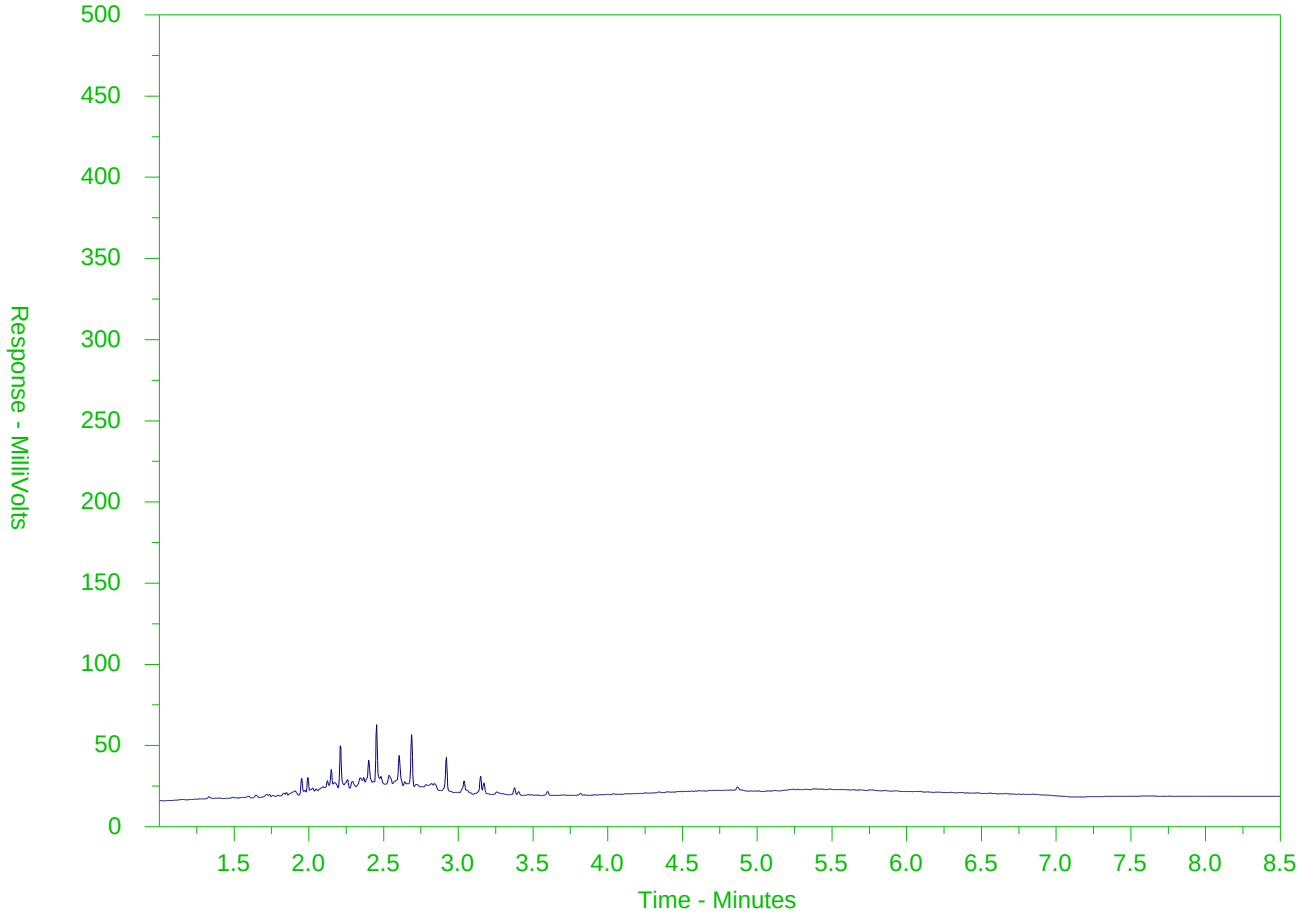
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

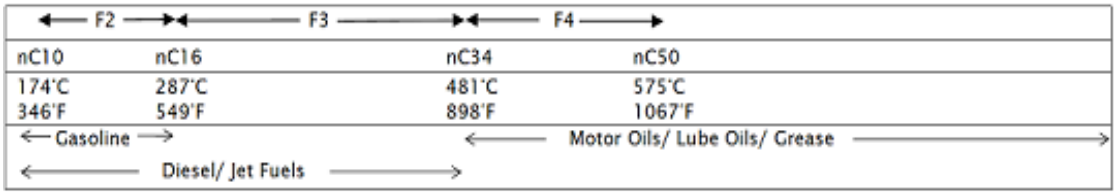
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2620199-8
Client Sample ID: EX9-21-53





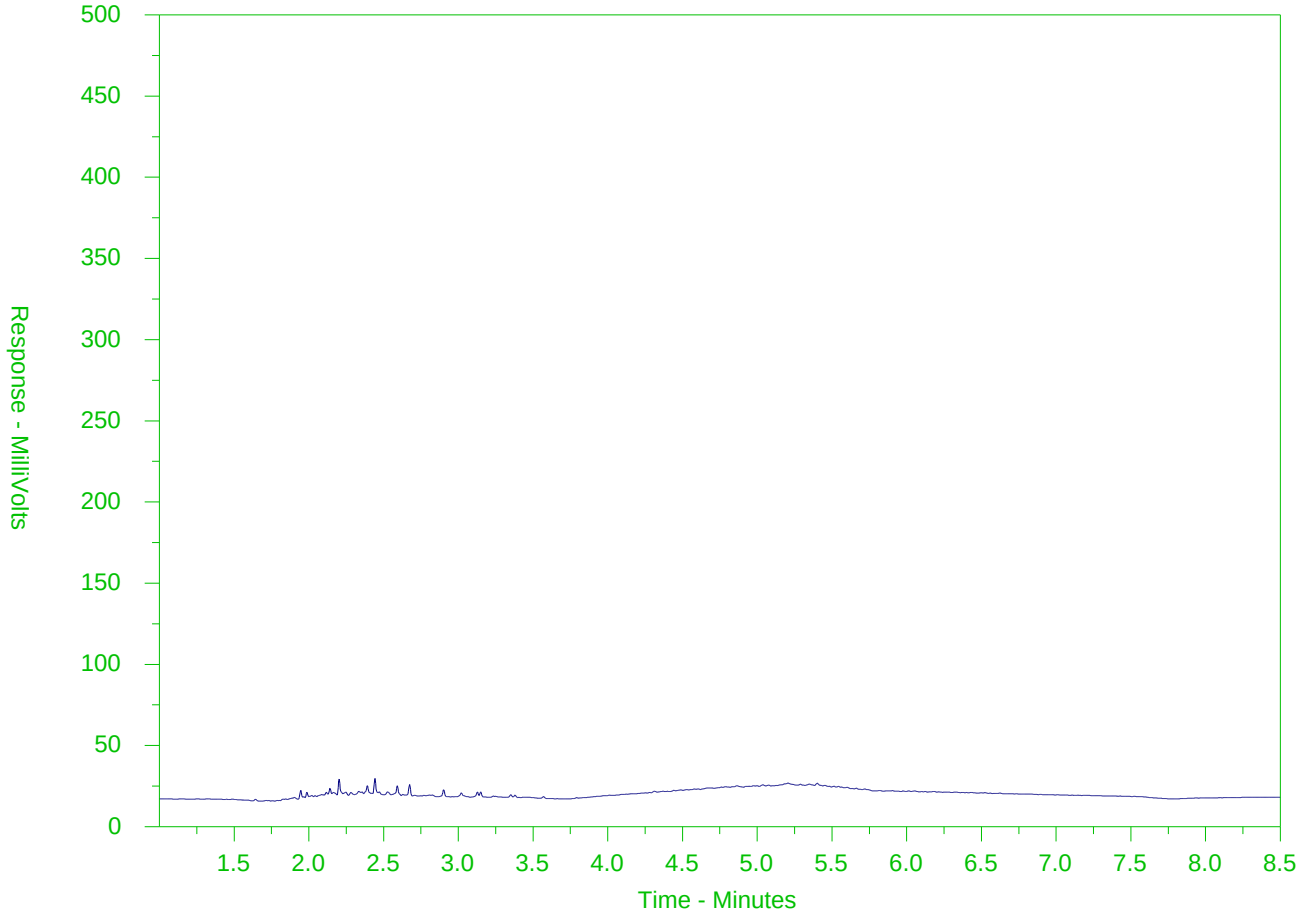
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

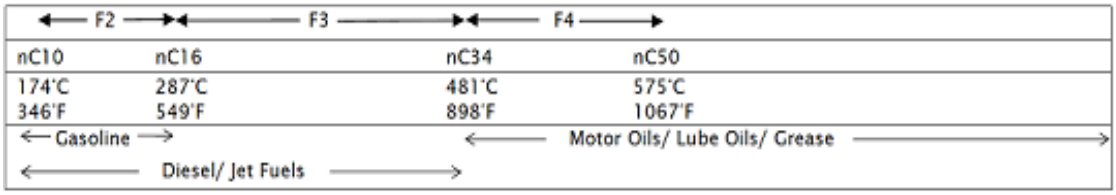
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2620199-9
Client Sample ID: EX9-21-56





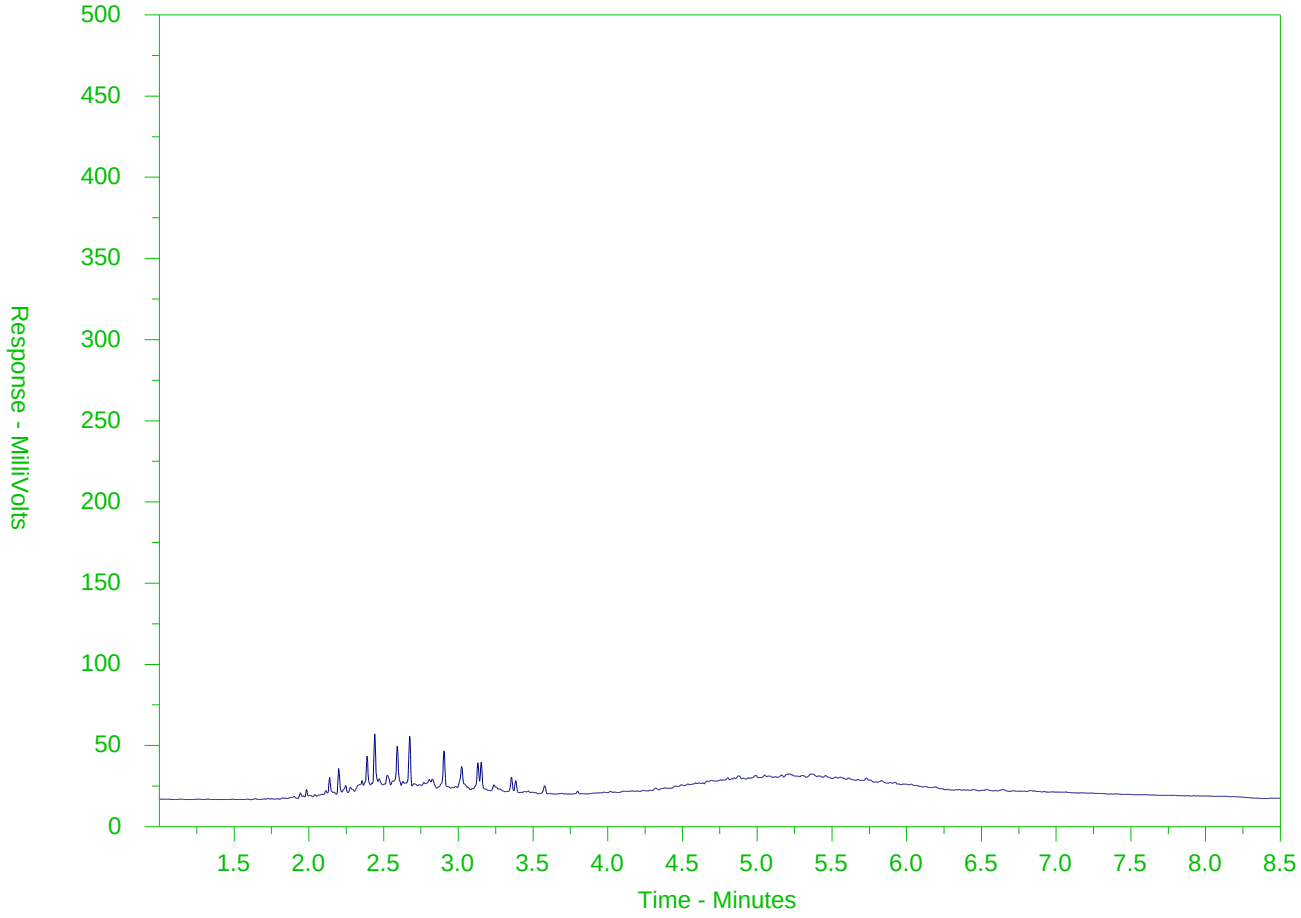
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

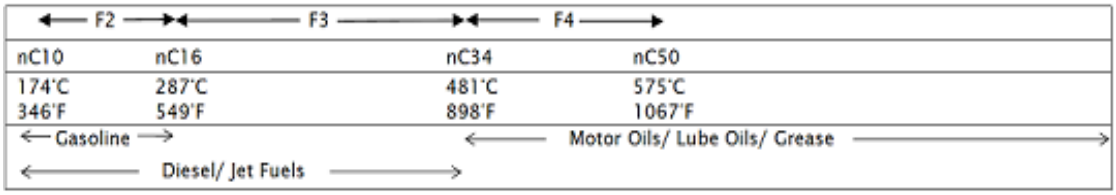
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2620199-10
Client Sample ID: EX9-21-61





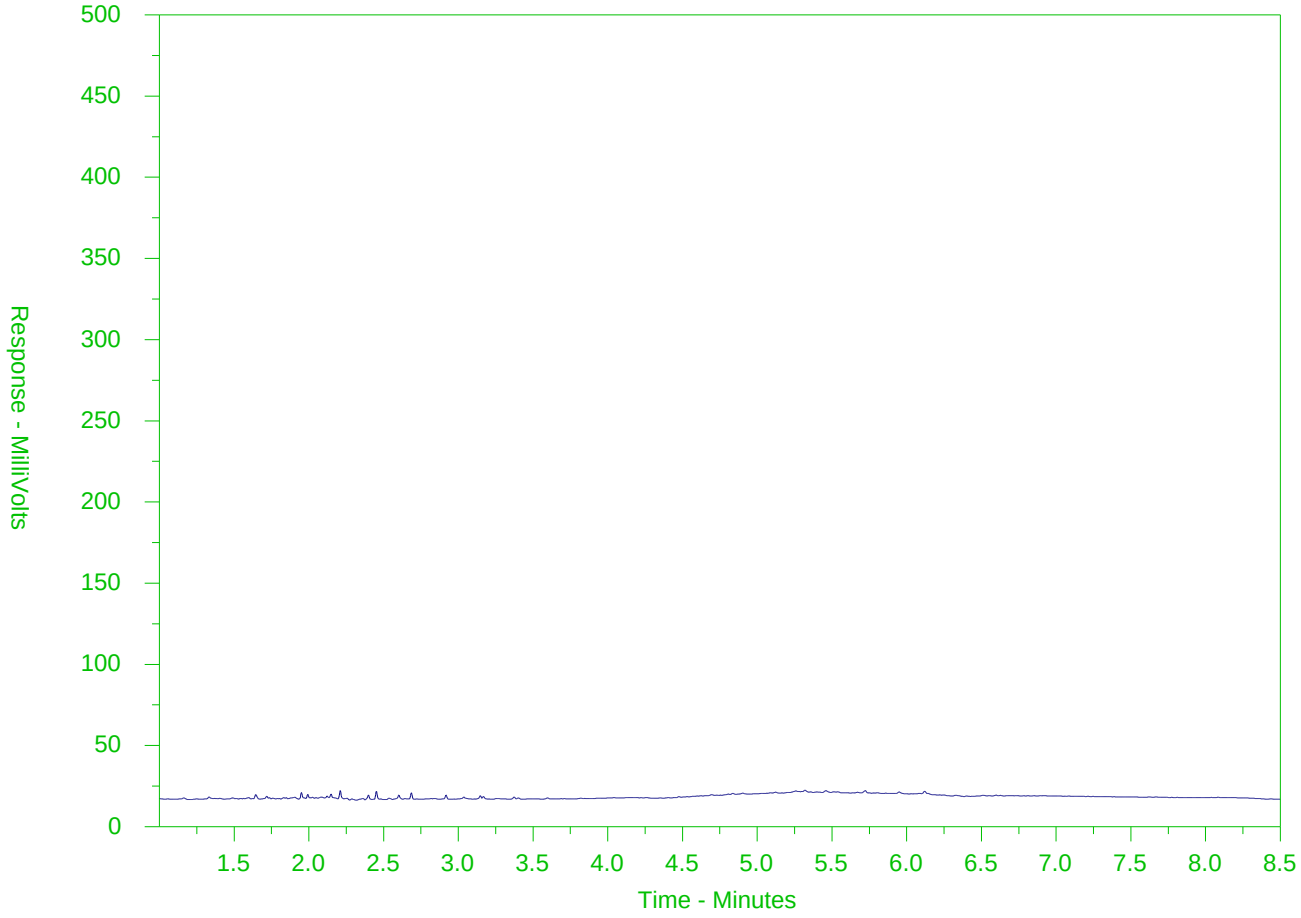
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

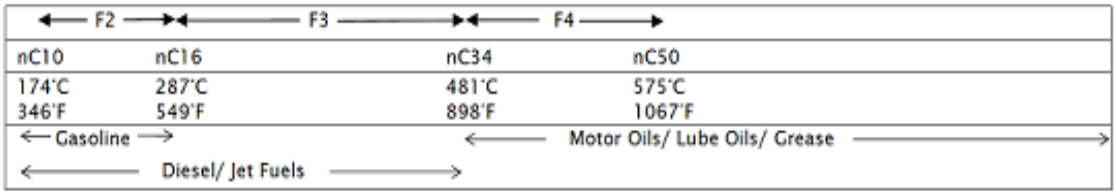
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2620199-11
Client Sample ID: EX9-21-63





The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number:

Page 1 of 3

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution	
Select Report Format:	☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report	☑ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	k.lewis@mandalayresources.com
Email 2	sfiddler@golder.com
Email 3	jmusijowski@golder.com

Invoice Distribution	
Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	
Email 2	

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)			
Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply			
PRIORITY (Business Days)	4 day [P4-20%] ☐	EMERGENCY	1 Business day [E - 100%] ☑
	3 day [P3-25%] ☐		Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐
	2 day [P2-50%] ☐		
Date and Time Required for all E&P TATs:		dd-mmm-yy hh:mm	
For tests that can not be performed according to the service level selected, you will be contacted.			

Project Information	
ALS Account # / Quote #:	Q80711
Job #:	2049621
PO / AFE:	
LSD:	Lupin Mine
ALS Lab Work Order # (lab use only):	L2620199

Oil and Gas Required Fields (client use)			
AFE/Cost Center:		PO#	
Major/Minor Code:		Routing Code:	
Requisitioner:			
Location:			
ALS Contact:	Oliver Gregg	Sampler:	

Analysis Request

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	Lead	Arsenic	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
13	EX9-21-30	22-Jul-21		Soil	3	X				
14	EX9-21-31					X				
15	EX9-21-35					X				
16	EX9-21-34					X				
17	EX9-21-42					X				
18	EX9-21-43					X				
19	EX9-21-48					X				
20	EX9-21-53					X				
21	EX9-21-56					X				
22	EX9-21-61					X				
23	EX9-21-63					X				
24	EX9-21-72					X				

L2620199-COFC

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Are samples taken from a Regulated DW System? ☐ YES ☐ NO	Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427
Are samples for human consumption/ use? ☐ YES ☐ NO	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐		SIF Observations	Yes ☐	No ☐	
Ice Packs ☐	Ice Cubes ☐	Custody seal intact	Yes ☐	No ☐	
Cooling Initiated ☐					

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
[illegible]	July 27/21	[illegible]						

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

[illegible] complete [illegible]ns of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agre[illegible] [illegible]nd Conditions as specified on the back page of the white - report copy.

[illegible] er sam[illegible] [illegible]aken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number:

Page 2 of 3

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution	
Select Report Format:	☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report	☑ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	k.lewis@mandalayresources.com
Email 2	sfiddler@golder.com
Email 3	jmusijowski@golder.com

Invoice Distribution	
Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	
Email 2	

Project Information	
ALS Account # / Quote #:	Q80711
Job #:	2044665.1
PO / AFE:	
LSD:	Lupin Mine

Oil and Gas Required Fields (client use)	
AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (lab use only): L2620199

ALS Contact: Oliver Gregg Sampler:

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ 3 day [P3-25%] ☐ 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☐ Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	Lead	Arsenic	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
1	EX9-21-77	27-Jul-21		Soil	3	X				
2	EX9-21-81	"		"	1	X				
3	EX9-21-85				1	X				
4	EX9-21-9					X				
5	EX9-21-81D					X				
6	EX9-21-63D					X				
7	EX9-21-75					X				
8	EX9-21-100					X				
9	EX9-21-104					X				
10	EX9-21-10	27-July-21				X				
11	EX9-21-10D					X				
12	EX9-21-58					X				

L2620199-COFC

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Are samples taken from a Regulated DW System? ☐ YES ☐ NO	Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427
Are samples for human consumption/ use? ☐ YES ☐ NO	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
11.2							

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
K-Boyer	July 27/21	9:00	MF	28-Jul-21	15:00			

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

[1] If drinking water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number:

Page 3 of 3

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution	
Select Report Format:	☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report	☑ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	k.lewis@mandalayresources.com
Email 2	sfiddler@golder.com
Email 3	jmusijowski@golder.com

Invoice Distribution	
Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	
Email 2	

Project Information	
ALS Account # / Quote #:	Q80711
Job #:	20496521
PO / AFE:	
LSD:	LUPIN MINE

Oil and Gas Required Fields (client use)	
AFE/Cost Center	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (lab use only):

ALS Contact: Oliver Gregg

Sampler:

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days)
- 4 day [P4-20%] ☐
- 3 day [P3-25%] ☐
- 2 day [P2-50%] ☐

EMERGENCY
- 1 Business day [E - 100%] ☑
- Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	Lead	Arsenic	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
25	EX9-21-86	27-Jul-21		Soil	3	X				
26	EX9-21-105					X				
27	EX9-21-109					X				
28	EX9-21-110					X				
29	EX9-21-111					X				
30	EX9-21-112					X				
31	EX9-21-118					X				

L2620199-COFC

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Are samples taken from a Regulated DW System? ☐ YES ☐ NO	Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427
Are samples for human consumption/ use? ☐ YES ☐ NO	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			

SHIPMENT RELEASE (client use)		
Released by:	Date:	Time:
R. Dyck	July 27/21	2:00

INITIAL SHIPMENT RECEPTION (lab use only)		
Received by:	Date:	Time:

FINAL SHIPMENT RECEPTION (lab use only)		
Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

Failure to complete ...os of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agre... the Terms and Conditions as specified on the back page of the white - report copy

1. If any water samp... ...taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form

GOLDER ASSOCIATES LTD
ATTN: Steven Fiddler
16820 107 Ave NW
Edmonton AB T5P 4C3

Date Received: 28-JUL-21
Report Date: 02-AUG-21 13:21 (MT)
Version: FINAL

Client Phone: 780-483-3499

Certificate of Analysis

Lab Work Order #: L2620218

Project P.O. #: NOT SUBMITTED
Job Reference: 20446521
C of C Numbers:
Legal Site Desc:

Harman Bhullar
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2620218-1 EX16-21-2							
Sampled By: CLIENT on 23-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	124.1		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	116.3		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	93.7		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		02-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	128.5		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	12.1		0.25	%		01-AUG-21	R5538037
L2620218-2 EX16-21-5							
Sampled By: CLIENT on 23-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	112.6		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	114.7		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	91.0		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		02-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	121.9		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2620218-2 EX16-21-5							
Sampled By: CLIENT on 23-JUL-21							
Matrix: Soil							
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	11.0		0.25	%		01-AUG-21	R5538037
L2620218-3 EX16-21-5D							
Sampled By: CLIENT on 23-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	122.0		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	121.4		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	95.7		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		02-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	106.7		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	12.1		0.25	%		01-AUG-21	R5538037
L2620218-4 EX16-21-18							
Sampled By: CLIENT on 23-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	106.3		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	113.5		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	98.4		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2620218-4 EX16-21-18							
Sampled By: CLIENT on 23-JUL-21							
Matrix: Soil							
CCME Total Hydrocarbons							
F2 (C10-C16)	<25		25	mg/kg		02-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	98.9		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	4.19		0.25	%		01-AUG-21	R5538037
L2620218-5 EX16-21-19							
Sampled By: CLIENT on 23-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	116.9		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	117.4		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	86.0		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		02-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	115.7		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	10.4		0.25	%		01-AUG-21	R5538037
L2620218-6 EX16-21-23							
Sampled By: CLIENT on 23-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	119.8		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	118.3		70-130	%	31-JUL-21	31-JUL-21	R5538023

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2620218-6 EX16-21-23							
Sampled By: CLIENT on 23-JUL-21							
Matrix: Soil							
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	93.4		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		02-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	107.7		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	7.50		0.25	%		01-AUG-21	R5538037
L2620218-7 EX16-21-25							
Sampled By: CLIENT on 23-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	119.4		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	123.0		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	93.4		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		02-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	125.7		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	9.82		0.25	%		01-AUG-21	R5538037
L2620218-8 EX16-21-30							
Sampled By: CLIENT on 23-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2620218-8 EX16-21-30							
Sampled By: CLIENT on 23-JUL-21							
Matrix: Soil							
BTEX and Styrene							
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	123.3		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	121.3		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	99.5		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		02-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	126.2		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	9.27		0.25	%		01-AUG-21	R5538037
L2620218-9 EX16-21-36							
Sampled By: CLIENT on 23-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	108.4		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	109.1		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	100.7		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		02-AUG-21	
F3 (C16-C34)	171		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	171		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	110.8		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2620218-9 EX16-21-36							
Sampled By: CLIENT on 23-JUL-21							
Matrix: Soil							
Moisture	8.79		0.25	%		01-AUG-21	R5538037
L2620218-10 EX16-21-38							
Sampled By: CLIENT on 23-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	107.9		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	108.5		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	88.2		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		02-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	114.1		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	7.48		0.25	%		01-AUG-21	R5538037
L2620218-11 EX16-21-42							
Sampled By: CLIENT on 23-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	101.1		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	99.9		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	88.3		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		02-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2620218-11 EX16-21-42							
Sampled By: CLIENT on 23-JUL-21							
Matrix: Soil							
CCME Total Hydrocarbons							
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	112.7		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	5.91		0.25	%		01-AUG-21	R5538037
L2620218-12 EX16-21-45							
Sampled By: CLIENT on 23-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	97.7		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	97.3		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	82.4		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		02-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	96.0		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	6.25		0.25	%		01-AUG-21	R5538037
L2620218-13 EX16-21-69							
Sampled By: CLIENT on 23-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	110.3		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	115.5		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2620218-13 EX16-21-69							
Sampled By: CLIENT on 23-JUL-21							
Matrix: Soil							
CCME F2-4 Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	96.0		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		02-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	106.1		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	9.60		0.25	%		01-AUG-21	R5538037
L2620218-14 EX16-21-49							
Sampled By: CLIENT on 23-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	110.2		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	108.3		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	83.6		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		02-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	102.2		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	8.89		0.25	%		01-AUG-21	R5538037
L2620218-15 EX16-21-52							
Sampled By: CLIENT on 23-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0092	DLIS	0.0092	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.028	DLIS	0.028	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.026	DLIS	0.026	mg/kg	31-JUL-21	31-JUL-21	R5538023

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2620218-15 EX16-21-52							
Sampled By: CLIENT on 23-JUL-21							
Matrix: Soil							
BTEX and Styrene							
o-Xylene	<0.092	DLIS	0.092	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.092	DLIS	0.092	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	119.9		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	121.5		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	84.4		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<18	DLIS	18	mg/kg		02-AUG-21	
F1-BTEX	<18		18	mg/kg		02-AUG-21	
F2 (C10-C16)	40		25	mg/kg		02-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	120.7		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.13		0.13	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	8.34		0.25	%		01-AUG-21	R5538037
L2620218-16 EX16-21-56							
Sampled By: CLIENT on 23-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	93.7		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	96.2		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	90.9		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		02-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	99.3		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	11.6		0.25	%		01-AUG-21	R5538037

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2620218-17 EX16-21-60							
Sampled By: CLIENT on 23-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	120.5		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	118.1		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	84.4		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		02-AUG-21	
F3 (C16-C34)	169		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	169		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	91.5		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	4.17		0.25	%		01-AUG-21	R5538037
L2620218-18 EX16-21-63							
Sampled By: CLIENT on 23-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	113.9		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	111.0		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	87.1		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		02-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	102.6		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2620218-18 EX16-21-63							
Sampled By: CLIENT on 23-JUL-21							
Matrix: Soil							
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	10.1		0.25	%		01-AUG-21	R5538037
L2620218-19 EX16-21-67							
Sampled By: CLIENT on 23-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	107.5		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	120.8		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	86.0		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		02-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	113.0		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	4.34		0.25	%		01-AUG-21	R5538037
L2620218-20 EX16-21-59							
Sampled By: CLIENT on 26-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	103.3		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	107.8		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	81.1		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2620218-20 EX16-21-59							
Sampled By: CLIENT on 26-JUL-21							
Matrix: Soil							
CCME Total Hydrocarbons							
F2 (C10-C16)	<25		25	mg/kg		02-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	113.1		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	7.96		0.25	%		01-AUG-21	R5538037
L2620218-21 EX16-21-59D							
Sampled By: CLIENT on 26-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	87.6		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	92.7		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	86.2		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		02-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	101.5		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	7.43		0.25	%		01-AUG-21	R5538037
L2620218-22 EX16-21-70							
Sampled By: CLIENT on 27-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	97.2		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	105.6		70-130	%	31-JUL-21	31-JUL-21	R5538023

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2620218-22 EX16-21-70							
Sampled By: CLIENT on 27-JUL-21							
Matrix: Soil							
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	86.4		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		02-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	100.2		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	8.21		0.25	%		01-AUG-21	R5538037
L2620218-23 EX16-21-75							
Sampled By: CLIENT on 27-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	99.0		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	98.4		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	89.1		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		02-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	74.3		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	7.54		0.25	%		01-AUG-21	R5538037
L2620218-24 EX16-21-74							
Sampled By: CLIENT on 27-JUL-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	31-JUL-21	31-JUL-21	R5538023

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2620218-24 EX16-21-74							
Sampled By: CLIENT on 27-JUL-21							
Matrix: Soil							
BTEX and Styrene							
Ethylbenzene	<0.015		0.015	mg/kg	31-JUL-21	31-JUL-21	R5538023
Toluene	<0.014		0.014	mg/kg	31-JUL-21	31-JUL-21	R5538023
o-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
m+p-Xylene	<0.050		0.050	mg/kg	31-JUL-21	31-JUL-21	R5538023
Surrogate: 1,4-Difluorobenzene	97.8		70-130	%	31-JUL-21	31-JUL-21	R5538023
Surrogate: 4-Bromofluorobenzene	98.5		70-130	%	31-JUL-21	31-JUL-21	R5538023
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	31-JUL-21	02-AUG-21	R5538437
Prep/Analysis Dates					31-JUL-21	02-AUG-21	R5538437
Surrogate: 2-Bromobenzotrifluoride	84.2		70-130	%	31-JUL-21	02-AUG-21	R5538437
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-AUG-21	
F1-BTEX	<10		10	mg/kg		02-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		02-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		02-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		02-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	96.9		70-130	%	31-JUL-21	31-JUL-21	R5538024
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		01-AUG-21	
Miscellaneous Parameters							
Moisture	8.21		0.25	%		01-AUG-21	R5538037

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
DLIS	Detection Limit Adjusted: Insufficient Sample

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BTXS-MEOH-HS-MS-CL	Soil	BTEX and Styrene	EPA 8260C/5021A

The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. Target compound concentrations are measured using mass spectrometry detection.

F1-4-CALC-CL	Soil	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-MEOH-HS-FID-CL	Soil	F1(C6-C10)	CWS PHC Tier 1

The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. The F1 fraction concentration is measured using flame ionization detection.

F2-4-TMB-H/A-FID-CL	Soil	CCME F2-4 Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

This analysis is carried out in accordance with the "Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method, Canadian Council of Ministers of the Environment, December 2001." For C10 to C50 hydrocarbons (F2, F3, F4) and gravimetric heavy hydrocarbons (F4G-sg), a subsample of the sediment/soil is extracted with 1:1 hexane:acetone using a rotary extractor. The extract undergoes a silica-gel clean-up to remove polar compounds. F2, F3 & F4 are analyzed by on-column GC/FID, and F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where F4 (C34-C50) and F4G-sg results are reported for a sample, the larger of the reported values is used for comparison against the relevant CCME standard for F4.
7. The gravimetric heavy hydrocarbon results (F4G-sg), cannot be added to the C6 to C50 hydrocarbon results.
8. This method is validated for use.
9. Data from analysis of quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram.

MOISTURE-CL	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)

This analysis is carried out gravimetrically by drying the sample at 105 C

XYLENES-SUM-CALC-CL	Soil	Sum of Xylene Isomer Concentrations	CALCULATED RESULT

Total xylenes represents the sum of o-xylene and m&p-xylene.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
CL	ALS ENVIRONMENTAL - CALGARY, ALBERTA, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Client: GOLDER ASSOCIATES LTD
16820 107 Ave NW
Edmonton AB T5P 4C3
Contact: Steven Fiddler

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTXS-MEOH-HS-MS-CL	**Soil**							
Batch R5538023								
WG3588248-3 DUP		**L2620218-1**						
Benzene		<0.0050	<0.0050	RPD-NA	mg/kg	N/A	30	31-JUL-21
Ethylbenzene		<0.015	<0.015	RPD-NA	mg/kg	N/A	30	31-JUL-21
Toluene		<0.014	<0.014	RPD-NA	mg/kg	N/A	30	31-JUL-21
o-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	31-JUL-21
m+p-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	31-JUL-21
WG3588248-6 DUP		**L2620218-21**						
Benzene		<0.0050	<0.0050	RPD-NA	mg/kg	N/A	30	31-JUL-21
Ethylbenzene		<0.015	<0.015	RPD-NA	mg/kg	N/A	30	31-JUL-21
Toluene		<0.014	<0.014	RPD-NA	mg/kg	N/A	30	31-JUL-21
o-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	31-JUL-21
m+p-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	31-JUL-21
WG3588248-2 LCS								
Benzene			93.7		%		70-130	31-JUL-21
Ethylbenzene			92.1		%		70-130	31-JUL-21
Toluene			96.5		%		70-130	31-JUL-21
o-Xylene			91.8		%		70-130	31-JUL-21
m+p-Xylene			87.4		%		70-130	31-JUL-21
WG3588248-5 LCS								
Benzene			98.5		%		70-130	31-JUL-21
Ethylbenzene			100.2		%		70-130	31-JUL-21
Toluene			103.4		%		70-130	31-JUL-21
o-Xylene			105.8		%		70-130	31-JUL-21
m+p-Xylene			99.3		%		70-130	31-JUL-21
WG3588248-1 MB								
Benzene			<0.0050		mg/kg		0.005	31-JUL-21
Ethylbenzene			<0.015		mg/kg		0.015	31-JUL-21
Toluene			<0.014		mg/kg		0.014	31-JUL-21
o-Xylene			<0.050		mg/kg		0.05	31-JUL-21
m+p-Xylene			<0.050		mg/kg		0.05	31-JUL-21
Surrogate: 1,4-Difluorobenzene			89.8		%		70-130	31-JUL-21
Surrogate: 4-Bromofluorobenzene			105.6		%		70-130	31-JUL-21
WG3588248-4 MB								
Benzene			<0.0050		mg/kg		0.005	31-JUL-21
Ethylbenzene			<0.015		mg/kg		0.015	31-JUL-21
Toluene			<0.014		mg/kg		0.014	31-JUL-21

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTXS-MEOH-HS-MS-CL	**Soil**							
Batch R5538023								
WG3588248-4 MB								
o-Xylene			<0.050		mg/kg		0.05	31-JUL-21
m+p-Xylene			<0.050		mg/kg		0.05	31-JUL-21
Surrogate: 1,4-Difluorobenzene			93.9		%		70-130	31-JUL-21
Surrogate: 4-Bromofluorobenzene			100.9		%		70-130	31-JUL-21
F1-MEOH-HS-FID-CL	**Soil**							
Batch R5538024								
WG3588248-3 DUP		**L2620218-1**						
F1(C6-C10)		<10	<10	RPD-NA	mg/kg	N/A	30	31-JUL-21
WG3588248-6 DUP		**L2620218-21**						
F1(C6-C10)		<10	<10	RPD-NA	mg/kg	N/A	30	31-JUL-21
WG3588248-2 LCS								
F1(C6-C10)			98.7		%		70-130	31-JUL-21
WG3588248-5 LCS								
F1(C6-C10)			93.9		%		70-130	31-JUL-21
WG3588248-1 MB								
F1(C6-C10)			<10		mg/kg		10	31-JUL-21
Surrogate: 3,4-Dichlorotoluene			109.2		%		70-130	31-JUL-21
WG3588248-4 MB								
F1(C6-C10)			<10		mg/kg		10	31-JUL-21
Surrogate: 3,4-Dichlorotoluene			104.2		%		70-130	31-JUL-21
F2-4-TMB-H/A-FID-CL	**Soil**							
Batch R5538437								
WG3588245-4 DUP		**L2620218-1**						
F2: (C10-C16)		<25	<25	RPD-NA	mg/kg	N/A	40	02-AUG-21
F3: (C16-C34)		<50	<50	RPD-NA	mg/kg	N/A	40	02-AUG-21
F4: (C34-C50)		<50	<50	RPD-NA	mg/kg	N/A	40	02-AUG-21
WG3588245-8 DUP		**L2620218-21**						
F2: (C10-C16)		<25	<25	RPD-NA	mg/kg	N/A	40	02-AUG-21
F3: (C16-C34)		<50	<50	RPD-NA	mg/kg	N/A	40	02-AUG-21
F4: (C34-C50)		<50	<50	RPD-NA	mg/kg	N/A	40	02-AUG-21
WG3588245-3 IRM		**ALS PHC3 RM**						
F2: (C10-C16)			101.8		%		70-130	02-AUG-21
F3: (C16-C34)			103.6		%		70-130	02-AUG-21
F4: (C34-C50)			97.2		%		70-130	02-AUG-21
WG3588245-7 IRM		**ALS PHC3 RM**						
F2: (C10-C16)			104.0		%		70-130	02-AUG-21

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-4-TMB-H/A-FID-CL	**Soil**							
Batch R5538437								
WG3588245-7 IRM		**ALS PHC3 RM**						
F3: (C16-C34)			102.1		%		70-130	02-AUG-21
F4: (C34-C50)			100.6		%		70-130	02-AUG-21
WG3588245-2 LCS								
F2: (C10-C16)			119.5		%		70-130	02-AUG-21
F3: (C16-C34)			108.2		%		70-130	02-AUG-21
F4: (C34-C50)			90.4		%		70-130	02-AUG-21
WG3588245-6 LCS								
F2: (C10-C16)			114.6		%		70-130	02-AUG-21
F3: (C16-C34)			101.5		%		70-130	02-AUG-21
F4: (C34-C50)			86.1		%		70-130	02-AUG-21
WG3588245-1 MB								
F2: (C10-C16)			<25		mg/kg		25	02-AUG-21
F3: (C16-C34)			<50		mg/kg		50	02-AUG-21
F4: (C34-C50)			<50		mg/kg		50	02-AUG-21
Surrogate: 2-Bromobenzotrifluoride			98.2		%		70-130	02-AUG-21
WG3588245-5 MB								
F2: (C10-C16)			<25		mg/kg		25	02-AUG-21
F3: (C16-C34)			<50		mg/kg		50	02-AUG-21
F4: (C34-C50)			<50		mg/kg		50	02-AUG-21
Surrogate: 2-Bromobenzotrifluoride			95.0		%		70-130	02-AUG-21
MOISTURE-CL	**Soil**							
Batch R5538037								
WG3588246-3 DUP		**L2620218-1**						
Moisture		12.1	10.2		%	17	20	01-AUG-21
WG3588246-6 DUP		**L2620218-21**						
Moisture		7.43	8.41		%	12	20	01-AUG-21
WG3588246-2 LCS								
Moisture			103.7		%		90-110	01-AUG-21
WG3588246-5 LCS								
Moisture			98.2		%		90-110	01-AUG-21
WG3588246-1 MB								
Moisture			<0.25		%		0.25	01-AUG-21
WG3588246-4 MB								
Moisture			<0.25		%		0.25	01-AUG-21

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

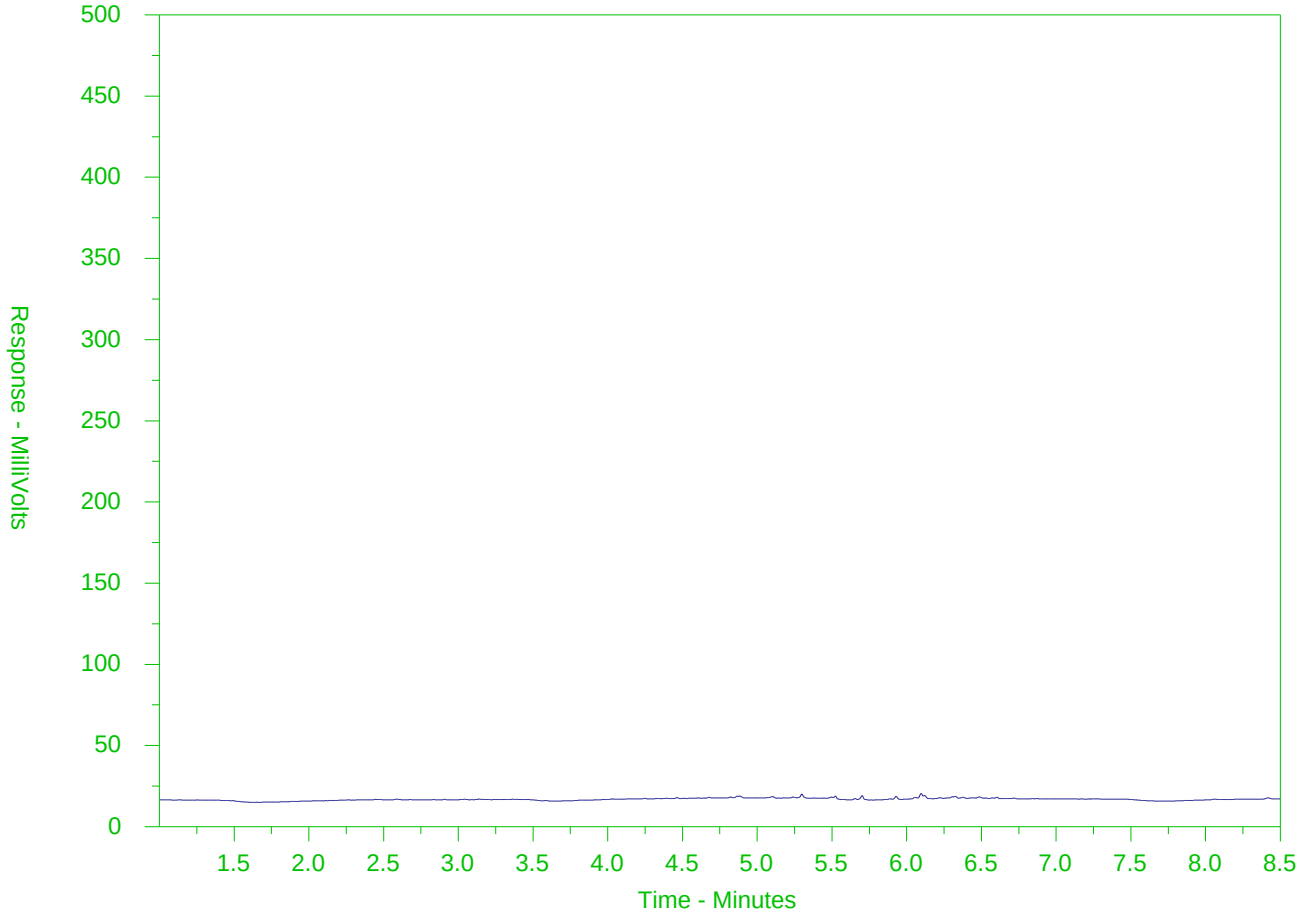
All test results reported with this submission were conducted within ALS recommended hold times.

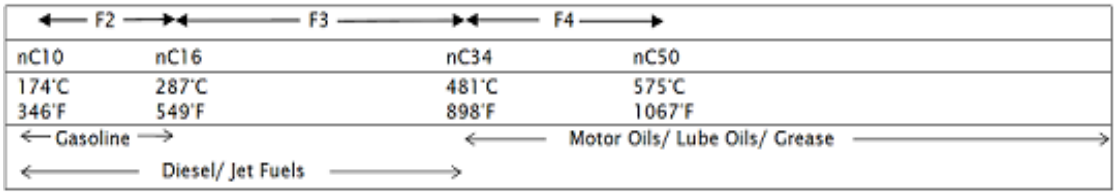
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

ALS Sample ID: L2620218-10
Client Sample ID: EX16-21-38





The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number:

Page 1 of 2

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution	
Select Report Format:	☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report	☑ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	k.lewis@mandalayresources.com
Email 2	sfiddler@golder.com
Email 3	jmusijowski@golder.com

Invoice Distribution	
Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	
Email 2	

Project Information	
ALS Account # / Quote #:	Q80711
Job #:	
PO / AFE:	20446521
LSD:	
ALS Lab Work Order # (lab use only):	L2620218

Oil and Gas Required Fields (client use)	
AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	
ALS Contact: Oliver Gregg	Sampler:

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days)		EMERGENCY	
	4 day [P4-20%] ☐		1 Business day [E - 100%] ☐
	3 day [P3-25%] ☐		Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐
	2 day [P2-50%] ☐		

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

NUMBER OF CONTAINERS

L2620218-COFC

SAMPLES ON HOLD

SUSPECTED HAZARD (see Special Instructions)

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	Lead	Arsenic
1	EX16-21-7	23-Jul-21		Soil	3	X		
2	EX16-21-5					X		
3	EX16-21-5D					X		
4	EX16-21-19					X		
5	EX16-21-19					X		
6	EX16-21-23					X		
7	EX16-21-24					X		
8	EX16-21-30					X		
9	EX16-21-36					X		
10	EX16-21-38					X		
11	EX16-21-42					X		
12	EX16-21-45					X		

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human consumption/ use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please upload to EQUIS Code: 2016 EEM – Lupin Facility Code: 36896427

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			

SHIPMENT RELEASE (client use)		
Released by: R. Boyce	Date: July 27/21	Time: 8:00

INITIAL SHIPMENT RECEPTION (lab use only)		
Received by:	Date:	Time:

FINAL SHIPMENT RECEPTION (lab use only)		
Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number:

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution	
Select Report Format:	☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report	☑ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	k.lewis@mandalayresources.com
Email 2	sfiddler@golder.com
Email 3	jmusijowski@golder.com

Invoice Distribution	
Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	
Email 2	

Project Information	
ALS Account # / Quote #:	Q80711
Job #:	PO 446521
PO / AFE:	
LSD:	
ALS Lab Work Order # (lab use only):	L2620218

Oil and Gas Required Fields (client use)	
AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	
ALS Contact: Oliver Gregg	Sampler:

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☒ | Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

NUMBER OF CONTAINERS | BTEX, F1-F4 | Lead | Arsenic | SAMPLES ON HOLD | SUSPECTED HAZARD (see Special Instructions)

L2620218-COFC

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	Lead	Arsenic	SAMPLES ON HOLD	SUSPECTED HAZARD
R13	EX16-21-65	23-Jul-21		Soil	3	X				
14	EX16-21-49	"		"	1	X				
15	EX16-21-52	"		"	1	X				
16	EX16-21-50	"		"	1	X				
17	EX16-21-60	"		"	1	X				
R8	EX16-21-63	"		"	1	X				
19	EX16-21-67	"		"	1	X				
20	EX16-21-59	26-Jul-21		"	1	X				
21	EX16-21-59D	"		"	1	X				
22	EX16-21-70	27-Jul-21		"	1	X				
25	EX16-21-75	"		"	1	X				
24	EX16-21-74	"		"	1	X				

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Are samples taken from a Regulated DW System? ☐ YES ☐ NO	Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427
Are samples for human consumption/ use? ☐ YES ☐ NO	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ | SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ | Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
11.2							

SHIPMENT RELEASE (client use)		
Released by: K. Boyce	Date: July 27/21	Time: 8:a

INITIAL SHIPMENT RECEPTION (lab use only)		
Received by:	Date: 24-Jul-21	Time: 8:00

FINAL SHIPMENT RECEPTION (lab use only)		
Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees to the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

GOLDER ASSOCIATES LTD
ATTN: Steven Fiddler
16820 107 Ave NW
Edmonton AB T5P 4C3

Date Received: 04-AUG-21
Report Date: 08-AUG-21 16:01 (MT)
Version: FINAL

Client Phone: 780-483-3499

Certificate of Analysis

Lab Work Order #: L2622923

Project P.O. #: NOT SUBMITTED
Job Reference: 20446521
C of C Numbers:
Legal Site Desc:

Harman Bhullar
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2622923-1 EX9-21-65							
Sampled By: CLIENT on 03-AUG-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.102		0.0050	mg/kg	03-AUG-21	08-AUG-21	R5543914
Toluene	0.605		0.050	mg/kg	03-AUG-21	08-AUG-21	R5543914
Ethylbenzene	0.342		0.010	mg/kg	03-AUG-21	08-AUG-21	R5543914
Xylenes	3.28		0.10	mg/kg	03-AUG-21	08-AUG-21	R5543914
m+p-Xylene	2.09		0.050	mg/kg	03-AUG-21	08-AUG-21	R5543914
o-Xylene	1.19		0.050	mg/kg	03-AUG-21	08-AUG-21	R5543914
Surrogate: 1,4-Difluorobenzene (SS)	116.5		70-130	%	03-AUG-21	08-AUG-21	R5543914
Surrogate: 4-Bromofluorobenzene (SS)	108.2		70-130	%	03-AUG-21	08-AUG-21	R5543914
Surrogate: 3,4-Dichlorotoluene (SS)	89.9		70-130	%	03-AUG-21	08-AUG-21	R5543914
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	85.1		70-130	%	08-AUG-21	08-AUG-21	R5545855
Chrom. to baseline at nC50	YES				08-AUG-21	08-AUG-21	R5545855
Prep/Analysis Dates					08-AUG-21	08-AUG-21	R5545855
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		08-AUG-21	
F1-BTEX	<10		10	mg/kg		08-AUG-21	
F2 (C10-C16)	<20		20	mg/kg		08-AUG-21	
F3 (C16-C34)	<20		20	mg/kg		08-AUG-21	
F4 (C34-C50)	<20		20	mg/kg		08-AUG-21	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		08-AUG-21	
Miscellaneous Parameters							
% Moisture	9.16		0.25	%		06-AUG-21	R5545828
L2622923-2 EX9-21-68							
Sampled By: CLIENT on 03-AUG-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.0052		0.0050	mg/kg	03-AUG-21	08-AUG-21	R5543914
Toluene	<0.050		0.050	mg/kg	03-AUG-21	08-AUG-21	R5543914
Ethylbenzene	0.108		0.010	mg/kg	03-AUG-21	08-AUG-21	R5543914
Xylenes	0.73		0.10	mg/kg	03-AUG-21	08-AUG-21	R5543914
m+p-Xylene	0.378		0.050	mg/kg	03-AUG-21	08-AUG-21	R5543914
o-Xylene	0.348		0.050	mg/kg	03-AUG-21	08-AUG-21	R5543914
Surrogate: 1,4-Difluorobenzene (SS)	126.2		70-130	%	03-AUG-21	08-AUG-21	R5543914
Surrogate: 4-Bromofluorobenzene (SS)	123.3		70-130	%	03-AUG-21	08-AUG-21	R5543914
Surrogate: 3,4-Dichlorotoluene (SS)	96.4		70-130	%	03-AUG-21	08-AUG-21	R5543914
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	85.9		70-130	%	08-AUG-21	08-AUG-21	R5545855
Chrom. to baseline at nC50	YES				08-AUG-21	08-AUG-21	R5545855
Prep/Analysis Dates					08-AUG-21	08-AUG-21	R5545855
CCME Total Hydrocarbons							
F1 (C6-C10)	18		10	mg/kg		08-AUG-21	
F1-BTEX	17		10	mg/kg		08-AUG-21	
F2 (C10-C16)	56		20	mg/kg		08-AUG-21	
F3 (C16-C34)	<20		20	mg/kg		08-AUG-21	
F4 (C34-C50)	<20		20	mg/kg		08-AUG-21	
Total Hydrocarbons (C6-C50)	74		20	mg/kg		08-AUG-21	
Miscellaneous Parameters							
% Moisture	9.24		0.25	%		06-AUG-21	R5545828

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2622923-3 EX9-21-115							
Sampled By: CLIENT on 03-AUG-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	03-AUG-21	08-AUG-21	R5543914
Toluene	0.124		0.050	mg/kg	03-AUG-21	08-AUG-21	R5543914
Ethylbenzene	<0.010		0.010	mg/kg	03-AUG-21	08-AUG-21	R5543914
Xylenes	<0.10		0.10	mg/kg	03-AUG-21	08-AUG-21	R5543914
m+p-Xylene	<0.050		0.050	mg/kg	03-AUG-21	08-AUG-21	R5543914
o-Xylene	<0.050		0.050	mg/kg	03-AUG-21	08-AUG-21	R5543914
Surrogate: 1,4-Difluorobenzene (SS)	123.6		70-130	%	03-AUG-21	08-AUG-21	R5543914
Surrogate: 4-Bromofluorobenzene (SS)	119.8		70-130	%	03-AUG-21	08-AUG-21	R5543914
Surrogate: 3,4-Dichlorotoluene (SS)	102.3		70-130	%	03-AUG-21	08-AUG-21	R5543914
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	85.4		70-130	%	08-AUG-21	08-AUG-21	R5545855
Chrom. to baseline at nC50	YES				08-AUG-21	08-AUG-21	R5545855
Prep/Analysis Dates					08-AUG-21	08-AUG-21	R5545855
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		08-AUG-21	
F1-BTEX	<10		10	mg/kg		08-AUG-21	
F2 (C10-C16)	<20		20	mg/kg		08-AUG-21	
F3 (C16-C34)	<20		20	mg/kg		08-AUG-21	
F4 (C34-C50)	<20		20	mg/kg		08-AUG-21	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		08-AUG-21	
Miscellaneous Parameters							
% Moisture	8.28		0.25	%		06-AUG-21	R5545828
L2622923-4 EX9-21-123							
Sampled By: CLIENT on 03-AUG-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	03-AUG-21	08-AUG-21	R5543914
Toluene	0.062		0.050	mg/kg	03-AUG-21	08-AUG-21	R5543914
Ethylbenzene	<0.010		0.010	mg/kg	03-AUG-21	08-AUG-21	R5543914
Xylenes	<0.10		0.10	mg/kg	03-AUG-21	08-AUG-21	R5543914
m+p-Xylene	<0.050		0.050	mg/kg	03-AUG-21	08-AUG-21	R5543914
o-Xylene	<0.050		0.050	mg/kg	03-AUG-21	08-AUG-21	R5543914
Surrogate: 1,4-Difluorobenzene (SS)	125.2		70-130	%	03-AUG-21	08-AUG-21	R5543914
Surrogate: 4-Bromofluorobenzene (SS)	116.0		70-130	%	03-AUG-21	08-AUG-21	R5543914
Surrogate: 3,4-Dichlorotoluene (SS)	99.0		70-130	%	03-AUG-21	08-AUG-21	R5543914
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	83.6		70-130	%	08-AUG-21	08-AUG-21	R5545855
Chrom. to baseline at nC50	YES				08-AUG-21	08-AUG-21	R5545855
Prep/Analysis Dates					08-AUG-21	08-AUG-21	R5545855
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		08-AUG-21	
F1-BTEX	<10		10	mg/kg		08-AUG-21	
F2 (C10-C16)	36		20	mg/kg		08-AUG-21	
F3 (C16-C34)	30		20	mg/kg		08-AUG-21	
F4 (C34-C50)	<20		20	mg/kg		08-AUG-21	
Total Hydrocarbons (C6-C50)	66		20	mg/kg		08-AUG-21	
Miscellaneous Parameters							
% Moisture	8.75		0.25	%		06-AUG-21	R5545828

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2622923-5 EX9-21-124							
Sampled By: CLIENT on 03-AUG-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	03-AUG-21	08-AUG-21	R5543914
Toluene	0.095		0.050	mg/kg	03-AUG-21	08-AUG-21	R5543914
Ethylbenzene	<0.010		0.010	mg/kg	03-AUG-21	08-AUG-21	R5543914
Xylenes	<0.10		0.10	mg/kg	03-AUG-21	08-AUG-21	R5543914
m+p-Xylene	<0.050		0.050	mg/kg	03-AUG-21	08-AUG-21	R5543914
o-Xylene	<0.050		0.050	mg/kg	03-AUG-21	08-AUG-21	R5543914
Surrogate: 1,4-Difluorobenzene (SS)	123.9		70-130	%	03-AUG-21	08-AUG-21	R5543914
Surrogate: 4-Bromofluorobenzene (SS)	119.8		70-130	%	03-AUG-21	08-AUG-21	R5543914
Surrogate: 3,4-Dichlorotoluene (SS)	95.3		70-130	%	03-AUG-21	08-AUG-21	R5543914
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	84.3		70-130	%	08-AUG-21	08-AUG-21	R5545855
Chrom. to baseline at nC50	YES				08-AUG-21	08-AUG-21	R5545855
Prep/Analysis Dates					08-AUG-21	08-AUG-21	R5545855
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		08-AUG-21	
F1-BTEX	<10		10	mg/kg		08-AUG-21	
F2 (C10-C16)	39		20	mg/kg		08-AUG-21	
F3 (C16-C34)	115		20	mg/kg		08-AUG-21	
F4 (C34-C50)	49		20	mg/kg		08-AUG-21	
Total Hydrocarbons (C6-C50)	203		20	mg/kg		08-AUG-21	
Miscellaneous Parameters							
% Moisture	8.42		0.25	%		06-AUG-21	R5545828
L2622923-6 EX9-21-125							
Sampled By: CLIENT on 03-AUG-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	03-AUG-21	08-AUG-21	R5543914
Toluene	<0.050		0.050	mg/kg	03-AUG-21	08-AUG-21	R5543914
Ethylbenzene	<0.010		0.010	mg/kg	03-AUG-21	08-AUG-21	R5543914
Xylenes	<0.10		0.10	mg/kg	03-AUG-21	08-AUG-21	R5543914
m+p-Xylene	<0.050		0.050	mg/kg	03-AUG-21	08-AUG-21	R5543914
o-Xylene	<0.050		0.050	mg/kg	03-AUG-21	08-AUG-21	R5543914
Surrogate: 1,4-Difluorobenzene (SS)	121.9		70-130	%	03-AUG-21	08-AUG-21	R5543914
Surrogate: 4-Bromofluorobenzene (SS)	118.6		70-130	%	03-AUG-21	08-AUG-21	R5543914
Surrogate: 3,4-Dichlorotoluene (SS)	91.7		70-130	%	03-AUG-21	08-AUG-21	R5543914
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	82.9		70-130	%	08-AUG-21	08-AUG-21	R5545855
Chrom. to baseline at nC50	YES				08-AUG-21	08-AUG-21	R5545855
Prep/Analysis Dates					08-AUG-21	08-AUG-21	R5545855
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		08-AUG-21	
F1-BTEX	<10		10	mg/kg		08-AUG-21	
F2 (C10-C16)	<20		20	mg/kg		08-AUG-21	
F3 (C16-C34)	<20		20	mg/kg		08-AUG-21	
F4 (C34-C50)	<20		20	mg/kg		08-AUG-21	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		08-AUG-21	
Miscellaneous Parameters							
% Moisture	6.31		0.25	%		06-AUG-21	R5545828

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2622923-7 EX9-21-120							
Sampled By: CLIENT on 04-AUG-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	0.0052		0.0050	mg/kg	04-AUG-21	08-AUG-21	R5543914
Toluene	0.052		0.050	mg/kg	04-AUG-21	08-AUG-21	R5543914
Ethylbenzene	<0.010		0.010	mg/kg	04-AUG-21	08-AUG-21	R5543914
Xylenes	<0.10		0.10	mg/kg	04-AUG-21	08-AUG-21	R5543914
m+p-Xylene	<0.050		0.050	mg/kg	04-AUG-21	08-AUG-21	R5543914
o-Xylene	0.070		0.050	mg/kg	04-AUG-21	08-AUG-21	R5543914
Surrogate: 1,4-Difluorobenzene (SS)	117.2		70-130	%	04-AUG-21	08-AUG-21	R5543914
Surrogate: 4-Bromofluorobenzene (SS)	112.1		70-130	%	04-AUG-21	08-AUG-21	R5543914
Surrogate: 3,4-Dichlorotoluene (SS)	81.9		70-130	%	04-AUG-21	08-AUG-21	R5543914
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	80.6		70-130	%	08-AUG-21	08-AUG-21	R5545855
Chrom. to baseline at nC50	YES				08-AUG-21	08-AUG-21	R5545855
Prep/Analysis Dates					08-AUG-21	08-AUG-21	R5545855
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		08-AUG-21	
F1-BTEX	<10		10	mg/kg		08-AUG-21	
F2 (C10-C16)	22		20	mg/kg		08-AUG-21	
F3 (C16-C34)	<20		20	mg/kg		08-AUG-21	
F4 (C34-C50)	<20		20	mg/kg		08-AUG-21	
Total Hydrocarbons (C6-C50)	22		20	mg/kg		08-AUG-21	
Miscellaneous Parameters							
% Moisture	7.71		0.25	%		06-AUG-21	R5545828
L2622923-8 EX9-21-116							
Sampled By: CLIENT on 04-AUG-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	04-AUG-21	08-AUG-21	R5543914
Toluene	0.247		0.050	mg/kg	04-AUG-21	08-AUG-21	R5543914
Ethylbenzene	<0.010		0.010	mg/kg	04-AUG-21	08-AUG-21	R5543914
Xylenes	<0.10		0.10	mg/kg	04-AUG-21	08-AUG-21	R5543914
m+p-Xylene	<0.050		0.050	mg/kg	04-AUG-21	08-AUG-21	R5543914
o-Xylene	<0.050		0.050	mg/kg	04-AUG-21	08-AUG-21	R5543914
Surrogate: 1,4-Difluorobenzene (SS)	123.3		70-130	%	04-AUG-21	08-AUG-21	R5543914
Surrogate: 4-Bromofluorobenzene (SS)	119.9		70-130	%	04-AUG-21	08-AUG-21	R5543914
Surrogate: 3,4-Dichlorotoluene (SS)	99.2		70-130	%	04-AUG-21	08-AUG-21	R5543914
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	82.2		70-130	%	08-AUG-21	08-AUG-21	R5545855
Chrom. to baseline at nC50	YES				08-AUG-21	08-AUG-21	R5545855
Prep/Analysis Dates					08-AUG-21	08-AUG-21	R5545855
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		08-AUG-21	
F1-BTEX	<10		10	mg/kg		08-AUG-21	
F2 (C10-C16)	<20		20	mg/kg		08-AUG-21	
F3 (C16-C34)	<20		20	mg/kg		08-AUG-21	
F4 (C34-C50)	<20		20	mg/kg		08-AUG-21	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		08-AUG-21	
Miscellaneous Parameters							
% Moisture	6.41		0.25	%		06-AUG-21	R5545828

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2622923-9 EX9-21-114							
Sampled By: CLIENT on 04-AUG-21							
Matrix: Soil							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	04-AUG-21	08-AUG-21	R5543914
Toluene	<0.050		0.050	mg/kg	04-AUG-21	08-AUG-21	R5543914
Ethylbenzene	<0.010		0.010	mg/kg	04-AUG-21	08-AUG-21	R5543914
Xylenes	<0.10		0.10	mg/kg	04-AUG-21	08-AUG-21	R5543914
m+p-Xylene	<0.050		0.050	mg/kg	04-AUG-21	08-AUG-21	R5543914
o-Xylene	<0.050		0.050	mg/kg	04-AUG-21	08-AUG-21	R5543914
Surrogate: 1,4-Difluorobenzene (SS)	113.4		70-130	%	04-AUG-21	08-AUG-21	R5543914
Surrogate: 4-Bromofluorobenzene (SS)	113.1		70-130	%	04-AUG-21	08-AUG-21	R5543914
Surrogate: 3,4-Dichlorotoluene (SS)	92.9		70-130	%	04-AUG-21	08-AUG-21	R5543914
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	82.2		70-130	%	08-AUG-21	08-AUG-21	R5545855
Chrom. to baseline at nC50	YES				08-AUG-21	08-AUG-21	R5545855
Prep/Analysis Dates					08-AUG-21	08-AUG-21	R5545855
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		08-AUG-21	
F1-BTEX	<10		10	mg/kg		08-AUG-21	
F2 (C10-C16)	22		20	mg/kg		08-AUG-21	
F3 (C16-C34)	<20		20	mg/kg		08-AUG-21	
F4 (C34-C50)	<20		20	mg/kg		08-AUG-21	
Total Hydrocarbons (C6-C50)	22		20	mg/kg		08-AUG-21	
Miscellaneous Parameters							
% Moisture	6.75		0.25	%		06-AUG-21	R5545828

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BTXS,F1-MEOH-ED	Soil	BTEX and F1	EPA 8260C/5021A and CWS PHC Tier 1

This analysis involves the extraction of a subsample of the sediment/soil with methanol added in the field at the time of subsampling. The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. BTX Target compound concentrations are measured using mass spectrometry detection. The instrumental portion of F1 analysis is carried out in accordance with the Canada Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method (2001).

ETL-TVH,TEH-CCME-ED	Soil	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F2-4-TMB-ED	Soil	CCME Total Extractable Hydrocarbons	CCME Tier 1

This analysis is carried out in accordance with the "Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method, Canadian Council of Ministers of the Environment" For C10 to C50 hydrocarbons (F2, F3, F4) and gravimetric heavy hydrocarbons (F4G-sg), a subsample of the sediment/soil is extracted with 1:1 hexane:acetone using a rotary extractor. The extract undergoes a silica-gel clean-up to remove polar compounds. F2, F3 & F4 are analyzed by on-column GC/FID, and F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where F4 (C34-C50) and F4G-sg results are reported for a sample, the larger of the reported values is used for comparison against the relevant CCME standard for F4.
7. The gravimetric heavy hydrocarbon results (F4G-sg), cannot be added to the C6 to C50 hydrocarbon results.
8. This method is validated for use.
9. Data from analysis of quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram.

PREP-MOISTURE-ED	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)

The weighed portion of soil is placed in a 105°C oven to dry to a constant weight; the drying time will vary based on the moisture content of the soil. The dried soil weight is then used to calculate % moisture.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
ED	ALS ENVIRONMENTAL - EDMONTON, ALBERTA, CANADA

Chain of Custody Numbers:

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L2622923 Report Date: 08-AUG-21

Client: GOLDER ASSOCIATES LTD
16820 107 Ave NW
Edmonton AB T5P 4C3
Contact: Steven Fiddler

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTXS,F1-MEOH-ED	**Soil**							
Batch R5543914								
WG3591932-2 LCS								
Benzene			114.6		%		70-130	08-AUG-21
Toluene			111.9		%		70-130	08-AUG-21
Ethylbenzene			105.0		%		70-130	08-AUG-21
m+p-Xylene			92.7		%		70-130	08-AUG-21
o-Xylene			112.5		%		70-130	08-AUG-21
WG3591932-1 MB								
Benzene			<0.0050		mg/kg		0.005	08-AUG-21
Toluene			<0.050		mg/kg		0.05	08-AUG-21
Ethylbenzene			<0.010		mg/kg		0.01	08-AUG-21
m+p-Xylene			<0.050		mg/kg		0.05	08-AUG-21
o-Xylene			<0.050		mg/kg		0.05	08-AUG-21
Surrogate: 1,4-Difluorobenzene (SS)			109.7		%		70-130	08-AUG-21
Surrogate: 4-Bromofluorobenzene (SS)			100.5		%		70-130	08-AUG-21
Surrogate: 3,4-Dichlorotoluene (SS)			90.4		%		70-130	08-AUG-21
F2-4-TMB-ED	**Soil**							
Batch R5545855								
WG3591588-3 IRM		**ALS PHC RM3**						
F2 (C10-C16)			98.5		%		70-130	06-AUG-21
F3 (C16-C34)			98.4		%		70-130	06-AUG-21
F4 (C34-C50)			94.2		%		70-130	06-AUG-21
WG3591588-2 LCS		**DIESEL/MOTOR OIL**						
F2 (C10-C16)			95.3		%		70-130	06-AUG-21
F3 (C16-C34)			99.0		%		70-130	06-AUG-21
F4 (C34-C50)			96.3		%		70-130	06-AUG-21
WG3591588-1 MB								
F2 (C10-C16)			<20		mg/kg		20	05-AUG-21
F3 (C16-C34)			<20		mg/kg		20	05-AUG-21
F4 (C34-C50)			<20		mg/kg		20	05-AUG-21
Surrogate: 2-Bromobenzotrifluoride			81.7		%		70-130	05-AUG-21
PREP-MOISTURE-ED	**Soil**							
Batch R5545828								
WG3591911-2 LCS								
% Moisture			100.1		%		90-110	06-AUG-21
WG3591911-1 MB								
% Moisture			<0.25		%		0.25	06-AUG-21

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number:

Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)

Quality Control (QC) Report with Report ☑ YES ☐ NO

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax	k.lewis@mandalayresources.com
Email 2	sfiddler@golder.com
Email 3	jmusijowski@golder.com

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax	
Email 2	

Project Information

ALS Account # / Quote #:	Q80711
Job #:	20446521
PO / AFE:	
LSD:	LUPIN MINE

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (lab use only):

ALS Contact: Oliver Gregg **Sampler:**

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☐ | Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	Lead	Arsenic	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	EX9-21-65	3-AUG-21		Soil	3	X				
	EX9-21-68	"		"	"	X				
	EX9-21-115	"		"	"	X				
	EX9-21-123	"		"	"	X				
	EX9-21-124	"		"	"	X				
	EX9-21-125	"		"	"	X				
	EX9-21-120	4-Aug-21		"	"	X				
	EX9-21-116	"		"	"	X				
	EX9-21-114	"		"	"	X				

L2622923-COFC

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human consumption/ use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen	☐	SIF Observations	Yes ☐	No	☐
Ice Packs	☐ Ice Cubes ☐	Custody seal intact	Yes ☐	No	☐
Cooling Initiated	☐				

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: M. Lundro	Date: Aug 4, 2021	Time: 11:00	Received by:	Date:	Time:	Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCT 2018 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

GOLDER ASSOCIATES LTD
ATTN: Steven Fiddler
16820 107 Ave NW
Edmonton AB T5P 4C3

Date Received: 04-AUG-21
Report Date: 08-AUG-21 16:02 (MT)
Version: FINAL

Client Phone: 780-483-3499

Certificate of Analysis

Lab Work Order #: L2622938

Project P.O. #: NOT SUBMITTED
Job Reference: 20446521
C of C Numbers:
Legal Site Desc:

Harman Bhullar
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2622938-1 EX19-21-1							
Sampled By: CLIENT on 30-JUL-21							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	30-JUL-21	08-AUG-21	R5543914
Toluene	<0.050		0.050	mg/kg	30-JUL-21	08-AUG-21	R5543914
Ethylbenzene	<0.010		0.010	mg/kg	30-JUL-21	08-AUG-21	R5543914
Xylenes	<0.10		0.10	mg/kg	30-JUL-21	08-AUG-21	R5543914
m+p-Xylene	<0.050		0.050	mg/kg	30-JUL-21	08-AUG-21	R5543914
o-Xylene	<0.050		0.050	mg/kg	30-JUL-21	08-AUG-21	R5543914
Surrogate: 1,4-Difluorobenzene (SS)	126.4		70-130	%	30-JUL-21	08-AUG-21	R5543914
Surrogate: 4-Bromofluorobenzene (SS)	113.8		70-130	%	30-JUL-21	08-AUG-21	R5543914
Surrogate: 3,4-Dichlorotoluene (SS)	101.8		70-130	%	30-JUL-21	08-AUG-21	R5543914
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	81.6		70-130	%	08-AUG-21	08-AUG-21	R5545855
Chrom. to baseline at nC50	YES				08-AUG-21	08-AUG-21	R5545855
Prep/Analysis Dates					08-AUG-21	08-AUG-21	R5545855
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		08-AUG-21	
F1-BTEX	<10		10	mg/kg		08-AUG-21	
F2 (C10-C16)	<20		20	mg/kg		08-AUG-21	
F3 (C16-C34)	<20		20	mg/kg		08-AUG-21	
F4 (C34-C50)	<20		20	mg/kg		08-AUG-21	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		08-AUG-21	
Miscellaneous Parameters							
% Moisture	10.8		0.25	%		06-AUG-21	R5545828
L2622938-2 EX19-21-2							
Sampled By: CLIENT on 30-JUL-21							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	30-JUL-21	08-AUG-21	R5543914
Toluene	0.100		0.050	mg/kg	30-JUL-21	08-AUG-21	R5543914
Ethylbenzene	<0.010		0.010	mg/kg	30-JUL-21	08-AUG-21	R5543914
Xylenes	<0.10		0.10	mg/kg	30-JUL-21	08-AUG-21	R5543914
m+p-Xylene	<0.050		0.050	mg/kg	30-JUL-21	08-AUG-21	R5543914
o-Xylene	<0.050		0.050	mg/kg	30-JUL-21	08-AUG-21	R5543914
Surrogate: 1,4-Difluorobenzene (SS)	96.1		70-130	%	30-JUL-21	08-AUG-21	R5543914
Surrogate: 4-Bromofluorobenzene (SS)	97.7		70-130	%	30-JUL-21	08-AUG-21	R5543914
Surrogate: 3,4-Dichlorotoluene (SS)	89.1		70-130	%	30-JUL-21	08-AUG-21	R5543914
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	81.6		70-130	%	08-AUG-21	08-AUG-21	R5545855
Chrom. to baseline at nC50	YES				08-AUG-21	08-AUG-21	R5545855
Prep/Analysis Dates					08-AUG-21	08-AUG-21	R5545855
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		08-AUG-21	
F1-BTEX	<10		10	mg/kg		08-AUG-21	
F2 (C10-C16)	<20		20	mg/kg		08-AUG-21	
F3 (C16-C34)	<20		20	mg/kg		08-AUG-21	
F4 (C34-C50)	<20		20	mg/kg		08-AUG-21	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		08-AUG-21	
Miscellaneous Parameters							
% Moisture	9.99		0.25	%		06-AUG-21	R5545828

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2622938-3 EX19-21-4							
Sampled By: CLIENT on 30-JUL-21							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	30-JUL-21	08-AUG-21	R5543914
Toluene	0.130		0.050	mg/kg	30-JUL-21	08-AUG-21	R5543914
Ethylbenzene	<0.010		0.010	mg/kg	30-JUL-21	08-AUG-21	R5543914
Xylenes	<0.10		0.10	mg/kg	30-JUL-21	08-AUG-21	R5543914
m+p-Xylene	<0.050		0.050	mg/kg	30-JUL-21	08-AUG-21	R5543914
o-Xylene	<0.050		0.050	mg/kg	30-JUL-21	08-AUG-21	R5543914
Surrogate: 1,4-Difluorobenzene (SS)	123.3		70-130	%	30-JUL-21	08-AUG-21	R5543914
Surrogate: 4-Bromofluorobenzene (SS)	111.4		70-130	%	30-JUL-21	08-AUG-21	R5543914
Surrogate: 3,4-Dichlorotoluene (SS)	102.6		70-130	%	30-JUL-21	08-AUG-21	R5543914
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	82.4		70-130	%	08-AUG-21	08-AUG-21	R5545855
Chrom. to baseline at nC50	YES				08-AUG-21	08-AUG-21	R5545855
Prep/Analysis Dates					08-AUG-21	08-AUG-21	R5545855
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		08-AUG-21	
F1-BTEX	<10		10	mg/kg		08-AUG-21	
F2 (C10-C16)	<20		20	mg/kg		08-AUG-21	
F3 (C16-C34)	<20		20	mg/kg		08-AUG-21	
F4 (C34-C50)	<20		20	mg/kg		08-AUG-21	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		08-AUG-21	
Miscellaneous Parameters							
% Moisture	9.71		0.25	%		06-AUG-21	R5545828
L2622938-4 EX19-21-6							
Sampled By: CLIENT on 30-JUL-21							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	30-JUL-21	08-AUG-21	R5543914
Toluene	0.379		0.050	mg/kg	30-JUL-21	08-AUG-21	R5543914
Ethylbenzene	<0.010		0.010	mg/kg	30-JUL-21	08-AUG-21	R5543914
Xylenes	<0.10		0.10	mg/kg	30-JUL-21	08-AUG-21	R5543914
m+p-Xylene	<0.050		0.050	mg/kg	30-JUL-21	08-AUG-21	R5543914
o-Xylene	<0.050		0.050	mg/kg	30-JUL-21	08-AUG-21	R5543914
Surrogate: 1,4-Difluorobenzene (SS)	120.3		70-130	%	30-JUL-21	08-AUG-21	R5543914
Surrogate: 4-Bromofluorobenzene (SS)	118.5		70-130	%	30-JUL-21	08-AUG-21	R5543914
Surrogate: 3,4-Dichlorotoluene (SS)	109.1		70-130	%	30-JUL-21	08-AUG-21	R5543914
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	79.9		70-130	%	08-AUG-21	08-AUG-21	R5545855
Chrom. to baseline at nC50	YES				08-AUG-21	08-AUG-21	R5545855
Prep/Analysis Dates					08-AUG-21	08-AUG-21	R5545855
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		08-AUG-21	
F1-BTEX	<10		10	mg/kg		08-AUG-21	
F2 (C10-C16)	<20		20	mg/kg		08-AUG-21	
F3 (C16-C34)	<20		20	mg/kg		08-AUG-21	
F4 (C34-C50)	<20		20	mg/kg		08-AUG-21	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		08-AUG-21	
Miscellaneous Parameters							
% Moisture	10.2		0.25	%		06-AUG-21	R5545828

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2622938-5 EX19-21-8							
Sampled By: CLIENT on 30-JUL-21							
Matrix: SOIL							
CCME BTEX, F1 TO F4							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	30-JUL-21	08-AUG-21	R5543914
Toluene	<0.050		0.050	mg/kg	30-JUL-21	08-AUG-21	R5543914
Ethylbenzene	<0.010		0.010	mg/kg	30-JUL-21	08-AUG-21	R5543914
Xylenes	<0.10		0.10	mg/kg	30-JUL-21	08-AUG-21	R5543914
m+p-Xylene	<0.050		0.050	mg/kg	30-JUL-21	08-AUG-21	R5543914
o-Xylene	<0.050		0.050	mg/kg	30-JUL-21	08-AUG-21	R5543914
Surrogate: 1,4-Difluorobenzene (SS)	101.3		70-130	%	30-JUL-21	08-AUG-21	R5543914
Surrogate: 4-Bromofluorobenzene (SS)	96.7		70-130	%	30-JUL-21	08-AUG-21	R5543914
Surrogate: 3,4-Dichlorotoluene (SS)	92.7		70-130	%	30-JUL-21	08-AUG-21	R5543914
CCME Total Extractable Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	80.3		70-130	%	08-AUG-21	08-AUG-21	R5545855
Chrom. to baseline at nC50	YES				08-AUG-21	08-AUG-21	R5545855
Prep/Analysis Dates					08-AUG-21	08-AUG-21	R5545855
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		08-AUG-21	
F1-BTEX	<10		10	mg/kg		08-AUG-21	
F2 (C10-C16)	<20		20	mg/kg		08-AUG-21	
F3 (C16-C34)	<20		20	mg/kg		08-AUG-21	
F4 (C34-C50)	<20		20	mg/kg		08-AUG-21	
Total Hydrocarbons (C6-C50)	<20		20	mg/kg		08-AUG-21	
Miscellaneous Parameters							
% Moisture	12.4		0.25	%		06-AUG-21	R5545828

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BTXS,F1-MEOH-ED	Soil	BTEX and F1	EPA 8260C/5021A and CWS PHC Tier 1

This analysis involves the extraction of a subsample of the sediment/soil with methanol added in the field at the time of subsampling. The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. BTX Target compound concentrations are measured using mass spectrometry detection. The instrumental portion of F1 analysis is carried out in accordance with the Canada Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method (2001).

ETL-TVH,TEH-CCME-ED	Soil	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F2-4-TMB-ED	Soil	CCME Total Extractable Hydrocarbons	CCME Tier 1

This analysis is carried out in accordance with the "Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method, Canadian Council of Ministers of the Environment" For C10 to C50 hydrocarbons (F2, F3, F4) and gravimetric heavy hydrocarbons (F4G-sg), a subsample of the sediment/soil is extracted with 1:1 hexane:acetone using a rotary extractor. The extract undergoes a silica-gel clean-up to remove polar compounds. F2, F3 & F4 are analyzed by on-column GC/FID, and F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where F4 (C34-C50) and F4G-sg results are reported for a sample, the larger of the reported values is used for comparison against the relevant CCME standard for F4.
7. The gravimetric heavy hydrocarbon results (F4G-sg), cannot be added to the C6 to C50 hydrocarbon results.
8. This method is validated for use.
9. Data from analysis of quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram.

PREP-MOISTURE-ED	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)

The weighed portion of soil is placed in a 105°C oven to dry to a constant weight; the drying time will vary based on the moisture content of the soil. The dried soil weight is then used to calculate % moisture.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
ED	ALS ENVIRONMENTAL - EDMONTON, ALBERTA, CANADA

Chain of Custody Numbers:

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Client: GOLDER ASSOCIATES LTD
16820 107 Ave NW
Edmonton AB T5P 4C3
Contact: Steven Fiddler

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTXS,F1-MEOH-ED	**Soil**							
Batch R5543914								
WG3591932-2 LCS								
Benzene			114.6		%		70-130	08-AUG-21
Toluene			111.9		%		70-130	08-AUG-21
Ethylbenzene			105.0		%		70-130	08-AUG-21
m+p-Xylene			92.7		%		70-130	08-AUG-21
o-Xylene			112.5		%		70-130	08-AUG-21
WG3591932-1 MB								
Benzene			<0.0050		mg/kg		0.005	08-AUG-21
Toluene			<0.050		mg/kg		0.05	08-AUG-21
Ethylbenzene			<0.010		mg/kg		0.01	08-AUG-21
m+p-Xylene			<0.050		mg/kg		0.05	08-AUG-21
o-Xylene			<0.050		mg/kg		0.05	08-AUG-21
Surrogate: 1,4-Difluorobenzene (SS)			109.7		%		70-130	08-AUG-21
Surrogate: 4-Bromofluorobenzene (SS)			100.5		%		70-130	08-AUG-21
Surrogate: 3,4-Dichlorotoluene (SS)			90.4		%		70-130	08-AUG-21
F2-4-TMB-ED	**Soil**							
Batch R5545855								
WG3591588-3 IRM		**ALS PHC RM3**						
F2 (C10-C16)			98.5		%		70-130	06-AUG-21
F3 (C16-C34)			98.4		%		70-130	06-AUG-21
F4 (C34-C50)			94.2		%		70-130	06-AUG-21
WG3591588-2 LCS		**DIESEL/MOTOR OIL**						
F2 (C10-C16)			95.3		%		70-130	06-AUG-21
F3 (C16-C34)			99.0		%		70-130	06-AUG-21
F4 (C34-C50)			96.3		%		70-130	06-AUG-21
WG3591588-1 MB								
F2 (C10-C16)			<20		mg/kg		20	05-AUG-21
F3 (C16-C34)			<20		mg/kg		20	05-AUG-21
F4 (C34-C50)			<20		mg/kg		20	05-AUG-21
Surrogate: 2-Bromobenzotrifluoride			81.7		%		70-130	05-AUG-21
PREP-MOISTURE-ED	**Soil**							
Batch R5545828								
WG3591911-2 LCS								
% Moisture			100.1		%		90-110	06-AUG-21
WG3591911-1 MB								
% Moisture			<0.25		%		0.25	06-AUG-21

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number:

Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)

Quality Control (QC) Report with Report ☑ YES ☐ NO

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax	k.lewis@mandalayresources.com
Email 2	sfiddler@golder.com
Email 3	jmusijowski@golder.com

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax	
Email 2	

Project Information

ALS Account # / Quote #:	Q80711
Job #:	20446521
PO / AFE:	
LSD:	LUPIN MINE
ALS Lab Work Order # (lab use only):	

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	
ALS Contact: Oliver Gregg	Sampler:

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☑ | Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	Lead	Arsenic	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	EX19-21-1	30-Jul-21		Soil	3	X				
	EX19-21-2	"		"	3	X				
	EX19-21-4	"		"	3	X				
	EX19-21-6	"		"	3	X				
	EX19-21-8	"		"	3	X				
	~~EX19-21-10~~									

L2622938-COFC

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human consumption/ use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐		SIF Observations	Yes ☐	No ☐	
Ice Packs ☐	Ice Cubes ☐	Custody seal intact	Yes ☐	No ☐	
Cooling Initiated ☐					

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: M. Sandra	Date: Aug 4 2021	Time: 11:00	Received by:	Date:	Time:	Received by:	Date:	Time:

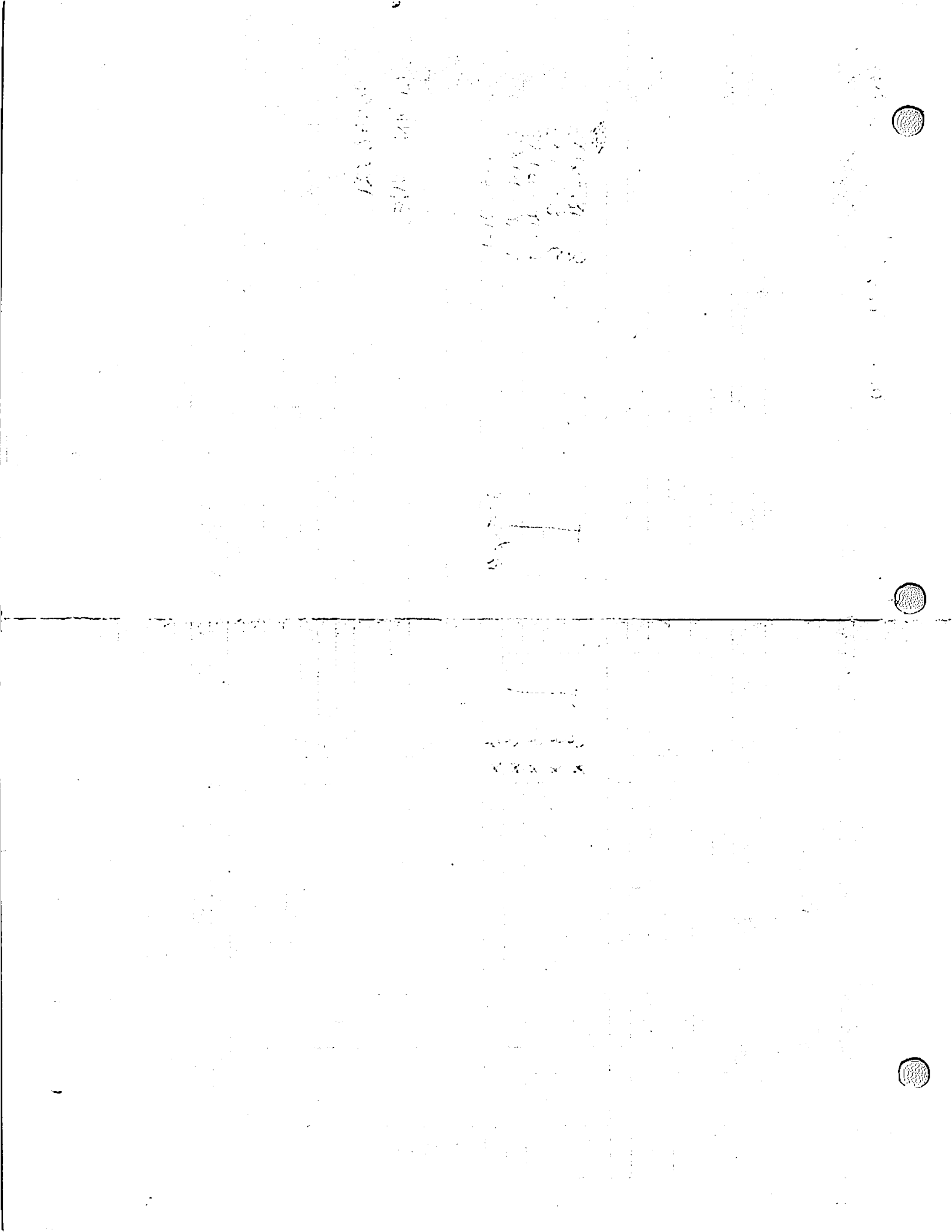
REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCT 2018 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.



GOLDER ASSOCIATES LTD
ATTN: Steven Fiddler
16820 107 Ave NW
Edmonton AB T5P 4C3

Date Received: 04-AUG-21
Report Date: 09-AUG-21 12:35 (MT)
Version: FINAL

Client Phone: 780-483-3499

Certificate of Analysis

Lab Work Order #: L2622944

Project P.O. #: NOT SUBMITTED
Job Reference: 20446521
C of C Numbers:
Legal Site Desc:

Harman Bhullar
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2622944-1 EX16-21-78							
Sampled By: CLIENT on 04-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Ethylbenzene	<0.015		0.015	mg/kg	08-AUG-21	09-AUG-21	R5546503
Toluene	<0.014		0.014	mg/kg	08-AUG-21	09-AUG-21	R5546503
o-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
m+p-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Surrogate: 1,4-Difluorobenzene	99.8		70-130	%	08-AUG-21	09-AUG-21	R5546503
Surrogate: 4-Bromofluorobenzene	93.5		70-130	%	08-AUG-21	09-AUG-21	R5546503
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	08-AUG-21	09-AUG-21	R5546059
Prep/Analysis Dates					08-AUG-21	09-AUG-21	R5546059
Surrogate: 2-Bromobenzotrifluoride	84.3		70-130	%	08-AUG-21	09-AUG-21	R5546059
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		09-AUG-21	
F1-BTEX	<10		10	mg/kg		09-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		09-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		09-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		09-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		09-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	70.2		70-130	%	08-AUG-21	09-AUG-21	R5546510
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		09-AUG-21	
Miscellaneous Parameters							
Moisture	6.26		0.25	%		08-AUG-21	R5546299
L2622944-2 EX16-21-81							
Sampled By: CLIENT on 04-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Ethylbenzene	<0.015		0.015	mg/kg	08-AUG-21	09-AUG-21	R5546503
Toluene	0.100		0.014	mg/kg	08-AUG-21	09-AUG-21	R5546503
o-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
m+p-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Surrogate: 1,4-Difluorobenzene	100.7		70-130	%	08-AUG-21	09-AUG-21	R5546503
Surrogate: 4-Bromofluorobenzene	95.7		70-130	%	08-AUG-21	09-AUG-21	R5546503
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	08-AUG-21	09-AUG-21	R5546059
Prep/Analysis Dates					08-AUG-21	09-AUG-21	R5546059
Surrogate: 2-Bromobenzotrifluoride	85.1		70-130	%	08-AUG-21	09-AUG-21	R5546059
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		09-AUG-21	
F1-BTEX	<10		10	mg/kg		09-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		09-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		09-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		09-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		09-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	86.3		70-130	%	08-AUG-21	09-AUG-21	R5546510
Sum of Xylene Isomer Concentrations							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2622944-2 EX16-21-81							
Sampled By: CLIENT on 04-AUG-21							
Matrix: SOIL							
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		09-AUG-21	
Miscellaneous Parameters							
Moisture	8.53		0.25	%		08-AUG-21	R5546299
L2622944-3 EX16-21-83							
Sampled By: CLIENT on 04-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	0.0095		0.0050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Ethylbenzene	<0.015		0.015	mg/kg	08-AUG-21	09-AUG-21	R5546503
Toluene	0.033		0.014	mg/kg	08-AUG-21	09-AUG-21	R5546503
o-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
m+p-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Surrogate: 1,4-Difluorobenzene	90.0		70-130	%	08-AUG-21	09-AUG-21	R5546503
Surrogate: 4-Bromofluorobenzene	88.7		70-130	%	08-AUG-21	09-AUG-21	R5546503
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	08-AUG-21	09-AUG-21	R5546059
Prep/Analysis Dates					08-AUG-21	09-AUG-21	R5546059
Surrogate: 2-Bromobenzotrifluoride	86.3		70-130	%	08-AUG-21	09-AUG-21	R5546059
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		09-AUG-21	
F1-BTEX	<10		10	mg/kg		09-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		09-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		09-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		09-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		09-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	98.7		70-130	%	08-AUG-21	09-AUG-21	R5546510
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		09-AUG-21	
Miscellaneous Parameters							
Moisture	8.55		0.25	%		08-AUG-21	R5546299
L2622944-4 EX16-21-85							
Sampled By: CLIENT on 04-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Ethylbenzene	<0.015		0.015	mg/kg	08-AUG-21	09-AUG-21	R5546503
Toluene	0.056		0.014	mg/kg	08-AUG-21	09-AUG-21	R5546503
o-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
m+p-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Surrogate: 1,4-Difluorobenzene	98.4		70-130	%	08-AUG-21	09-AUG-21	R5546503
Surrogate: 4-Bromofluorobenzene	100.3		70-130	%	08-AUG-21	09-AUG-21	R5546503
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	08-AUG-21	09-AUG-21	R5546059
Prep/Analysis Dates					08-AUG-21	09-AUG-21	R5546059
Surrogate: 2-Bromobenzotrifluoride	85.1		70-130	%	08-AUG-21	09-AUG-21	R5546059
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		09-AUG-21	
F1-BTEX	<10		10	mg/kg		09-AUG-21	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2622944-4 EX16-21-85							
Sampled By: CLIENT on 04-AUG-21							
Matrix: SOIL							
CCME Total Hydrocarbons							
F2 (C10-C16)	<25		25	mg/kg		09-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		09-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		09-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		09-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	71.4		70-130	%	08-AUG-21	09-AUG-21	R5546510
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		09-AUG-21	
Miscellaneous Parameters							
Moisture	7.71		0.25	%		08-AUG-21	R5546299
L2622944-5 EX16-21-87							
Sampled By: CLIENT on 04-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Ethylbenzene	<0.015		0.015	mg/kg	08-AUG-21	09-AUG-21	R5546503
Toluene	<0.014		0.014	mg/kg	08-AUG-21	09-AUG-21	R5546503
o-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
m+p-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Surrogate: 1,4-Difluorobenzene	91.8		70-130	%	08-AUG-21	09-AUG-21	R5546503
Surrogate: 4-Bromofluorobenzene	98.0		70-130	%	08-AUG-21	09-AUG-21	R5546503
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	08-AUG-21	09-AUG-21	R5546059
Prep/Analysis Dates					08-AUG-21	09-AUG-21	R5546059
Surrogate: 2-Bromobenzotrifluoride	82.8		70-130	%	08-AUG-21	09-AUG-21	R5546059
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		09-AUG-21	
F1-BTEX	<10		10	mg/kg		09-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		09-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		09-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		09-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		09-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	79.6		70-130	%	08-AUG-21	09-AUG-21	R5546510
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		09-AUG-21	
Miscellaneous Parameters							
Moisture	6.45		0.25	%		08-AUG-21	R5546299
L2622944-6 EX16-21-89							
Sampled By: CLIENT on 04-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Ethylbenzene	<0.015		0.015	mg/kg	08-AUG-21	09-AUG-21	R5546503
Toluene	0.049		0.014	mg/kg	08-AUG-21	09-AUG-21	R5546503
o-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
m+p-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Surrogate: 1,4-Difluorobenzene	107.2		70-130	%	08-AUG-21	09-AUG-21	R5546503
Surrogate: 4-Bromofluorobenzene	106.2		70-130	%	08-AUG-21	09-AUG-21	R5546503

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2622944-6 EX16-21-89							
Sampled By: CLIENT on 04-AUG-21							
Matrix: SOIL							
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	08-AUG-21	09-AUG-21	R5546059
Prep/Analysis Dates					08-AUG-21	09-AUG-21	R5546059
Surrogate: 2-Bromobenzotrifluoride	87.7		70-130	%	08-AUG-21	09-AUG-21	R5546059
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		09-AUG-21	
F1-BTEX	<10		10	mg/kg		09-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		09-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		09-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		09-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		09-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	116.2		70-130	%	08-AUG-21	09-AUG-21	R5546510
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		09-AUG-21	
Miscellaneous Parameters							
Moisture	6.32		0.25	%		08-AUG-21	R5546299
L2622944-7 EX16-21-93							
Sampled By: CLIENT on 04-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Ethylbenzene	<0.015		0.015	mg/kg	08-AUG-21	09-AUG-21	R5546503
Toluene	0.037		0.014	mg/kg	08-AUG-21	09-AUG-21	R5546503
o-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
m+p-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Surrogate: 1,4-Difluorobenzene	112.0		70-130	%	08-AUG-21	09-AUG-21	R5546503
Surrogate: 4-Bromofluorobenzene	100.0		70-130	%	08-AUG-21	09-AUG-21	R5546503
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	08-AUG-21	09-AUG-21	R5546059
Prep/Analysis Dates					08-AUG-21	09-AUG-21	R5546059
Surrogate: 2-Bromobenzotrifluoride	84.3		70-130	%	08-AUG-21	09-AUG-21	R5546059
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		09-AUG-21	
F1-BTEX	<10		10	mg/kg		09-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		09-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		09-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		09-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		09-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	110.3		70-130	%	08-AUG-21	09-AUG-21	R5546510
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		09-AUG-21	
Miscellaneous Parameters							
Moisture	5.91		0.25	%		08-AUG-21	R5546299
L2622944-8 EX16-21-95							
Sampled By: CLIENT on 04-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	08-AUG-21	09-AUG-21	R5546503

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2622944-8 EX16-21-95							
Sampled By: CLIENT on 04-AUG-21							
Matrix: SOIL							
BTEX and Styrene							
Ethylbenzene	<0.015		0.015	mg/kg	08-AUG-21	09-AUG-21	R5546503
Toluene	<0.014		0.014	mg/kg	08-AUG-21	09-AUG-21	R5546503
o-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
m+p-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Surrogate: 1,4-Difluorobenzene	96.4		70-130	%	08-AUG-21	09-AUG-21	R5546503
Surrogate: 4-Bromofluorobenzene	97.5		70-130	%	08-AUG-21	09-AUG-21	R5546503
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	08-AUG-21	09-AUG-21	R5546059
Prep/Analysis Dates					08-AUG-21	09-AUG-21	R5546059
Surrogate: 2-Bromobenzotrifluoride	84.0		70-130	%	08-AUG-21	09-AUG-21	R5546059
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		09-AUG-21	
F1-BTEX	<10		10	mg/kg		09-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		09-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		09-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		09-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		09-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	80.8		70-130	%	08-AUG-21	09-AUG-21	R5546510
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		09-AUG-21	
Miscellaneous Parameters							
Moisture	9.12		0.25	%		08-AUG-21	R5546299
L2622944-9 EX16-21-89D							
Sampled By: CLIENT on 04-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Ethylbenzene	<0.015		0.015	mg/kg	08-AUG-21	09-AUG-21	R5546503
Toluene	0.073		0.014	mg/kg	08-AUG-21	09-AUG-21	R5546503
o-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
m+p-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Surrogate: 1,4-Difluorobenzene	123.5		70-130	%	08-AUG-21	09-AUG-21	R5546503
Surrogate: 4-Bromofluorobenzene	126.2		70-130	%	08-AUG-21	09-AUG-21	R5546503
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	08-AUG-21	09-AUG-21	R5546059
Prep/Analysis Dates					08-AUG-21	09-AUG-21	R5546059
Surrogate: 2-Bromobenzotrifluoride	83.3		70-130	%	08-AUG-21	09-AUG-21	R5546059
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		09-AUG-21	
F1-BTEX	<10		10	mg/kg		09-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		09-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		09-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		09-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		09-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	104.8		70-130	%	08-AUG-21	09-AUG-21	R5546510
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		09-AUG-21	
Miscellaneous Parameters							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2622944-9 EX16-21-89D Sampled By: CLIENT on 04-AUG-21 Matrix: SOIL							
Moisture	5.88		0.25	%		08-AUG-21	R5546299

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BTXS-MEOH-HS-MS-CL	Soil	BTEX and Styrene	EPA 8260C/5021A

The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. Target compound concentrations are measured using mass spectrometry detection.

F1-4-CALC-CL	Soil	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-MEOH-HS-FID-CL	Soil	F1(C6-C10)	CWS PHC Tier 1

The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. The F1 fraction concentration is measured using flame ionization detection.

F2-4-TMB-H/A-FID-CL	Soil	CCME F2-4 Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

This analysis is carried out in accordance with the "Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method, Canadian Council of Ministers of the Environment, December 2001." For C10 to C50 hydrocarbons (F2, F3, F4) and gravimetric heavy hydrocarbons (F4G-sg), a subsample of the sediment/soil is extracted with 1:1 hexane:acetone using a rotary extractor. The extract undergoes a silica-gel clean-up to remove polar compounds. F2, F3 & F4 are analyzed by on-column GC/FID, and F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where F4 (C34-C50) and F4G-sg results are reported for a sample, the larger of the reported values is used for comparison against the relevant CCME standard for F4.
7. The gravimetric heavy hydrocarbon results (F4G-sg), cannot be added to the C6 to C50 hydrocarbon results.
8. This method is validated for use.
9. Data from analysis of quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram.

MOISTURE-CL	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)

This analysis is carried out gravimetrically by drying the sample at 105 C

XYLENES-SUM-CALC-CL	Soil	Sum of Xylene Isomer Concentrations	CALCULATED RESULT

Total xylenes represents the sum of o-xylene and m&p-xylene.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
CL	ALS ENVIRONMENTAL - CALGARY, ALBERTA, CANADA

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Client: GOLDER ASSOCIATES LTD
16820 107 Ave NW
Edmonton AB T5P 4C3
Contact: Steven Fiddler

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTXS-MEOH-HS-MS-CL	**Soil**							
Batch R5546503								
WG3592612-3 DUP		**L2622944-1**						
Benzene		<0.0050	<0.0050	RPD-NA	mg/kg	N/A	30	09-AUG-21
Ethylbenzene		<0.015	<0.015	RPD-NA	mg/kg	N/A	30	09-AUG-21
Toluene		<0.014	<0.014	RPD-NA	mg/kg	N/A	30	09-AUG-21
o-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	09-AUG-21
m+p-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	09-AUG-21
WG3592612-2 LCS								
Benzene			93.8		%		70-130	09-AUG-21
Ethylbenzene			90.5		%		70-130	09-AUG-21
Toluene			101.6		%		70-130	09-AUG-21
o-Xylene			89.6		%		70-130	09-AUG-21
m+p-Xylene			91.2		%		70-130	09-AUG-21
WG3592612-1 MB								
Benzene			<0.0050		mg/kg		0.005	09-AUG-21
Ethylbenzene			<0.015		mg/kg		0.015	09-AUG-21
Toluene			<0.014		mg/kg		0.014	09-AUG-21
o-Xylene			<0.050		mg/kg		0.05	09-AUG-21
m+p-Xylene			<0.050		mg/kg		0.05	09-AUG-21
Surrogate: 1,4-Difluorobenzene			103.1		%		70-130	09-AUG-21
Surrogate: 4-Bromofluorobenzene			95.1		%		70-130	09-AUG-21
F1-MEOH-HS-FID-CL	**Soil**							
Batch R5546510								
WG3592612-3 DUP		**L2622944-1**						
F1(C6-C10)		<10	<10	RPD-NA	mg/kg	N/A	30	09-AUG-21
WG3592612-2 LCS								
F1(C6-C10)			114.2		%		70-130	09-AUG-21
WG3592612-1 MB								
F1(C6-C10)			<10		mg/kg		10	09-AUG-21
Surrogate: 3,4-Dichlorotoluene			113.2		%		70-130	09-AUG-21
F2-4-TMB-H/A-FID-CL	**Soil**							
Batch R5546059								
WG3592614-4 DUP		**L2622944-1**						
F2: (C10-C16)		<25	<25	RPD-NA	mg/kg	N/A	40	09-AUG-21
F3: (C16-C34)		<50	<50	RPD-NA	mg/kg	N/A	40	09-AUG-21
F4: (C34-C50)		<50	<50	RPD-NA	mg/kg	N/A	40	09-AUG-21
WG3592614-3 IRM		**ALS PHC3 RM**						

Quality Control Report

Workorder: L2622944 Report Date: 09-AUG-21

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-4-TMB-H/A-FID-CL	**Soil**							
Batch R5546059								
WG3592614-3 IRM		**ALS PHC3 RM**						
F2: (C10-C16)			104.5		%		70-130	09-AUG-21
F3: (C16-C34)			101.6		%		70-130	09-AUG-21
F4: (C34-C50)			94.8		%		70-130	09-AUG-21
WG3592614-2 LCS								
F2: (C10-C16)			99.1		%		70-130	09-AUG-21
F3: (C16-C34)			98.2		%		70-130	09-AUG-21
F4: (C34-C50)			123.0		%		70-130	09-AUG-21
WG3592614-1 MB								
F2: (C10-C16)			<25		mg/kg		25	09-AUG-21
F3: (C16-C34)			<50		mg/kg		50	09-AUG-21
F4: (C34-C50)			<50		mg/kg		50	09-AUG-21
Surrogate: 2-Bromobenzotrifluoride			83.0		%		70-130	09-AUG-21
MOISTURE-CL	**Soil**							
Batch R5546299								
WG3592613-3 DUP		**L2622944-1**						
Moisture		6.26	6.55		%	4.7	20	08-AUG-21
WG3592613-2 LCS								
Moisture			94.3		%		90-110	08-AUG-21
WG3592613-1 MB								
Moisture			<0.25		%		0.25	08-AUG-21

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

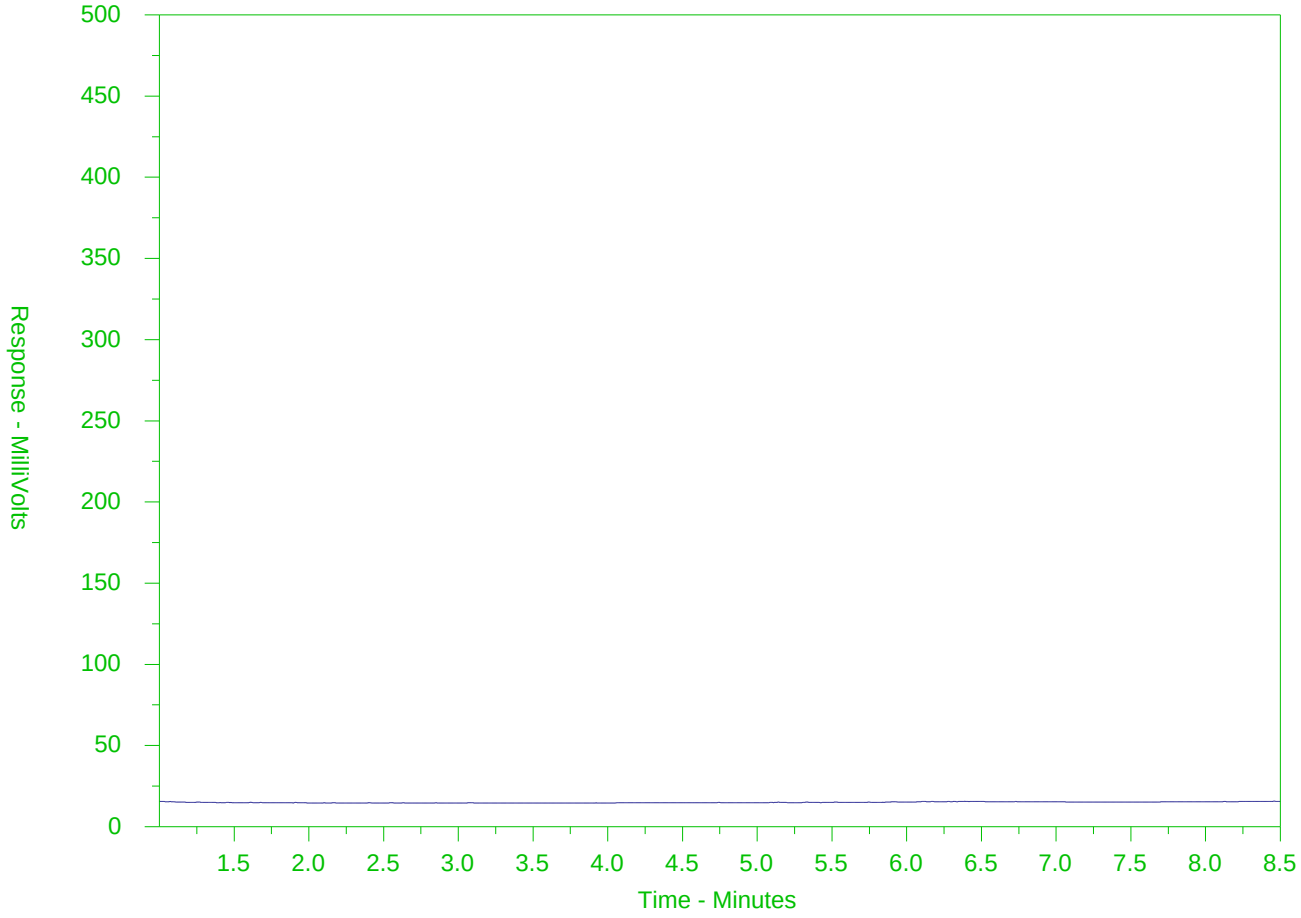
All test results reported with this submission were conducted within ALS recommended hold times.

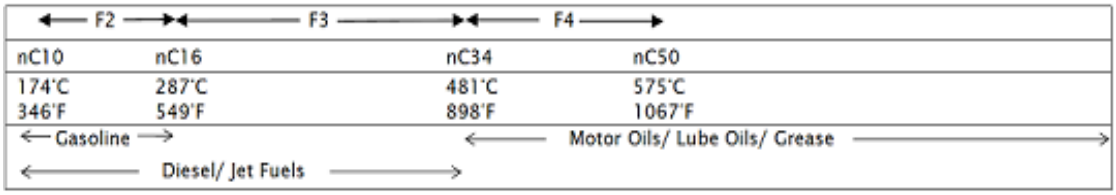
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

ALS Sample ID: L2622944-1
Client Sample ID: EX16-21-78





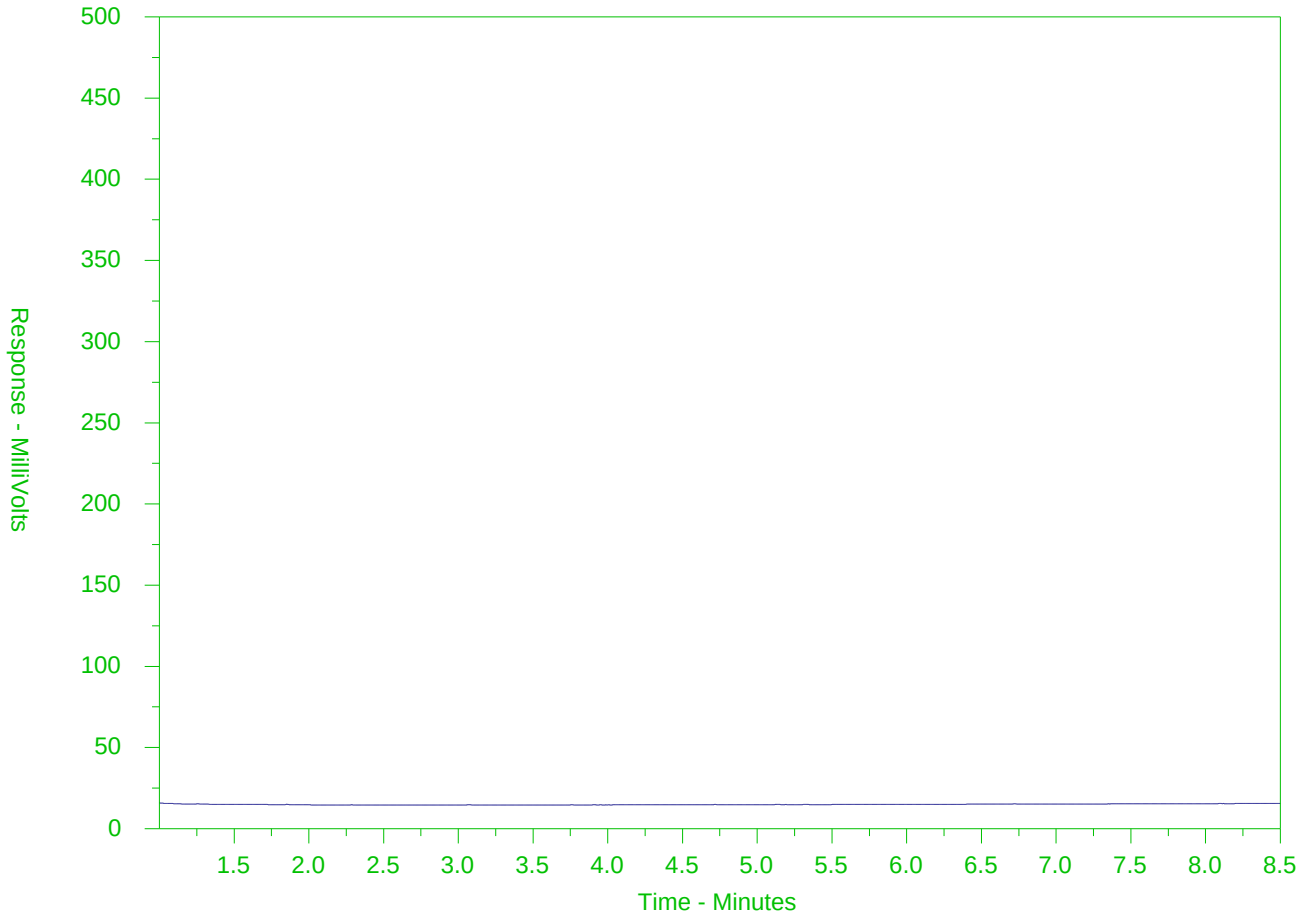
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

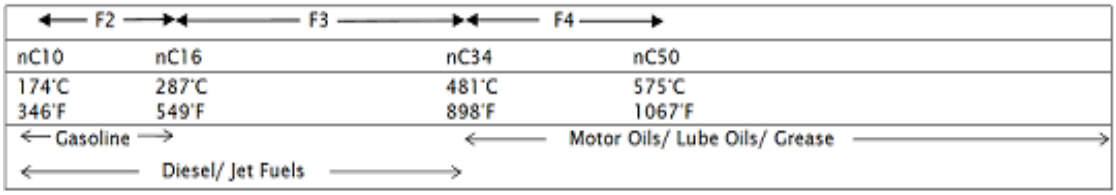
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2622944-2
Client Sample ID: EX16-21-81





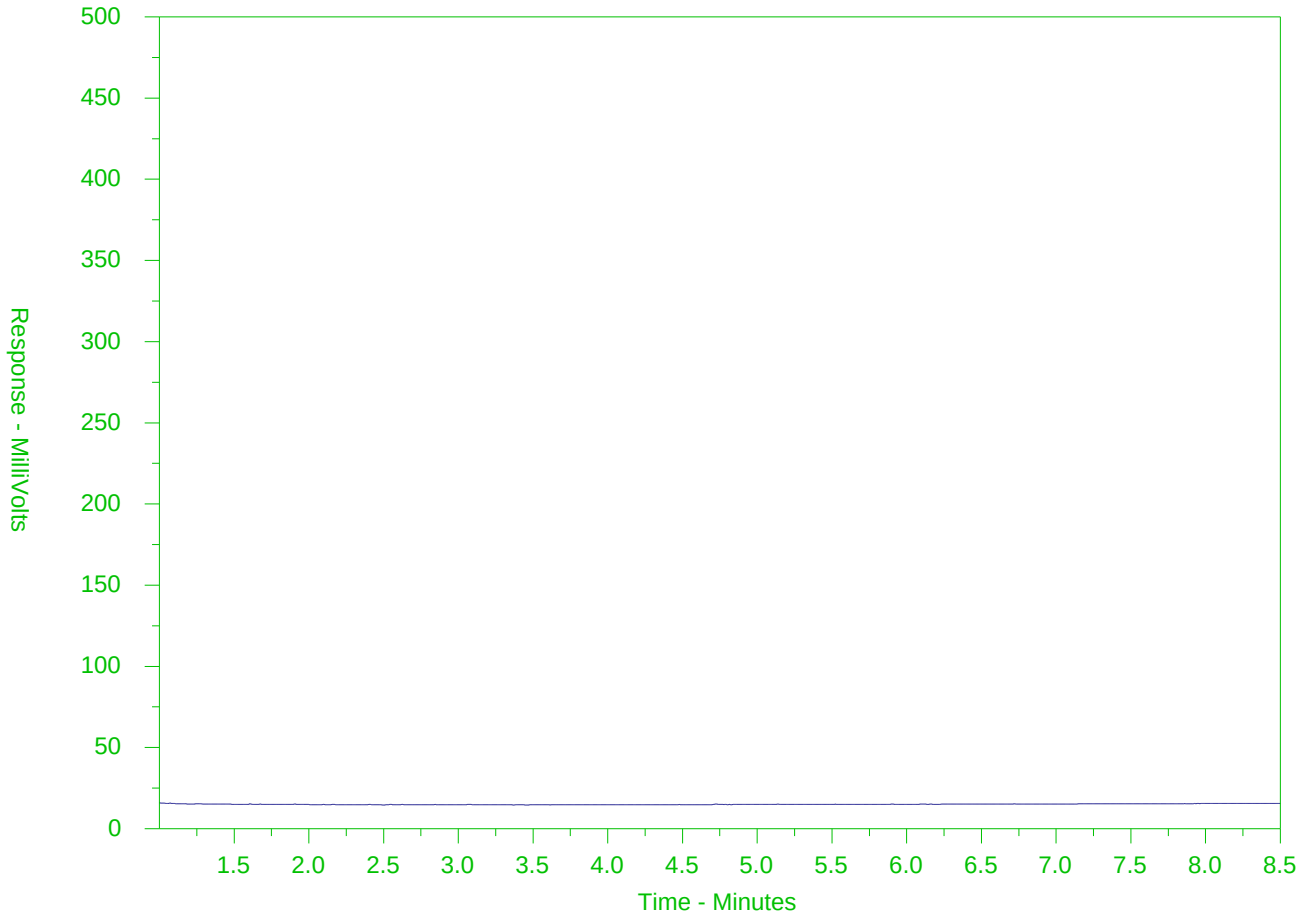
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

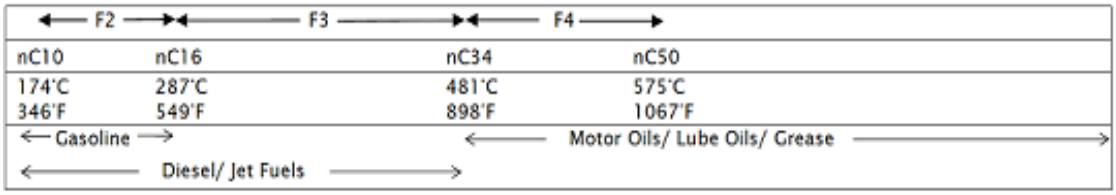
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2622944-3
Client Sample ID: EX16-21-83





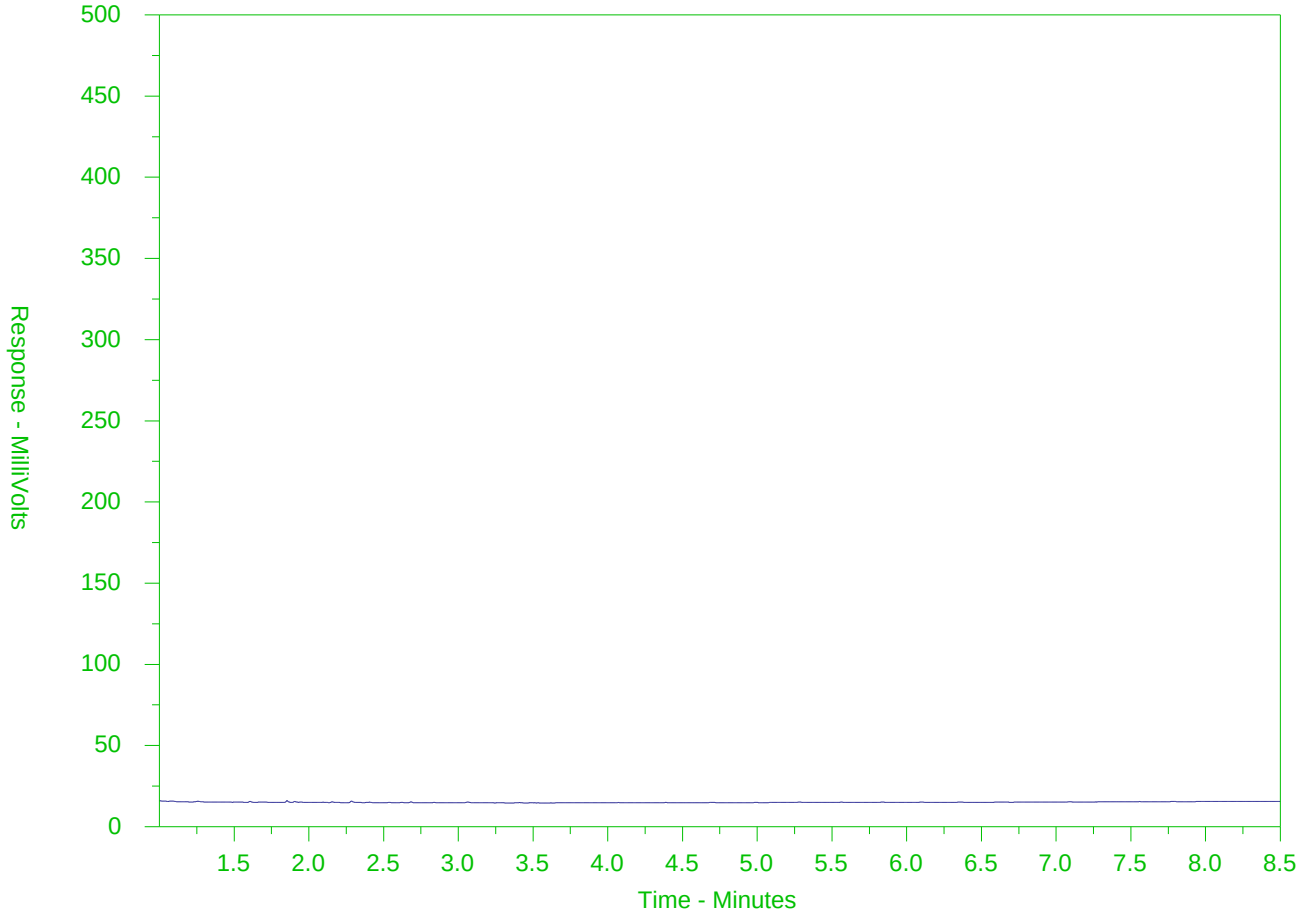
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

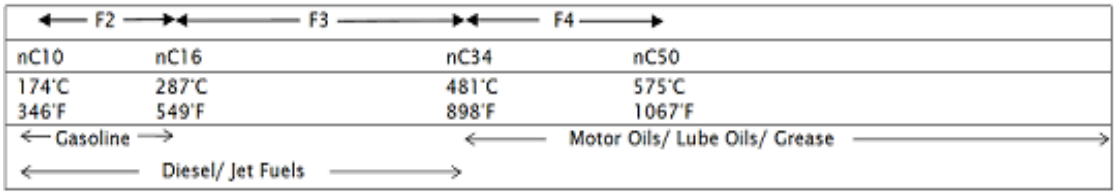
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2622944-4
Client Sample ID: EX16-21-85





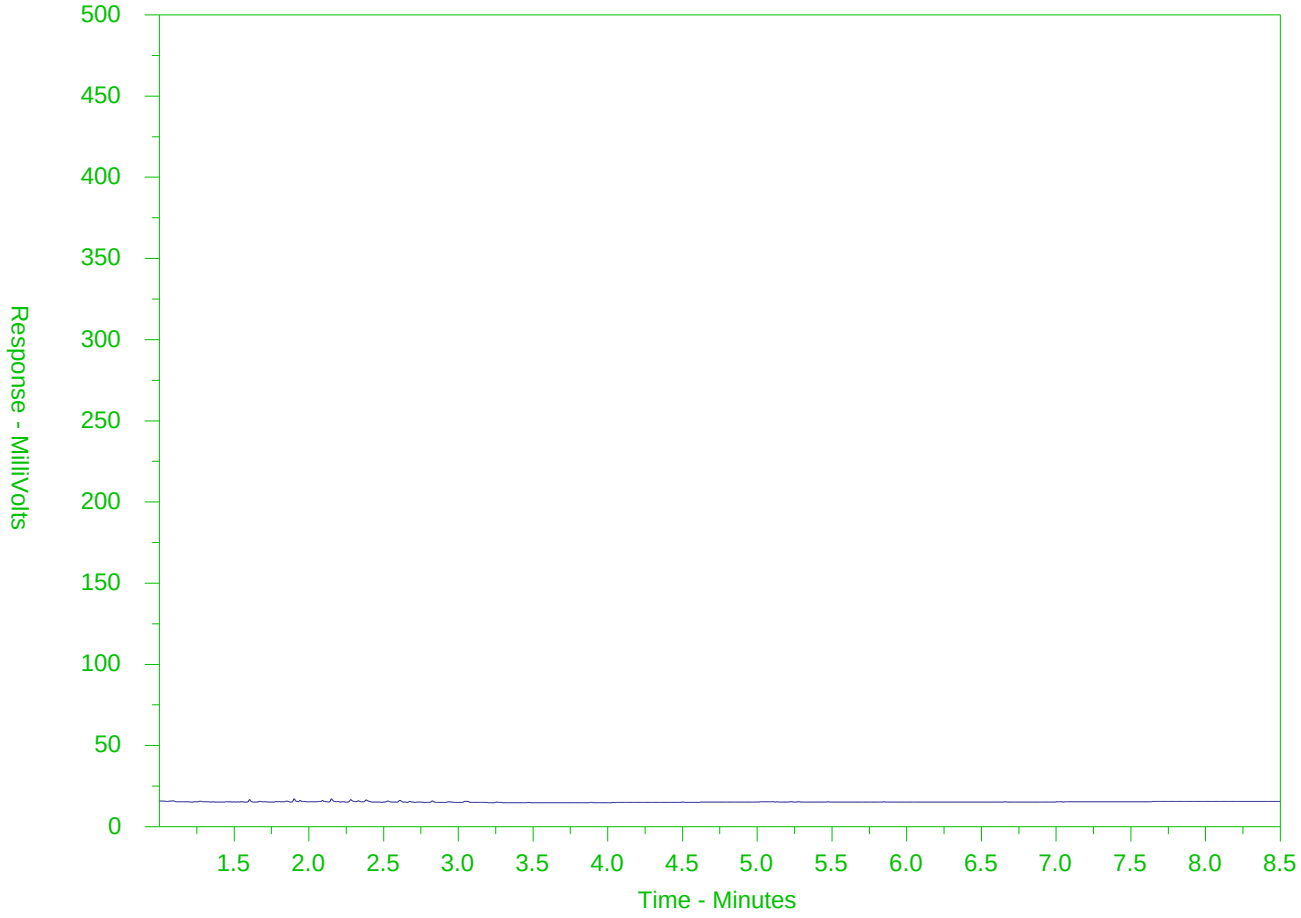
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

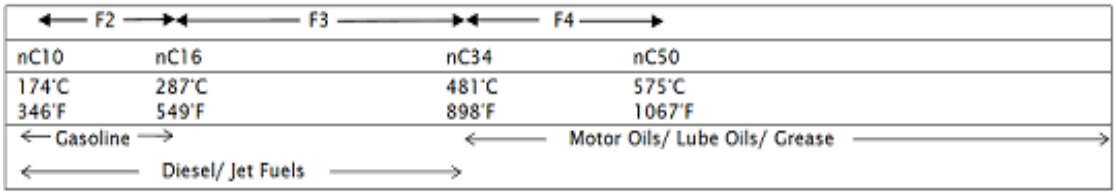
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2622944-5
Client Sample ID: EX16-21-87





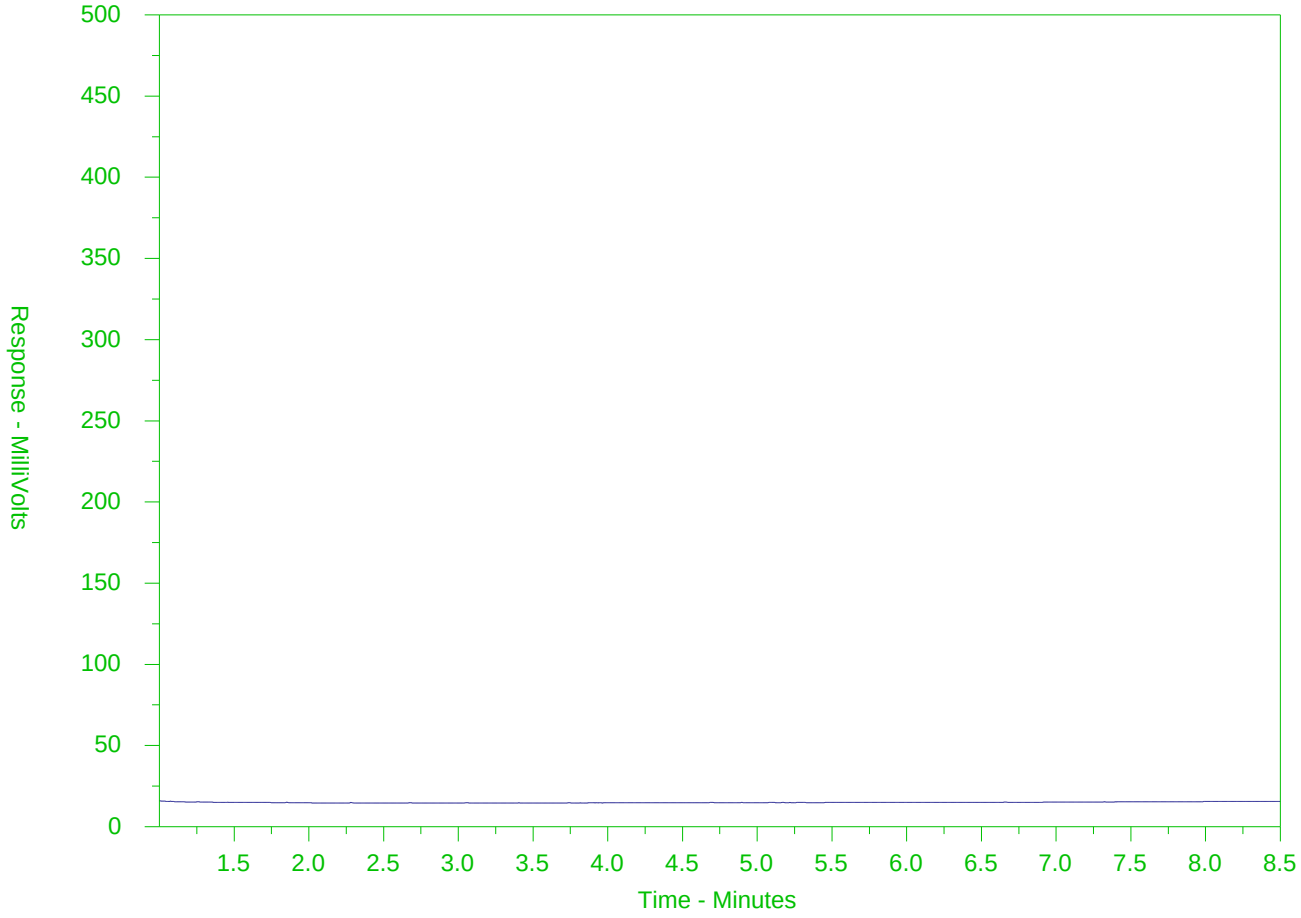
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

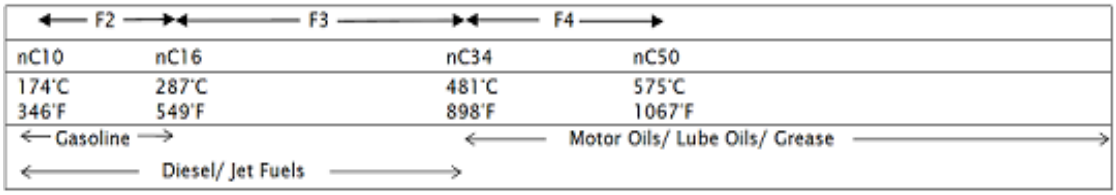
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2622944-6
Client Sample ID: EX16-21-89





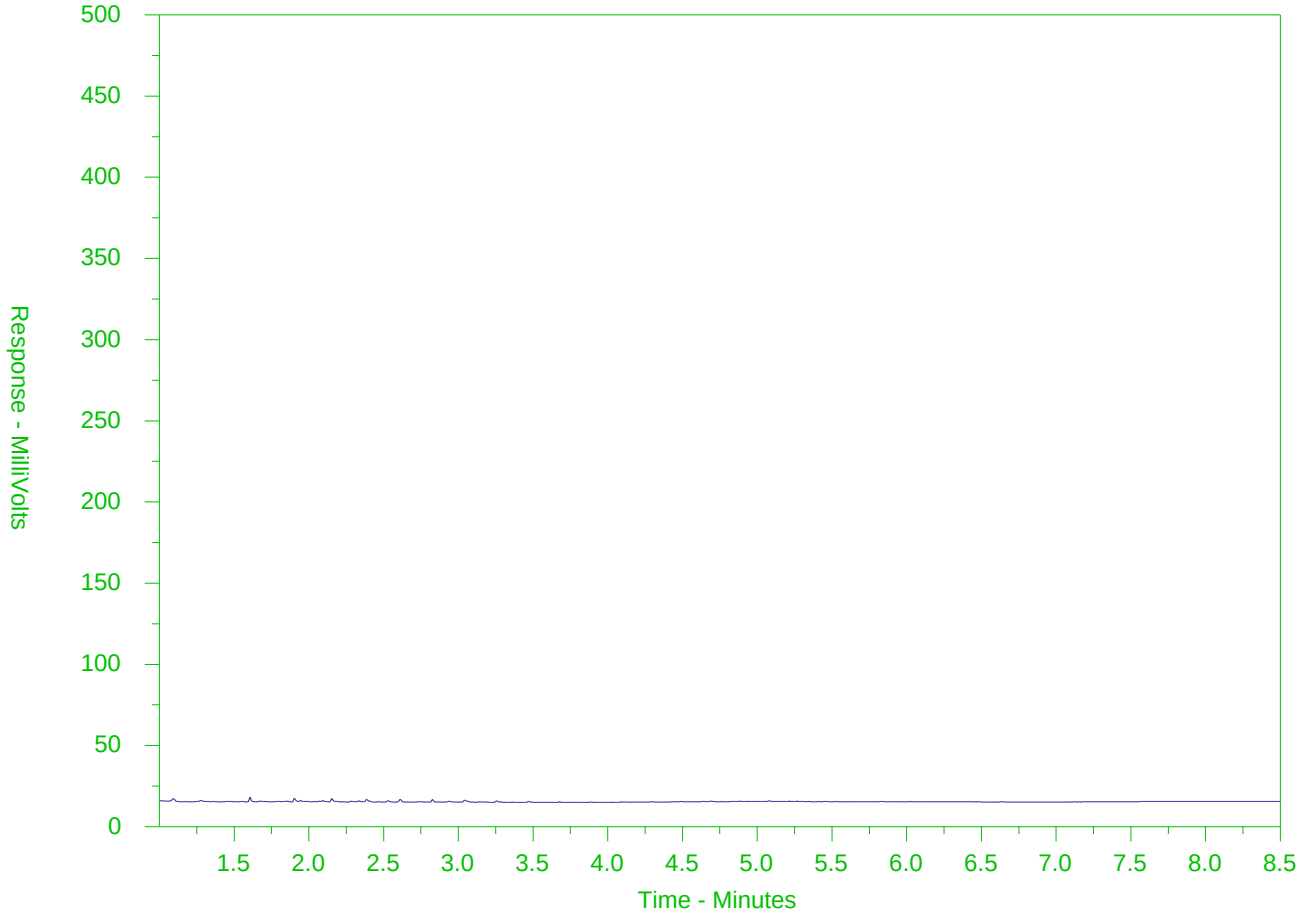
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

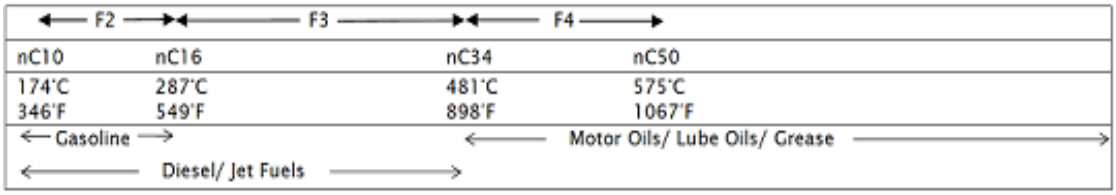
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2622944-7
Client Sample ID: EX16-21-93





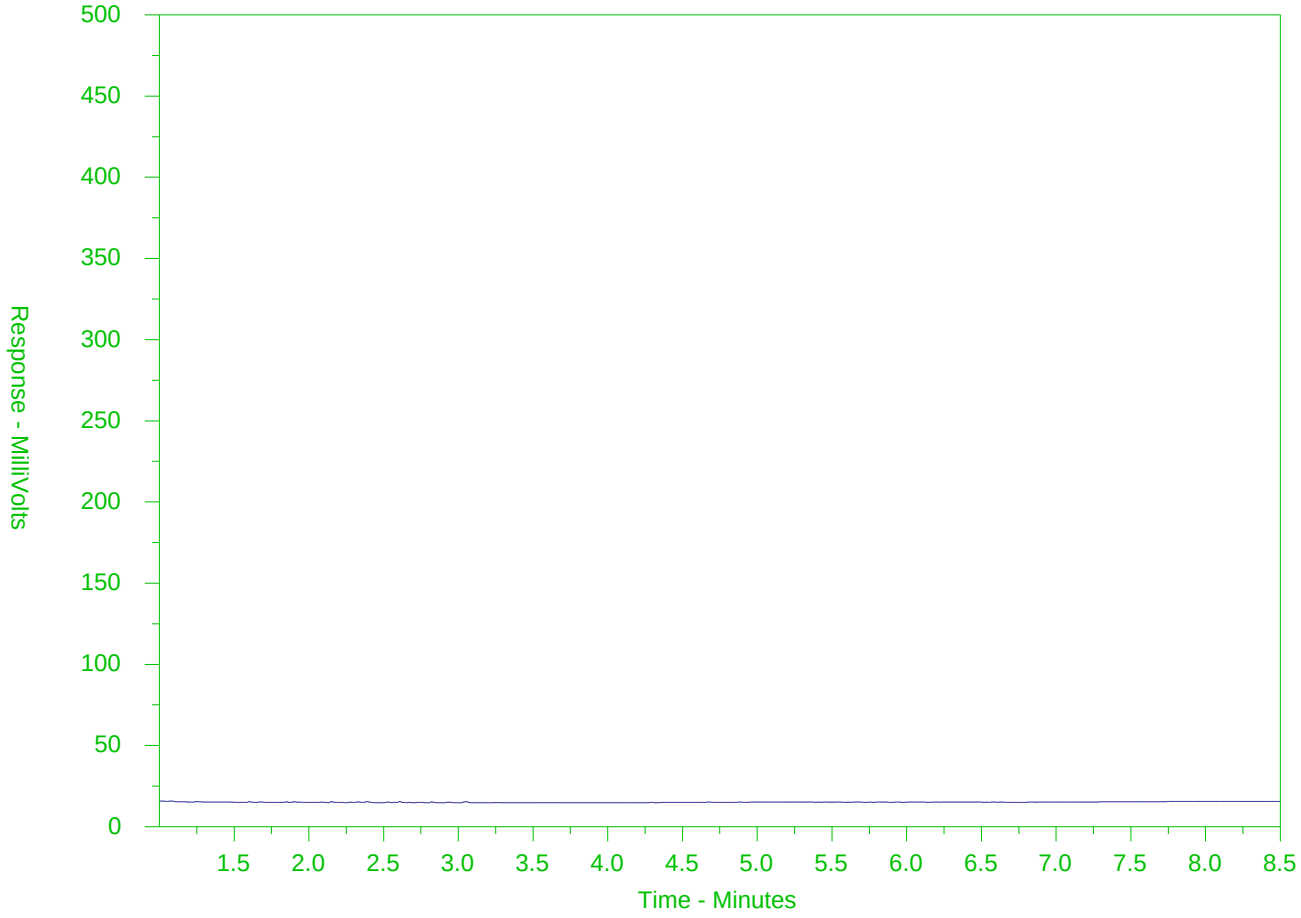
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

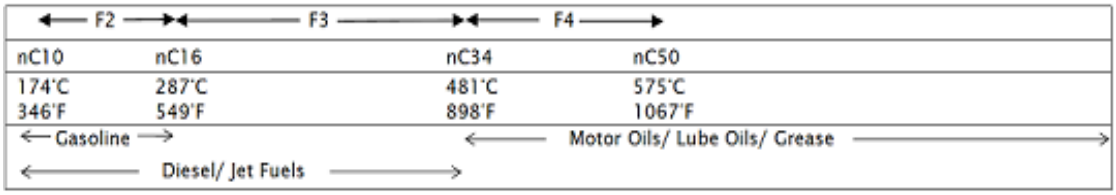
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2622944-8
Client Sample ID: EX16-21-95





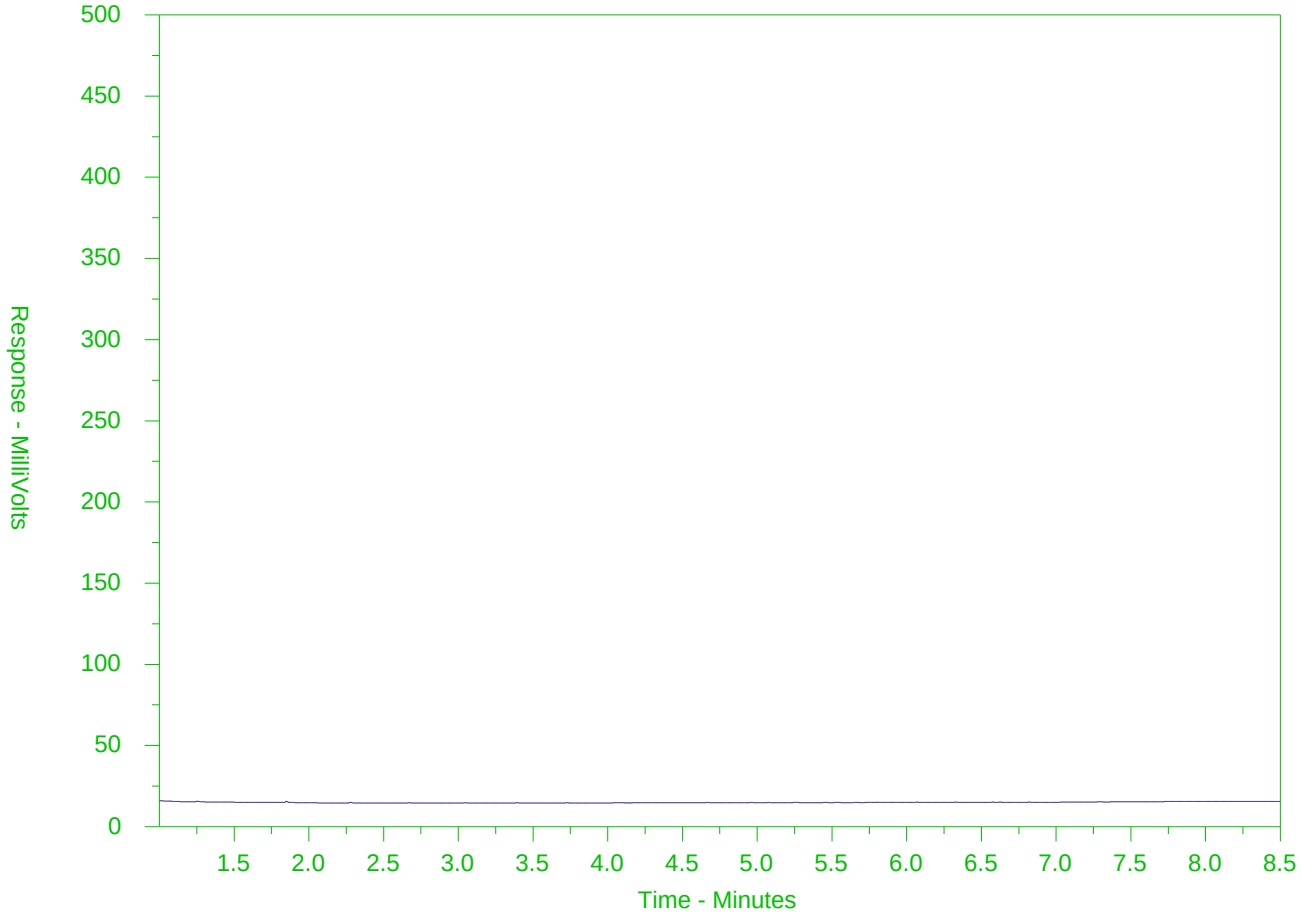
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

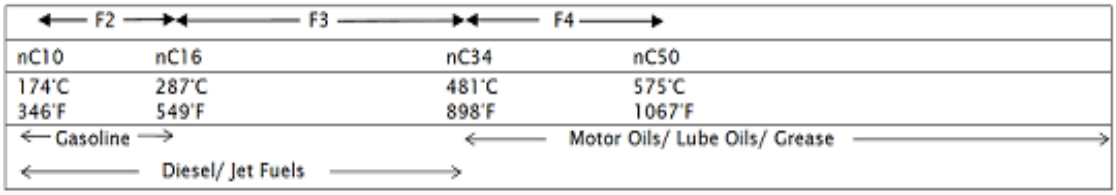
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2622944-9
Client Sample ID: EX16-21-89D





The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number:

Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report ☑ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax: k.lewis@mandalayresources.com
Email 2: sfiddler@golder.com
Email 3: jmusijowski@golder.com

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax:
Email 2:

Project Information

ALS Account # / Quote #: Q80711
Job #: 20446521
PO / AFE:
LSD: LUPIN MINE

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only):

ALS Contact: Oliver Gregg Sampler:

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☐ | Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	Lead	Arsenic	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	EX16-21-78	04-Aug-21		Soil	3	X				
	EX16-21-81					X				
	EX16-21-83					X				
	EX16-21-85					X				
	EX16-21-87					X				
	EX16-21-89					X				
	EX16-21-93					X				
	EX16-21-95					X				
	EX16-21-89D					X				

L2622944-COFC

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human consumption/ use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			

SHIPMENT RELEASE (client use)

Released by:	Date:	Time:
M. Rondeau	AUG 4, 2021	11:00

INITIAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:

FINAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

GOLDER ASSOCIATES LTD
ATTN: Steven Fiddler
16820 107 Ave NW
Edmonton AB T5P 4C3

Date Received: 04-AUG-21
Report Date: 09-AUG-21 17:05 (MT)
Version: FINAL

Client Phone: 780-483-3499

Certificate of Analysis

Lab Work Order #: L2622962

Project P.O. #: NOT SUBMITTED
Job Reference: 20446521
C of C Numbers:
Legal Site Desc: LUPIN MINE

Harman Bhullar
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2622962-1 EX15-21-01							
Sampled By: CLIENT on 04-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	0.0457		0.0050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Ethylbenzene	0.030		0.015	mg/kg	08-AUG-21	09-AUG-21	R5546503
Toluene	0.056		0.014	mg/kg	08-AUG-21	09-AUG-21	R5546503
o-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
m+p-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Surrogate: 1,4-Difluorobenzene	91.3		70-130	%	08-AUG-21	09-AUG-21	R5546503
Surrogate: 4-Bromofluorobenzene	98.9		70-130	%	08-AUG-21	09-AUG-21	R5546503
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	08-AUG-21	09-AUG-21	R5546059
Prep/Analysis Dates					08-AUG-21	09-AUG-21	R5546059
Surrogate: 2-Bromobenzotrifluoride	84.0		70-130	%	08-AUG-21	09-AUG-21	R5546059
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		09-AUG-21	
F1-BTEX	<10		10	mg/kg		09-AUG-21	
F2 (C10-C16)	261		25	mg/kg		09-AUG-21	
F3 (C16-C34)	642		50	mg/kg		09-AUG-21	
F4 (C34-C50)	222		50	mg/kg		09-AUG-21	
Total Hydrocarbons (C6-C50)	1130		50	mg/kg		09-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	84.2		70-130	%	08-AUG-21	09-AUG-21	R5546510
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		09-AUG-21	
Individual Metal in Soil							
Metals in Soil by CRC ICPMS							
Lead (Pb)	11.2		0.50	mg/kg	09-AUG-21	09-AUG-21	R5546923
Miscellaneous Parameters							
Moisture	7.05		0.25	%		08-AUG-21	R5546300
L2622962-2 EX15-21-03							
Sampled By: CLIENT on 04-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	0.0267		0.0050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Ethylbenzene	0.035		0.015	mg/kg	08-AUG-21	09-AUG-21	R5546503
Toluene	0.494		0.014	mg/kg	08-AUG-21	09-AUG-21	R5546503
o-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
m+p-Xylene	0.064		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Surrogate: 1,4-Difluorobenzene	101.0		70-130	%	08-AUG-21	09-AUG-21	R5546503
Surrogate: 4-Bromofluorobenzene	113.5		70-130	%	08-AUG-21	09-AUG-21	R5546503
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	08-AUG-21	09-AUG-21	R5546059
Prep/Analysis Dates					08-AUG-21	09-AUG-21	R5546059
Surrogate: 2-Bromobenzotrifluoride	78.3		70-130	%	08-AUG-21	09-AUG-21	R5546059
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		09-AUG-21	
F1-BTEX	<10		10	mg/kg		09-AUG-21	
F2 (C10-C16)	39		25	mg/kg		09-AUG-21	
F3 (C16-C34)	352		50	mg/kg		09-AUG-21	
F4 (C34-C50)	150		50	mg/kg		09-AUG-21	
Total Hydrocarbons (C6-C50)	541		50	mg/kg		09-AUG-21	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2622962-2 EX15-21-03							
Sampled By: CLIENT on 04-AUG-21							
Matrix: SOIL							
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	98.8		70-130	%	08-AUG-21	09-AUG-21	R5546510
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		09-AUG-21	
Individual Metal in Soil							
Metals in Soil by CRC ICPMS							
Lead (Pb)	73.1		0.50	mg/kg	09-AUG-21	09-AUG-21	R5546923
Miscellaneous Parameters							
Moisture	17.2		0.25	%		08-AUG-21	R5546300
L2622962-3 EX15-21-38							
Sampled By: CLIENT on 04-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	0.0105		0.0050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Ethylbenzene	<0.015		0.015	mg/kg	08-AUG-21	09-AUG-21	R5546503
Toluene	0.019		0.014	mg/kg	08-AUG-21	09-AUG-21	R5546503
o-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
m+p-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Surrogate: 1,4-Difluorobenzene	94.3		70-130	%	08-AUG-21	09-AUG-21	R5546503
Surrogate: 4-Bromofluorobenzene	105.1		70-130	%	08-AUG-21	09-AUG-21	R5546503
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	08-AUG-21	09-AUG-21	R5546059
Prep/Analysis Dates					08-AUG-21	09-AUG-21	R5546059
Surrogate: 2-Bromobenzotrifluoride	87.6		70-130	%	08-AUG-21	09-AUG-21	R5546059
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		09-AUG-21	
F1-BTEX	<10		10	mg/kg		09-AUG-21	
F2 (C10-C16)	664		25	mg/kg		09-AUG-21	
F3 (C16-C34)	879		50	mg/kg		09-AUG-21	
F4 (C34-C50)	194		50	mg/kg		09-AUG-21	
Total Hydrocarbons (C6-C50)	1740		50	mg/kg		09-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	99.4		70-130	%	08-AUG-21	09-AUG-21	R5546510
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		09-AUG-21	
Individual Metal in Soil							
Metals in Soil by CRC ICPMS							
Lead (Pb)	52.7		0.50	mg/kg	09-AUG-21	09-AUG-21	R5546923
Miscellaneous Parameters							
Moisture	13.5		0.25	%		08-AUG-21	R5546300
L2622962-4 EX15-21-12							
Sampled By: CLIENT on 04-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	0.0176		0.0050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Ethylbenzene	0.019		0.015	mg/kg	08-AUG-21	09-AUG-21	R5546503
Toluene	0.067		0.014	mg/kg	08-AUG-21	09-AUG-21	R5546503
o-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
m+p-Xylene	0.058		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Surrogate: 1,4-Difluorobenzene	114.8		70-130	%	08-AUG-21	09-AUG-21	R5546503

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2622962-4 EX15-21-12							
Sampled By: CLIENT on 04-AUG-21							
Matrix: SOIL							
BTEX and Styrene							
Surrogate: 4-Bromofluorobenzene	124.7		70-130	%	08-AUG-21	09-AUG-21	R5546503
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	NO			ppm	08-AUG-21	09-AUG-21	R5546059
Prep/Analysis Dates					08-AUG-21	09-AUG-21	R5546059
Surrogate: 2-Bromobenzotrifluoride	83.5		70-130	%	08-AUG-21	09-AUG-21	R5546059
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		09-AUG-21	
F1-BTEX	<10		10	mg/kg		09-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		09-AUG-21	
F3 (C16-C34)	502		50	mg/kg		09-AUG-21	
F4 (C34-C50)	178		50	mg/kg		09-AUG-21	
F4G-SG (GHH-Silica)	630		500	mg/kg		09-AUG-21	
Total Hydrocarbons (C6-C50)	680		50	mg/kg		09-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	70.7		70-130	%	08-AUG-21	09-AUG-21	R5546510
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		09-AUG-21	
Individual Metal in Soil							
Metals in Soil by CRC ICPMS							
Lead (Pb)	51.7		0.50	mg/kg	09-AUG-21	09-AUG-21	R5546923
Miscellaneous Parameters							
Moisture	5.53		0.25	%		08-AUG-21	R5546300
F4G Prep/Analysis Dates					08-AUG-21	09-AUG-21	R5546286
L2622962-5 EX15-21-13							
Sampled By: CLIENT on 04-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	0.0124		0.0050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Ethylbenzene	<0.015		0.015	mg/kg	08-AUG-21	09-AUG-21	R5546503
Toluene	0.031		0.014	mg/kg	08-AUG-21	09-AUG-21	R5546503
o-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
m+p-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Surrogate: 1,4-Difluorobenzene	128.4		70-130	%	08-AUG-21	09-AUG-21	R5546503
Surrogate: 4-Bromofluorobenzene	129.5		70-130	%	08-AUG-21	09-AUG-21	R5546503
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	08-AUG-21	09-AUG-21	R5546059
Prep/Analysis Dates					08-AUG-21	09-AUG-21	R5546059
Surrogate: 2-Bromobenzotrifluoride	76.3		70-130	%	08-AUG-21	09-AUG-21	R5546059
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		09-AUG-21	
F1-BTEX	<10		10	mg/kg		09-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		09-AUG-21	
F3 (C16-C34)	269		50	mg/kg		09-AUG-21	
F4 (C34-C50)	74		50	mg/kg		09-AUG-21	
Total Hydrocarbons (C6-C50)	343		50	mg/kg		09-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	70.9		70-130	%	08-AUG-21	09-AUG-21	R5546510
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		09-AUG-21	
Individual Metal in Soil							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2622962-5 EX15-21-13							
Sampled By: CLIENT on 04-AUG-21							
Matrix: SOIL							
Metals in Soil by CRC ICPMS							
Lead (Pb)	25.6		0.50	mg/kg	09-AUG-21	09-AUG-21	R5546923
Miscellaneous Parameters							
Moisture	12.2		0.25	%		08-AUG-21	R5546300
L2622962-6 EX15-21-18							
Sampled By: CLIENT on 04-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	0.0091		0.0050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Ethylbenzene	<0.015		0.015	mg/kg	08-AUG-21	09-AUG-21	R5546503
Toluene	0.052		0.014	mg/kg	08-AUG-21	09-AUG-21	R5546503
o-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
m+p-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Surrogate: 1,4-Difluorobenzene	115.7		70-130	%	08-AUG-21	09-AUG-21	R5546503
Surrogate: 4-Bromofluorobenzene	126.3		70-130	%	08-AUG-21	09-AUG-21	R5546503
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	08-AUG-21	09-AUG-21	R5546059
Prep/Analysis Dates					08-AUG-21	09-AUG-21	R5546059
Surrogate: 2-Bromobenzotrifluoride	78.9		70-130	%	08-AUG-21	09-AUG-21	R5546059
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		09-AUG-21	
F1-BTEX	<10		10	mg/kg		09-AUG-21	
F2 (C10-C16)	117		25	mg/kg		09-AUG-21	
F3 (C16-C34)	406		50	mg/kg		09-AUG-21	
F4 (C34-C50)	52		50	mg/kg		09-AUG-21	
Total Hydrocarbons (C6-C50)	575		50	mg/kg		09-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	80.2		70-130	%	08-AUG-21	09-AUG-21	R5546510
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		09-AUG-21	
Individual Metal in Soil							
Metals in Soil by CRC ICPMS							
Lead (Pb)	69.6		0.50	mg/kg	09-AUG-21	09-AUG-21	R5546923
Miscellaneous Parameters							
Moisture	9.61		0.25	%		08-AUG-21	R5546300
L2622962-7 EX15-21-23							
Sampled By: CLIENT on 04-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Ethylbenzene	<0.015		0.015	mg/kg	08-AUG-21	09-AUG-21	R5546503
Toluene	<0.014		0.014	mg/kg	08-AUG-21	09-AUG-21	R5546503
o-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
m+p-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Surrogate: 1,4-Difluorobenzene	106.6		70-130	%	08-AUG-21	09-AUG-21	R5546503
Surrogate: 4-Bromofluorobenzene	121.5		70-130	%	08-AUG-21	09-AUG-21	R5546503
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	08-AUG-21	09-AUG-21	R5546059
Prep/Analysis Dates					08-AUG-21	09-AUG-21	R5546059
Surrogate: 2-Bromobenzotrifluoride	93.9		70-130	%	08-AUG-21	09-AUG-21	R5546059

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2622962-7 EX15-21-23							
Sampled By: CLIENT on 04-AUG-21							
Matrix: SOIL							
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		09-AUG-21	
F1-BTEX	<10		10	mg/kg		09-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		09-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		09-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		09-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		09-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	97.6		70-130	%	08-AUG-21	09-AUG-21	R5546510
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		09-AUG-21	
Individual Metal in Soil							
Metals in Soil by CRC ICPMS							
Lead (Pb)	1.69		0.50	mg/kg	09-AUG-21	09-AUG-21	R5546923
Miscellaneous Parameters							
Moisture	2.98		0.25	%		08-AUG-21	R5546300
L2622962-8 EX15-21-31							
Sampled By: CLIENT on 04-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Ethylbenzene	<0.015		0.015	mg/kg	08-AUG-21	09-AUG-21	R5546503
Toluene	<0.014		0.014	mg/kg	08-AUG-21	09-AUG-21	R5546503
o-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
m+p-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Surrogate: 1,4-Difluorobenzene	85.1		70-130	%	08-AUG-21	09-AUG-21	R5546503
Surrogate: 4-Bromofluorobenzene	92.0		70-130	%	08-AUG-21	09-AUG-21	R5546503
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	08-AUG-21	09-AUG-21	R5546059
Prep/Analysis Dates					08-AUG-21	09-AUG-21	R5546059
Surrogate: 2-Bromobenzotrifluoride	80.9		70-130	%	08-AUG-21	09-AUG-21	R5546059
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		09-AUG-21	
F1-BTEX	<10		10	mg/kg		09-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		09-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		09-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		09-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		09-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	91.7		70-130	%	08-AUG-21	09-AUG-21	R5546510
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		09-AUG-21	
Individual Metal in Soil							
Metals in Soil by CRC ICPMS							
Lead (Pb)	3.96		0.50	mg/kg	09-AUG-21	09-AUG-21	R5546923
Miscellaneous Parameters							
Moisture	7.88		0.25	%		08-AUG-21	R5546300
L2622962-9 EX15-21-32							
Sampled By: CLIENT on 04-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2622962-9 EX15-21-32							
Sampled By: CLIENT on 04-AUG-21							
Matrix: SOIL							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Ethylbenzene	<0.015		0.015	mg/kg	08-AUG-21	09-AUG-21	R5546503
Toluene	0.025		0.014	mg/kg	08-AUG-21	09-AUG-21	R5546503
o-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
m+p-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Surrogate: 1,4-Difluorobenzene	108.4		70-130	%	08-AUG-21	09-AUG-21	R5546503
Surrogate: 4-Bromofluorobenzene	111.1		70-130	%	08-AUG-21	09-AUG-21	R5546503
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	08-AUG-21	09-AUG-21	R5546059
Prep/Analysis Dates					08-AUG-21	09-AUG-21	R5546059
Surrogate: 2-Bromobenzotrifluoride	81.3		70-130	%	08-AUG-21	09-AUG-21	R5546059
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		09-AUG-21	
F1-BTEX	<10		10	mg/kg		09-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		09-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		09-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		09-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		09-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	109.8		70-130	%	08-AUG-21	09-AUG-21	R5546510
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		09-AUG-21	
Individual Metal in Soil							
Metals in Soil by CRC ICPMS							
Lead (Pb)	2.74		0.50	mg/kg	09-AUG-21	09-AUG-21	R5546923
Miscellaneous Parameters							
Moisture	11.3		0.25	%		08-AUG-21	R5546300
L2622962-10 EX15-21-59							
Sampled By: CLIENT on 04-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Ethylbenzene	<0.015		0.015	mg/kg	08-AUG-21	09-AUG-21	R5546503
Toluene	<0.014		0.014	mg/kg	08-AUG-21	09-AUG-21	R5546503
o-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
m+p-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Surrogate: 1,4-Difluorobenzene	103.4		70-130	%	08-AUG-21	09-AUG-21	R5546503
Surrogate: 4-Bromofluorobenzene	109.5		70-130	%	08-AUG-21	09-AUG-21	R5546503
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	08-AUG-21	09-AUG-21	R5546059
Prep/Analysis Dates					08-AUG-21	09-AUG-21	R5546059
Surrogate: 2-Bromobenzotrifluoride	81.7		70-130	%	08-AUG-21	09-AUG-21	R5546059
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		09-AUG-21	
F1-BTEX	<10		10	mg/kg		09-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		09-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		09-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		09-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		09-AUG-21	
F1(C6-C10)							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2622962-10 EX15-21-59							
Sampled By: CLIENT on 04-AUG-21							
Matrix: SOIL							
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	70.0		70-130	%	08-AUG-21	09-AUG-21	R5546510
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		09-AUG-21	
Individual Metal in Soil							
Metals in Soil by CRC ICPMS							
Lead (Pb)	9.53		0.50	mg/kg	09-AUG-21	09-AUG-21	R5546923
Miscellaneous Parameters							
Moisture	4.41		0.25	%		08-AUG-21	R5546300
L2622962-11 EX15-21-61							
Sampled By: CLIENT on 04-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Ethylbenzene	<0.015		0.015	mg/kg	08-AUG-21	09-AUG-21	R5546503
Toluene	<0.014		0.014	mg/kg	08-AUG-21	09-AUG-21	R5546503
o-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
m+p-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Surrogate: 1,4-Difluorobenzene	90.8		70-130	%	08-AUG-21	09-AUG-21	R5546503
Surrogate: 4-Bromofluorobenzene	94.5		70-130	%	08-AUG-21	09-AUG-21	R5546503
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	08-AUG-21	09-AUG-21	R5546059
Prep/Analysis Dates					08-AUG-21	09-AUG-21	R5546059
Surrogate: 2-Bromobenzotrifluoride	82.1		70-130	%	08-AUG-21	09-AUG-21	R5546059
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		09-AUG-21	
F1-BTEX	<10		10	mg/kg		09-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		09-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		09-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		09-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		09-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	71.7		70-130	%	08-AUG-21	09-AUG-21	R5546510
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		09-AUG-21	
Individual Metal in Soil							
Metals in Soil by CRC ICPMS							
Lead (Pb)	3.55		0.50	mg/kg	09-AUG-21	09-AUG-21	R5546923
Miscellaneous Parameters							
Moisture	5.64		0.25	%		08-AUG-21	R5546300
L2622962-12 EX15-21-63							
Sampled By: CLIENT on 04-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Ethylbenzene	<0.015		0.015	mg/kg	08-AUG-21	09-AUG-21	R5546503
Toluene	0.032		0.014	mg/kg	08-AUG-21	09-AUG-21	R5546503
o-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
m+p-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Surrogate: 1,4-Difluorobenzene	125.0		70-130	%	08-AUG-21	09-AUG-21	R5546503

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2622962-12 EX15-21-63							
Sampled By: CLIENT on 04-AUG-21							
Matrix: SOIL							
BTEX and Styrene							
Surrogate: 4-Bromofluorobenzene	128.2		70-130	%	08-AUG-21	09-AUG-21	R5546503
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	08-AUG-21	09-AUG-21	R5546059
Prep/Analysis Dates					08-AUG-21	09-AUG-21	R5546059
Surrogate: 2-Bromobenzotrifluoride	84.4		70-130	%	08-AUG-21	09-AUG-21	R5546059
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		09-AUG-21	
F1-BTEX	<10		10	mg/kg		09-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		09-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		09-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		09-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		09-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	109.8		70-130	%	08-AUG-21	09-AUG-21	R5546510
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		09-AUG-21	
Individual Metal in Soil							
Metals in Soil by CRC ICPMS							
Lead (Pb)	2.57		0.50	mg/kg	09-AUG-21	09-AUG-21	R5546923
Miscellaneous Parameters							
Moisture	6.79		0.25	%		08-AUG-21	R5546300
L2622962-13 EX15-21-50							
Sampled By: CLIENT on 04-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	0.0065		0.0050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Ethylbenzene	<0.015		0.015	mg/kg	08-AUG-21	09-AUG-21	R5546503
Toluene	<0.014		0.014	mg/kg	08-AUG-21	09-AUG-21	R5546503
o-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
m+p-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Surrogate: 1,4-Difluorobenzene	104.2		70-130	%	08-AUG-21	09-AUG-21	R5546503
Surrogate: 4-Bromofluorobenzene	114.8		70-130	%	08-AUG-21	09-AUG-21	R5546503
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	08-AUG-21	09-AUG-21	R5546059
Prep/Analysis Dates					08-AUG-21	09-AUG-21	R5546059
Surrogate: 2-Bromobenzotrifluoride	82.9		70-130	%	08-AUG-21	09-AUG-21	R5546059
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		09-AUG-21	
F1-BTEX	<10		10	mg/kg		09-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		09-AUG-21	
F3 (C16-C34)	70		50	mg/kg		09-AUG-21	
F4 (C34-C50)	55		50	mg/kg		09-AUG-21	
Total Hydrocarbons (C6-C50)	125		50	mg/kg		09-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	85.3		70-130	%	08-AUG-21	09-AUG-21	R5546510
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		09-AUG-21	
Individual Metal in Soil							
Metals in Soil by CRC ICPMS							
Lead (Pb)	3.69		0.50	mg/kg	09-AUG-21	09-AUG-21	R5546923
Miscellaneous Parameters							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2622962-13 EX15-21-50							
Sampled By: CLIENT on 04-AUG-21							
Matrix: SOIL							
Moisture	6.10		0.25	%		08-AUG-21	R5546300
L2622962-14 EX15-21-48							
Sampled By: CLIENT on 04-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	0.0083		0.0050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Ethylbenzene	0.029		0.015	mg/kg	08-AUG-21	09-AUG-21	R5546503
Toluene	0.237		0.014	mg/kg	08-AUG-21	09-AUG-21	R5546503
o-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
m+p-Xylene	0.085		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Surrogate: 1,4-Difluorobenzene	100.9		70-130	%	08-AUG-21	09-AUG-21	R5546503
Surrogate: 4-Bromofluorobenzene	113.6		70-130	%	08-AUG-21	09-AUG-21	R5546503
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	08-AUG-21	09-AUG-21	R5546059
Prep/Analysis Dates					08-AUG-21	09-AUG-21	R5546059
Surrogate: 2-Bromobenzotrifluoride	88.4		70-130	%	08-AUG-21	09-AUG-21	R5546059
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		09-AUG-21	
F1-BTEX	<10		10	mg/kg		09-AUG-21	
F2 (C10-C16)	26		25	mg/kg		09-AUG-21	
F3 (C16-C34)	98		50	mg/kg		09-AUG-21	
F4 (C34-C50)	52		50	mg/kg		09-AUG-21	
Total Hydrocarbons (C6-C50)	176		50	mg/kg		09-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	108.4		70-130	%	08-AUG-21	09-AUG-21	R5546510
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	0.085		0.071	mg/kg		09-AUG-21	
Individual Metal in Soil							
Metals in Soil by CRC ICPMS							
Lead (Pb)	7.67		0.50	mg/kg	09-AUG-21	09-AUG-21	R5546923
Miscellaneous Parameters							
Moisture	12.0		0.25	%		08-AUG-21	R5546300
L2622962-15 EX15-21-41							
Sampled By: CLIENT on 04-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Ethylbenzene	<0.015		0.015	mg/kg	08-AUG-21	09-AUG-21	R5546503
Toluene	<0.014		0.014	mg/kg	08-AUG-21	09-AUG-21	R5546503
o-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
m+p-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Surrogate: 1,4-Difluorobenzene	87.6		70-130	%	08-AUG-21	09-AUG-21	R5546503
Surrogate: 4-Bromofluorobenzene	97.3		70-130	%	08-AUG-21	09-AUG-21	R5546503
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	08-AUG-21	09-AUG-21	R5546059
Prep/Analysis Dates					08-AUG-21	09-AUG-21	R5546059
Surrogate: 2-Bromobenzotrifluoride	82.8		70-130	%	08-AUG-21	09-AUG-21	R5546059
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		09-AUG-21	
F1-BTEX	<10		10	mg/kg		09-AUG-21	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2622962-15 EX15-21-41							
Sampled By: CLIENT on 04-AUG-21							
Matrix: SOIL							
CCME Total Hydrocarbons							
F2 (C10-C16)	<25		25	mg/kg		09-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		09-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		09-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		09-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	75.5		70-130	%	08-AUG-21	09-AUG-21	R5546510
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		09-AUG-21	
Individual Metal in Soil							
Metals in Soil by CRC ICPMS							
Lead (Pb)	2.22		0.50	mg/kg	09-AUG-21	09-AUG-21	R5546923
Miscellaneous Parameters							
Moisture	10.4		0.25	%		08-AUG-21	R5546300
L2622962-16 EX15-21-39							
Sampled By: CLIENT on 04-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Ethylbenzene	<0.015		0.015	mg/kg	08-AUG-21	09-AUG-21	R5546503
Toluene	<0.014		0.014	mg/kg	08-AUG-21	09-AUG-21	R5546503
o-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
m+p-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Surrogate: 1,4-Difluorobenzene	97.6		70-130	%	08-AUG-21	09-AUG-21	R5546503
Surrogate: 4-Bromofluorobenzene	105.6		70-130	%	08-AUG-21	09-AUG-21	R5546503
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	08-AUG-21	09-AUG-21	R5546059
Prep/Analysis Dates					08-AUG-21	09-AUG-21	R5546059
Surrogate: 2-Bromobenzotrifluoride	82.1		70-130	%	08-AUG-21	09-AUG-21	R5546059
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		09-AUG-21	
F1-BTEX	<10		10	mg/kg		09-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		09-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		09-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		09-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		09-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	101.6		70-130	%	08-AUG-21	09-AUG-21	R5546510
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		09-AUG-21	
Individual Metal in Soil							
Metals in Soil by CRC ICPMS							
Lead (Pb)	2.03		0.50	mg/kg	09-AUG-21	09-AUG-21	R5546923
Miscellaneous Parameters							
Moisture	8.88		0.25	%		08-AUG-21	R5546300
L2622962-17 EX15-21-58							
Sampled By: CLIENT on 04-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	08-AUG-21	09-AUG-21	R5546503

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2622962-17 EX15-21-58							
Sampled By: CLIENT on 04-AUG-21							
Matrix: SOIL							
BTEX and Styrene							
Ethylbenzene	<0.015		0.015	mg/kg	08-AUG-21	09-AUG-21	R5546503
Toluene	<0.014		0.014	mg/kg	08-AUG-21	09-AUG-21	R5546503
o-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
m+p-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Surrogate: 1,4-Difluorobenzene	107.2		70-130	%	08-AUG-21	09-AUG-21	R5546503
Surrogate: 4-Bromofluorobenzene	107.3		70-130	%	08-AUG-21	09-AUG-21	R5546503
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	08-AUG-21	09-AUG-21	R5546059
Prep/Analysis Dates					08-AUG-21	09-AUG-21	R5546059
Surrogate: 2-Bromobenzotrifluoride	82.2		70-130	%	08-AUG-21	09-AUG-21	R5546059
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		09-AUG-21	
F1-BTEX	<10		10	mg/kg		09-AUG-21	
F2 (C10-C16)	75		25	mg/kg		09-AUG-21	
F3 (C16-C34)	82		50	mg/kg		09-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		09-AUG-21	
Total Hydrocarbons (C6-C50)	157		50	mg/kg		09-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	93.9		70-130	%	08-AUG-21	09-AUG-21	R5546510
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		09-AUG-21	
Individual Metal in Soil							
Metals in Soil by CRC ICPMS							
Lead (Pb)	2.34		0.50	mg/kg	09-AUG-21	09-AUG-21	R5546923
Miscellaneous Parameters							
Moisture	5.82		0.25	%		08-AUG-21	R5546300
L2622962-18 EX15-21-54							
Sampled By: CLIENT on 04-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Ethylbenzene	<0.015		0.015	mg/kg	08-AUG-21	09-AUG-21	R5546503
Toluene	<0.014		0.014	mg/kg	08-AUG-21	09-AUG-21	R5546503
o-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
m+p-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Surrogate: 1,4-Difluorobenzene	118.6		70-130	%	08-AUG-21	09-AUG-21	R5546503
Surrogate: 4-Bromofluorobenzene	119.6		70-130	%	08-AUG-21	09-AUG-21	R5546503
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	08-AUG-21	09-AUG-21	R5546059
Prep/Analysis Dates					08-AUG-21	09-AUG-21	R5546059
Surrogate: 2-Bromobenzotrifluoride	87.0		70-130	%	08-AUG-21	09-AUG-21	R5546059
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		09-AUG-21	
F1-BTEX	<10		10	mg/kg		09-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		09-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		09-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		09-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		09-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	102.5		70-130	%	08-AUG-21	09-AUG-21	R5546510

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2622962-18 EX15-21-54							
Sampled By: CLIENT on 04-AUG-21							
Matrix: SOIL							
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		09-AUG-21	
Individual Metal in Soil							
Metals in Soil by CRC ICPMS							
Lead (Pb)	3.38		0.50	mg/kg	09-AUG-21	09-AUG-21	R5546923
Miscellaneous Parameters							
Moisture	8.67		0.25	%		08-AUG-21	R5546300
L2622962-19 EX15-21-10							
Sampled By: CLIENT on 04-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Ethylbenzene	<0.015		0.015	mg/kg	08-AUG-21	09-AUG-21	R5546503
Toluene	<0.014		0.014	mg/kg	08-AUG-21	09-AUG-21	R5546503
o-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
m+p-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Surrogate: 1,4-Difluorobenzene	103.3		70-130	%	08-AUG-21	09-AUG-21	R5546503
Surrogate: 4-Bromofluorobenzene	110.0		70-130	%	08-AUG-21	09-AUG-21	R5546503
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	08-AUG-21	09-AUG-21	R5546059
Prep/Analysis Dates					08-AUG-21	09-AUG-21	R5546059
Surrogate: 2-Bromobenzotrifluoride	84.9		70-130	%	08-AUG-21	09-AUG-21	R5546059
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		09-AUG-21	
F1-BTEX	<10		10	mg/kg		09-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		09-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		09-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		09-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		09-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	71.2		70-130	%	08-AUG-21	09-AUG-21	R5546510
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		09-AUG-21	
Individual Metal in Soil							
Metals in Soil by CRC ICPMS							
Lead (Pb)	1.74		0.50	mg/kg	09-AUG-21	09-AUG-21	R5546923
Miscellaneous Parameters							
Moisture	4.26		0.25	%		08-AUG-21	R5546300
L2622962-20 EX15-21-9							
Sampled By: CLIENT on 04-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Ethylbenzene	<0.015		0.015	mg/kg	08-AUG-21	09-AUG-21	R5546503
Toluene	<0.014		0.014	mg/kg	08-AUG-21	09-AUG-21	R5546503
o-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
m+p-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Surrogate: 1,4-Difluorobenzene	110.2		70-130	%	08-AUG-21	09-AUG-21	R5546503
Surrogate: 4-Bromofluorobenzene	114.3		70-130	%	08-AUG-21	09-AUG-21	R5546503
CCME F2-4 Hydrocarbons							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2622962-20 EX15-21-9							
Sampled By: CLIENT on 04-AUG-21							
Matrix: SOIL							
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	08-AUG-21	09-AUG-21	R5546059
Prep/Analysis Dates					08-AUG-21	09-AUG-21	R5546059
Surrogate: 2-Bromobenzotrifluoride	87.0		70-130	%	08-AUG-21	09-AUG-21	R5546059
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		09-AUG-21	
F1-BTEX	<10		10	mg/kg		09-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		09-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		09-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		09-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		09-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	81.7		70-130	%	08-AUG-21	09-AUG-21	R5546510
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		09-AUG-21	
Individual Metal in Soil							
Metals in Soil by CRC ICPMS							
Lead (Pb)	4.66		0.50	mg/kg	09-AUG-21	09-AUG-21	R5546923
Miscellaneous Parameters							
Moisture	6.55		0.25	%		08-AUG-21	R5546300
L2622962-21 EX15-21-63D							
Sampled By: CLIENT on 04-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Ethylbenzene	<0.015		0.015	mg/kg	08-AUG-21	09-AUG-21	R5546503
Toluene	0.040		0.014	mg/kg	08-AUG-21	09-AUG-21	R5546503
o-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
m+p-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Surrogate: 1,4-Difluorobenzene	82.6		70-130	%	08-AUG-21	09-AUG-21	R5546503
Surrogate: 4-Bromofluorobenzene	71.3		70-130	%	08-AUG-21	09-AUG-21	R5546503
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	08-AUG-21	09-AUG-21	R5546059
Prep/Analysis Dates					08-AUG-21	09-AUG-21	R5546059
Surrogate: 2-Bromobenzotrifluoride	83.7		70-130	%	08-AUG-21	09-AUG-21	R5546059
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		09-AUG-21	
F1-BTEX	<10		10	mg/kg		09-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		09-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		09-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		09-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		09-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	114.5		70-130	%	08-AUG-21	09-AUG-21	R5546510
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		09-AUG-21	
Individual Metal in Soil							
Metals in Soil by CRC ICPMS							
Lead (Pb)	2.34		0.50	mg/kg	09-AUG-21	09-AUG-21	R5546923
Miscellaneous Parameters							
Moisture	6.81		0.25	%		08-AUG-21	R5546299

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2622962-22 EX15-21-38D							
Sampled By: CLIENT on 04-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	0.0117		0.0050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Ethylbenzene	<0.015		0.015	mg/kg	08-AUG-21	09-AUG-21	R5546503
Toluene	0.032		0.014	mg/kg	08-AUG-21	09-AUG-21	R5546503
o-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
m+p-Xylene	<0.050		0.050	mg/kg	08-AUG-21	09-AUG-21	R5546503
Surrogate: 1,4-Difluorobenzene	126.0		70-130	%	08-AUG-21	09-AUG-21	R5546503
Surrogate: 4-Bromofluorobenzene	123.4		70-130	%	08-AUG-21	09-AUG-21	R5546503
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	08-AUG-21	09-AUG-21	R5546059
Prep/Analysis Dates					08-AUG-21	09-AUG-21	R5546059
Surrogate: 2-Bromobenzotrifluoride	86.5		70-130	%	08-AUG-21	09-AUG-21	R5546059
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		09-AUG-21	
F1-BTEX	<10		10	mg/kg		09-AUG-21	
F2 (C10-C16)	399		25	mg/kg		09-AUG-21	
F3 (C16-C34)	401		50	mg/kg		09-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		09-AUG-21	
Total Hydrocarbons (C6-C50)	800		50	mg/kg		09-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	83.4		70-130	%	08-AUG-21	09-AUG-21	R5546510
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		09-AUG-21	
Individual Metal in Soil							
Metals in Soil by CRC ICPMS							
Lead (Pb)	25.0		0.50	mg/kg	09-AUG-21	09-AUG-21	R5546923
Miscellaneous Parameters							
Moisture	6.36		0.25	%		08-AUG-21	R5546299

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BTXS-MEOH-HS-MS-CL	Soil	BTEX and Styrene	EPA 8260C/5021A

The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. Target compound concentrations are measured using mass spectrometry detection.

F1-4-CALC-CL	Soil	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-MEOH-HS-FID-CL	Soil	F1(C6-C10)	CWS PHC Tier 1

The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. The F1 fraction concentration is measured using flame ionization detection.

F2-4-TMB-H/A-FID-CL	Soil	CCME F2-4 Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

This analysis is carried out in accordance with the "Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method, Canadian Council of Ministers of the Environment, December 2001." For C10 to C50 hydrocarbons (F2, F3, F4) and gravimetric heavy hydrocarbons (F4G-sg), a subsample of the sediment/soil is extracted with 1:1 hexane:acetone using a rotary extractor. The extract undergoes a silica-gel clean-up to remove polar compounds. F2, F3 & F4 are analyzed by on-column GC/FID, and F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where F4 (C34-C50) and F4G-sg results are reported for a sample, the larger of the reported values is used for comparison against the relevant CCME standard for F4.
7. The gravimetric heavy hydrocarbon results (F4G-sg), cannot be added to the C6 to C50 hydrocarbon results.
8. This method is validated for use.
9. Data from analysis of quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram.

F4G-TMB-CL	Soil	CCME Gravimetric Heavy Hydrocarbons (SG)	CCME CWS-PHC, Pub #1310, Dec 2001

This analysis is carried out in accordance with the "Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method, Canadian Council of Ministers of the Environment, December 2001." For gravimetric heavy hydrocarbons (F4G-sg), a subsample of the sediment/soil is extracted with 1:1 hexane:acetone using a rotary extractor. The extract undergoes a silica-gel clean-up to remove polar compounds prior to gravimetric analysis.

Notes:
1. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
2. Where F4 (C34-C50) and F4G-sg results are reported for a sample, the larger of the reported values is used for comparison against the relevant CCME standard for F4.
3. The gravimetric heavy hydrocarbon (F4G-sg) result cannot be added to the C6 to C50 hydrocarbons results.
4. This method is validated for use.
5. Data from analysis of quality control samples is available upon request.
6. Reported results are expressed as milligrams per dry kilogram.

MET-200.2-CCMS-CL	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020A (mod)

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

Soil/sediment is dried, disaggregated, and sieved (2 mm). Strong Acid Leachable Metals in the <2mm fraction are solubilized by heated digestion with nitric and hydrochloric acids. Instrumental analysis is by Collision / Reaction Cell ICPMS.

Limitations: This method is intended to liberate environmentally available metals. Silicate minerals are not solubilized. Some metals may be only partially recovered (matrix dependent), including Al, Ba, Be, Cr, S, Sr, Ti, Tl, V, W, and Zr. Elemental Sulfur may be poorly recovered by this method. Volatile forms of sulfur (e.g. sulfide, H2S) may be excluded if lost during sampling, storage, or digestion.

MOISTURE-CL	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)

This analysis is carried out gravimetrically by drying the sample at 105 C

XYLENES-SUM-CALC-CL	Soil	Sum of Xylene Isomer Concentrations	CALCULATED RESULT

Total xylenes represents the sum of o-xylene and m&p-xylene.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
CL	ALS ENVIRONMENTAL - CALGARY, ALBERTA, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Client: GOLDER ASSOCIATES LTD
16820 107 Ave NW
Edmonton AB T5P 4C3
Contact: Steven Fiddler

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTXS-MEOH-HS-MS-CL	**Soil**							
Batch R5546503								
WG3592611-3 DUP		**L2622962-1**						
Benzene		0.0457	0.0556		mg/kg	20	30	09-AUG-21
Ethylbenzene		0.030	0.035		mg/kg	15	30	09-AUG-21
Toluene		0.056	0.068		mg/kg	19	30	09-AUG-21
o-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	09-AUG-21
m+p-Xylene		<0.050	0.051	RPD-NA	mg/kg	N/A	30	09-AUG-21
WG3592611-2 LCS								
Benzene			87.6		%		70-130	09-AUG-21
Ethylbenzene			78.2		%		70-130	09-AUG-21
Toluene			86.3		%		70-130	09-AUG-21
o-Xylene			82.7		%		70-130	09-AUG-21
m+p-Xylene			78.9		%		70-130	09-AUG-21
WG3592612-2 LCS								
Benzene			93.8		%		70-130	09-AUG-21
Ethylbenzene			90.5		%		70-130	09-AUG-21
Toluene			101.6		%		70-130	09-AUG-21
o-Xylene			89.6		%		70-130	09-AUG-21
m+p-Xylene			91.2		%		70-130	09-AUG-21
WG3592611-1 MB								
Benzene			<0.0050		mg/kg		0.005	09-AUG-21
Ethylbenzene			<0.015		mg/kg		0.015	09-AUG-21
Toluene			<0.014		mg/kg		0.014	09-AUG-21
o-Xylene			<0.050		mg/kg		0.05	09-AUG-21
m+p-Xylene			<0.050		mg/kg		0.05	09-AUG-21
Surrogate: 1,4-Difluorobenzene			90.4		%		70-130	09-AUG-21
Surrogate: 4-Bromofluorobenzene			94.7		%		70-130	09-AUG-21
WG3592612-1 MB								
Benzene			<0.0050		mg/kg		0.005	09-AUG-21
Ethylbenzene			<0.015		mg/kg		0.015	09-AUG-21
Toluene			<0.014		mg/kg		0.014	09-AUG-21
o-Xylene			<0.050		mg/kg		0.05	09-AUG-21
m+p-Xylene			<0.050		mg/kg		0.05	09-AUG-21
Surrogate: 1,4-Difluorobenzene			103.1		%		70-130	09-AUG-21
Surrogate: 4-Bromofluorobenzene			95.1		%		70-130	09-AUG-21
F1-MEOH-HS-FID-CL	**Soil**							

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-MEOH-HS-FID-CL	**Soil**							
Batch R5546510								
WG3592611-3 DUP		**L2622962-1**						
F1(C6-C10)		<10	<10	RPD-NA	mg/kg	N/A	30	09-AUG-21
WG3592611-2 LCS								
F1(C6-C10)			118.8		%		70-130	09-AUG-21
WG3592612-2 LCS								
F1(C6-C10)			114.2		%		70-130	09-AUG-21
WG3592611-1 MB								
F1(C6-C10)			<10		mg/kg		10	09-AUG-21
Surrogate: 3,4-Dichlorotoluene			97.0		%		70-130	09-AUG-21
WG3592612-1 MB								
F1(C6-C10)			<10		mg/kg		10	09-AUG-21
Surrogate: 3,4-Dichlorotoluene			113.2		%		70-130	09-AUG-21
F2-4-TMB-H/A-FID-CL	**Soil**							
Batch R5546059								
WG3592610-4 DUP		**L2622962-1**						
F2: (C10-C16)		261	298		mg/kg	13	40	09-AUG-21
F3: (C16-C34)		642	619		mg/kg	3.7	40	09-AUG-21
F4: (C34-C50)		222	169		mg/kg	27	40	09-AUG-21
WG3592610-3 IRM		**ALS PHC3 RM**						
F2: (C10-C16)			109.1		%		70-130	09-AUG-21
F3: (C16-C34)			105.8		%		70-130	09-AUG-21
F4: (C34-C50)			107.6		%		70-130	09-AUG-21
WG3592614-3 IRM		**ALS PHC3 RM**						
F2: (C10-C16)			104.5		%		70-130	09-AUG-21
F3: (C16-C34)			101.6		%		70-130	09-AUG-21
F4: (C34-C50)			94.8		%		70-130	09-AUG-21
WG3592610-2 LCS								
F2: (C10-C16)			102.8		%		70-130	09-AUG-21
F3: (C16-C34)			97.9		%		70-130	09-AUG-21
F4: (C34-C50)			118.7		%		70-130	09-AUG-21
WG3592614-2 LCS								
F2: (C10-C16)			99.1		%		70-130	09-AUG-21
F3: (C16-C34)			98.2		%		70-130	09-AUG-21
F4: (C34-C50)			123.0		%		70-130	09-AUG-21
WG3592610-1 MB								
F2: (C10-C16)			<25		mg/kg		25	09-AUG-21
F3: (C16-C34)			<50		mg/kg		50	09-AUG-21

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-4-TMB-H/A-FID-CL	**Soil**							
Batch R5546059								
WG3592610-1 MB								
F4: (C34-C50)			<50		mg/kg		50	09-AUG-21
Surrogate: 2-Bromobenzotrifluoride			91.6		%		70-130	09-AUG-21
WG3592614-1 MB								
F2: (C10-C16)			<25		mg/kg		25	09-AUG-21
F3: (C16-C34)			<50		mg/kg		50	09-AUG-21
F4: (C34-C50)			<50		mg/kg		50	09-AUG-21
Surrogate: 2-Bromobenzotrifluoride			83.0		%		70-130	09-AUG-21
F4G-TMB-CL	**Soil**							
Batch R5546286								
WG3592526-3 IRM		**ALS PHC3 RM**						
Gravimetric Heavy Hydrocarbons (Silica)			76.7		%		70-130	08-AUG-21
WG3592526-2 LCS								
Gravimetric Heavy Hydrocarbons (Silica)			82.8		%		70-130	08-AUG-21
WG3592526-1 MB								
Gravimetric Heavy Hydrocarbons (Silica)			<500		mg/kg		500	08-AUG-21
MET-200.2-CCMS-CL	**Soil**							
Batch R5546923								
WG3592999-4 CRM		**TILL-2**						
Lead (Pb)			99.6		%		70-130	09-AUG-21
WG3592999-9 CRM		**TILL-2**						
Lead (Pb)			100.9		%		70-130	09-AUG-21
WG3592999-10 DUP		**L2622962-21**						
Lead (Pb)		2.34	2.52		mg/kg	7.4	40	09-AUG-21
WG3592999-5 DUP		**L2622962-1**						
Lead (Pb)		11.2	8.98		mg/kg	22	40	09-AUG-21
WG3592999-3 LCS								
Lead (Pb)			102.5		%		80-120	09-AUG-21
WG3592999-8 LCS								
Lead (Pb)			101.1		%		80-120	09-AUG-21
WG3592999-6 MB								
Lead (Pb)			<0.50		mg/kg		0.5	09-AUG-21
MOISTURE-CL	**Soil**							
Batch R5546299								
WG3592613-2 LCS								
Moisture			94.3		%		90-110	08-AUG-21
WG3592613-1 MB								

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MOISTURE-CL	**Soil**							
Batch R5546299								
WG3592613-1 MB								
Moisture			<0.25		%		0.25	08-AUG-21
Batch R5546300								
WG3592609-3 DUP		**L2622962-1**						
Moisture		7.05	6.23		%	12	20	08-AUG-21
WG3592609-2 LCS								
Moisture			95.5		%		90-110	08-AUG-21
WG3592609-1 MB								
Moisture			<0.25		%		0.25	08-AUG-21

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

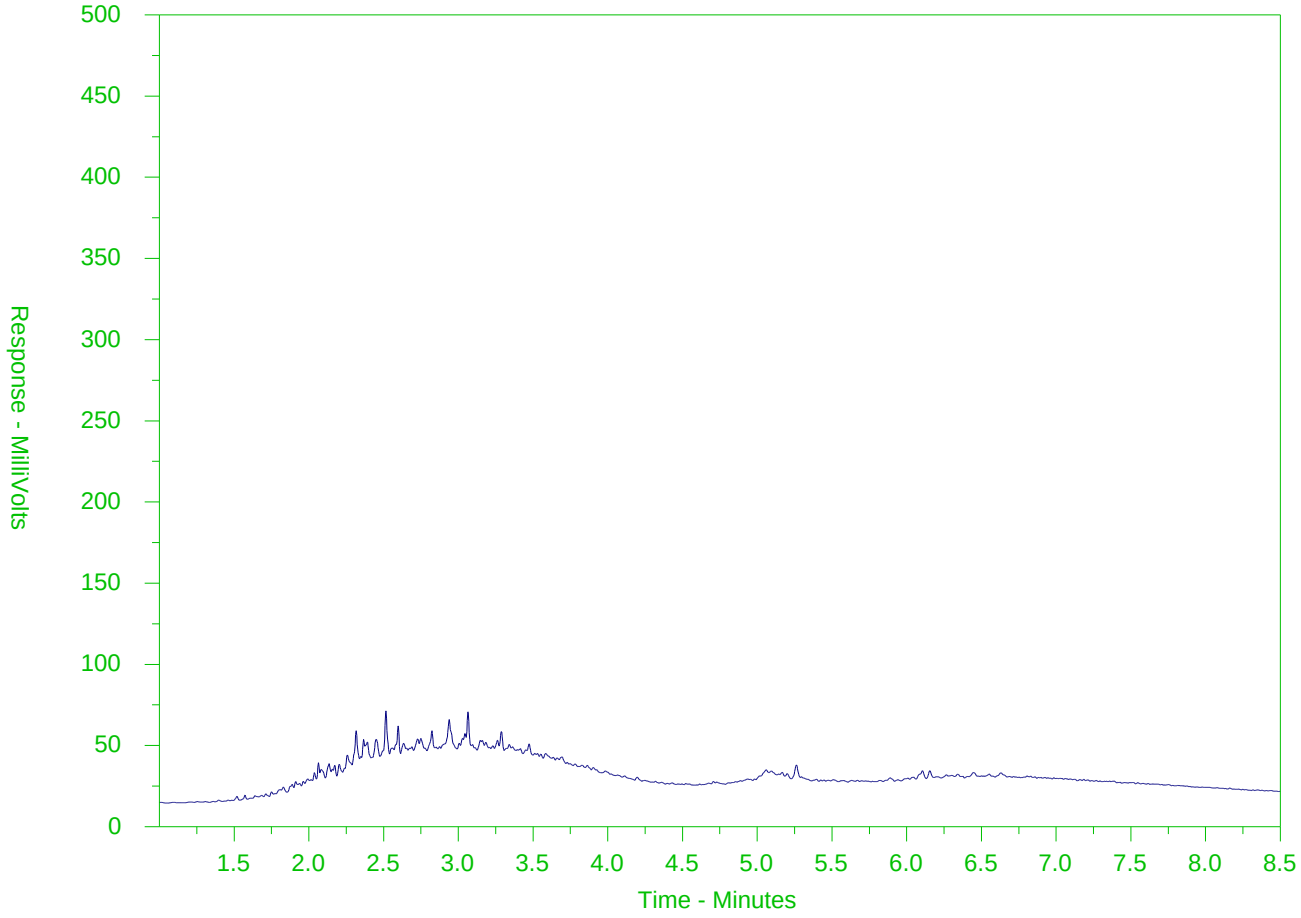
All test results reported with this submission were conducted within ALS recommended hold times.

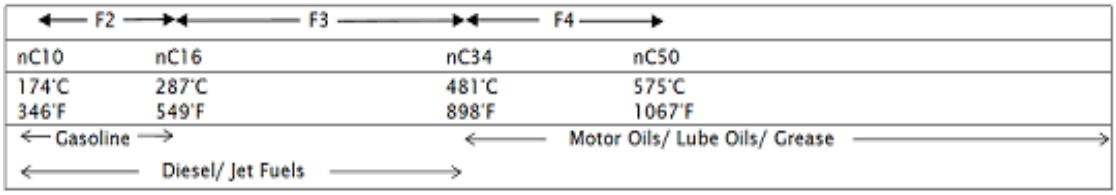
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

ALS Sample ID: L2622962-1
Client Sample ID: EX15-21-01





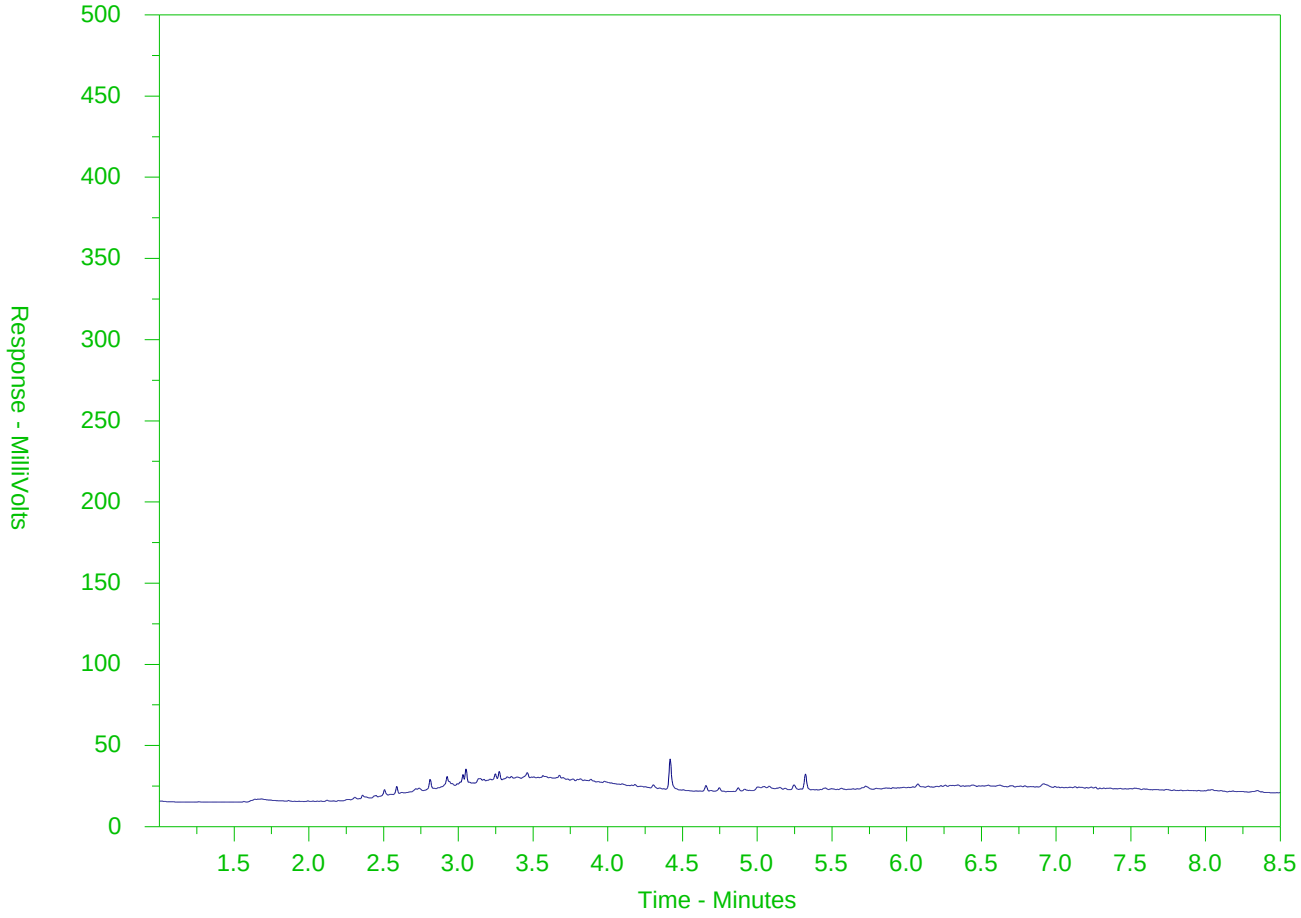
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

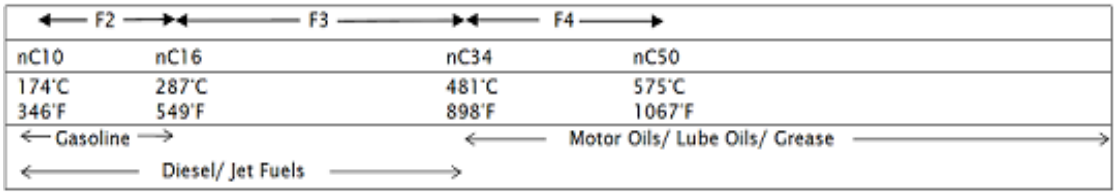
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2622962-2
Client Sample ID: EX15-21-03





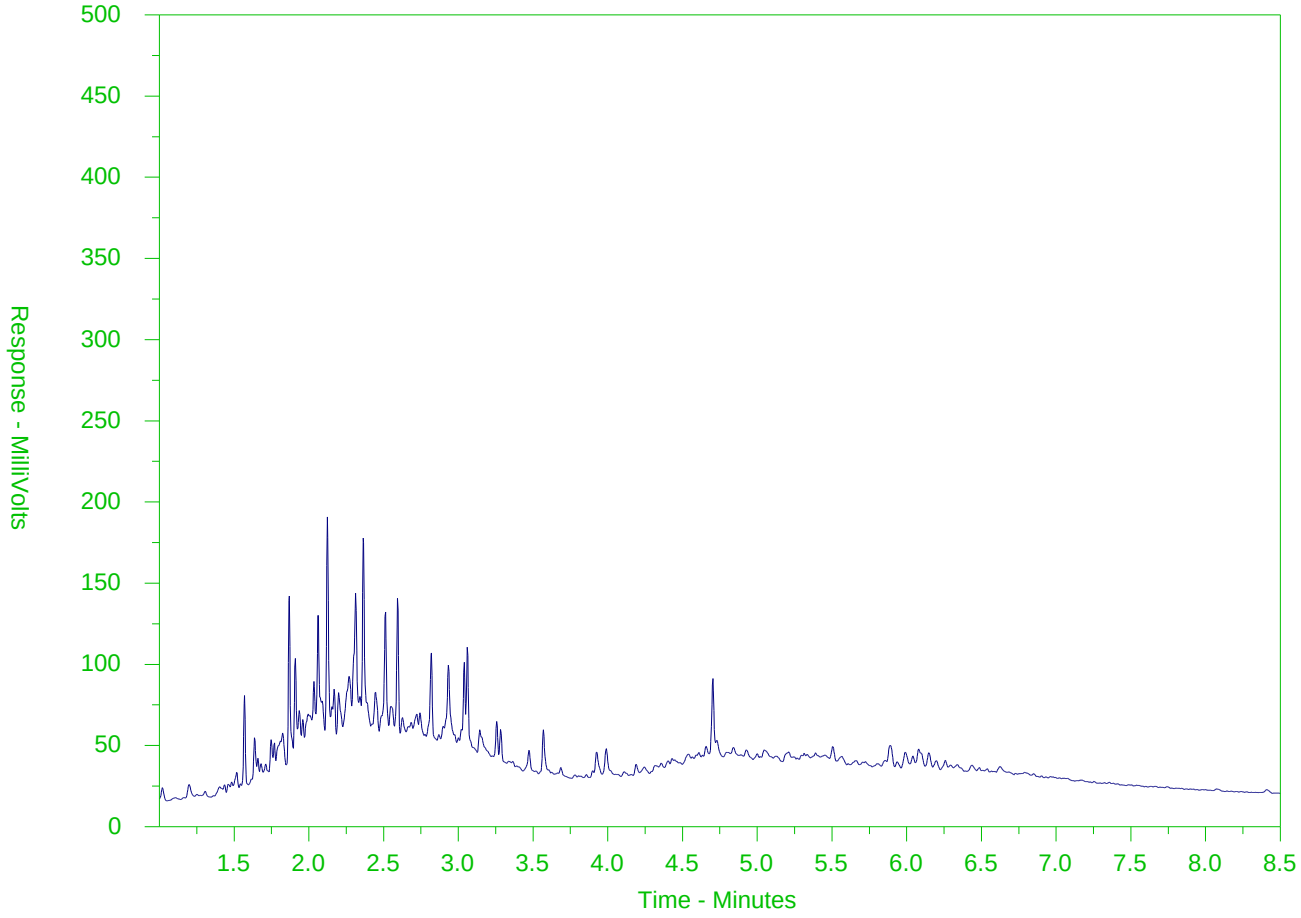
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

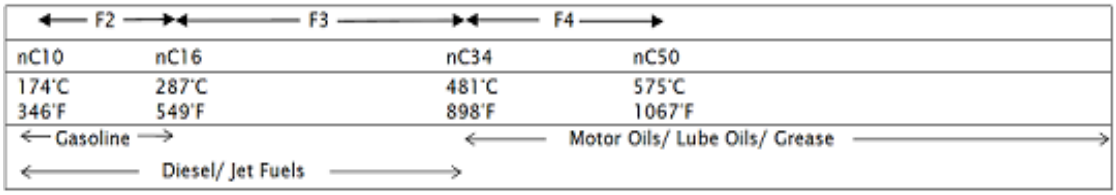
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2622962-3
Client Sample ID: EX15-21-38





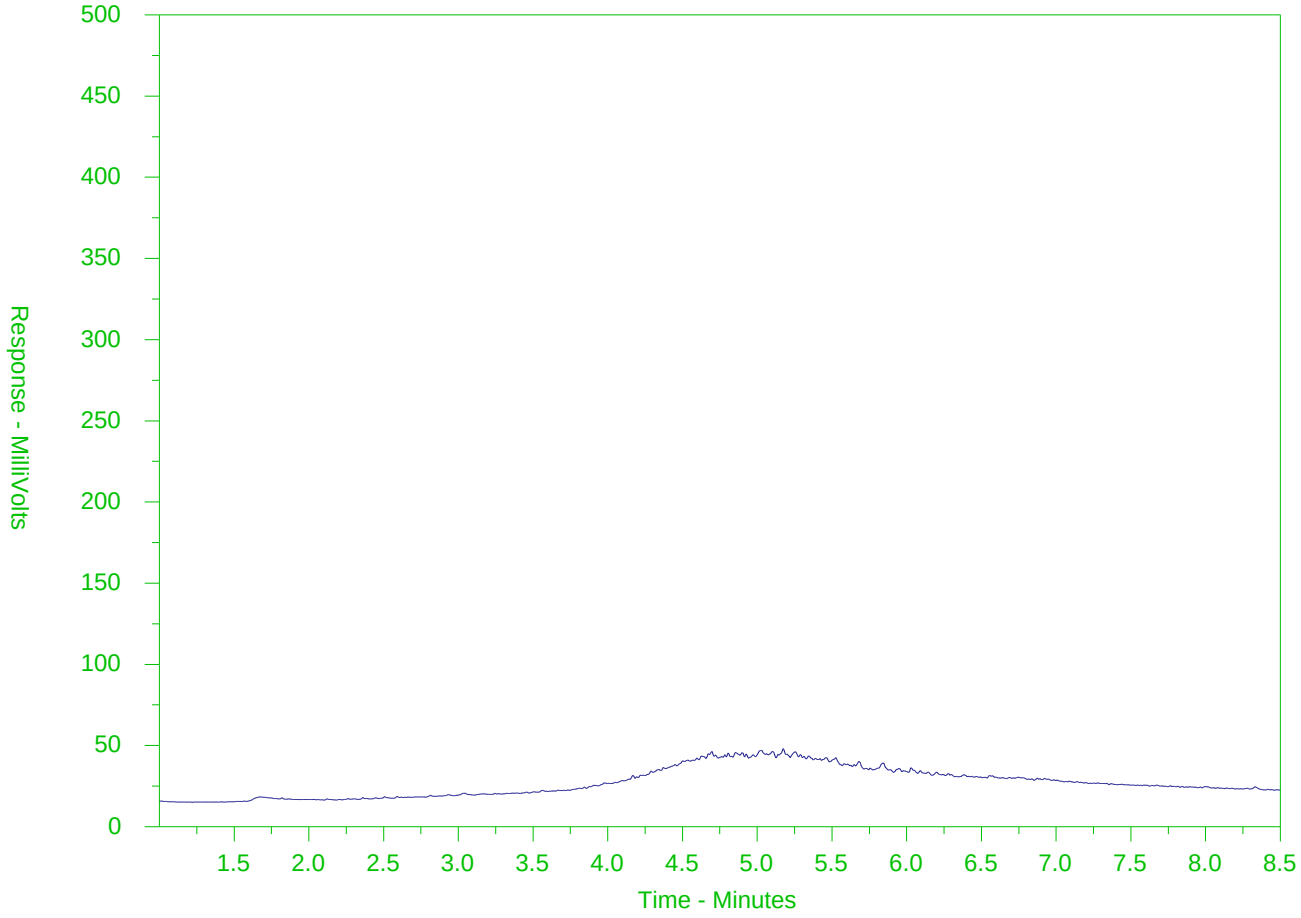
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

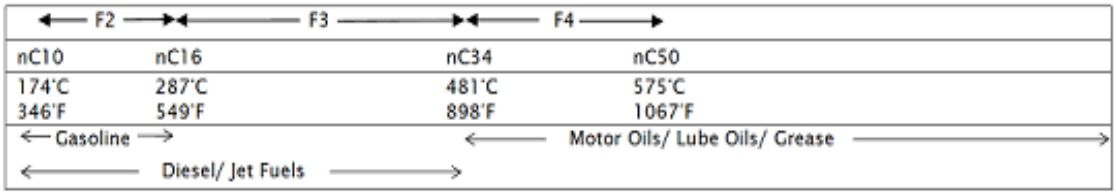
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2622962-4
Client Sample ID: EX15-21-12





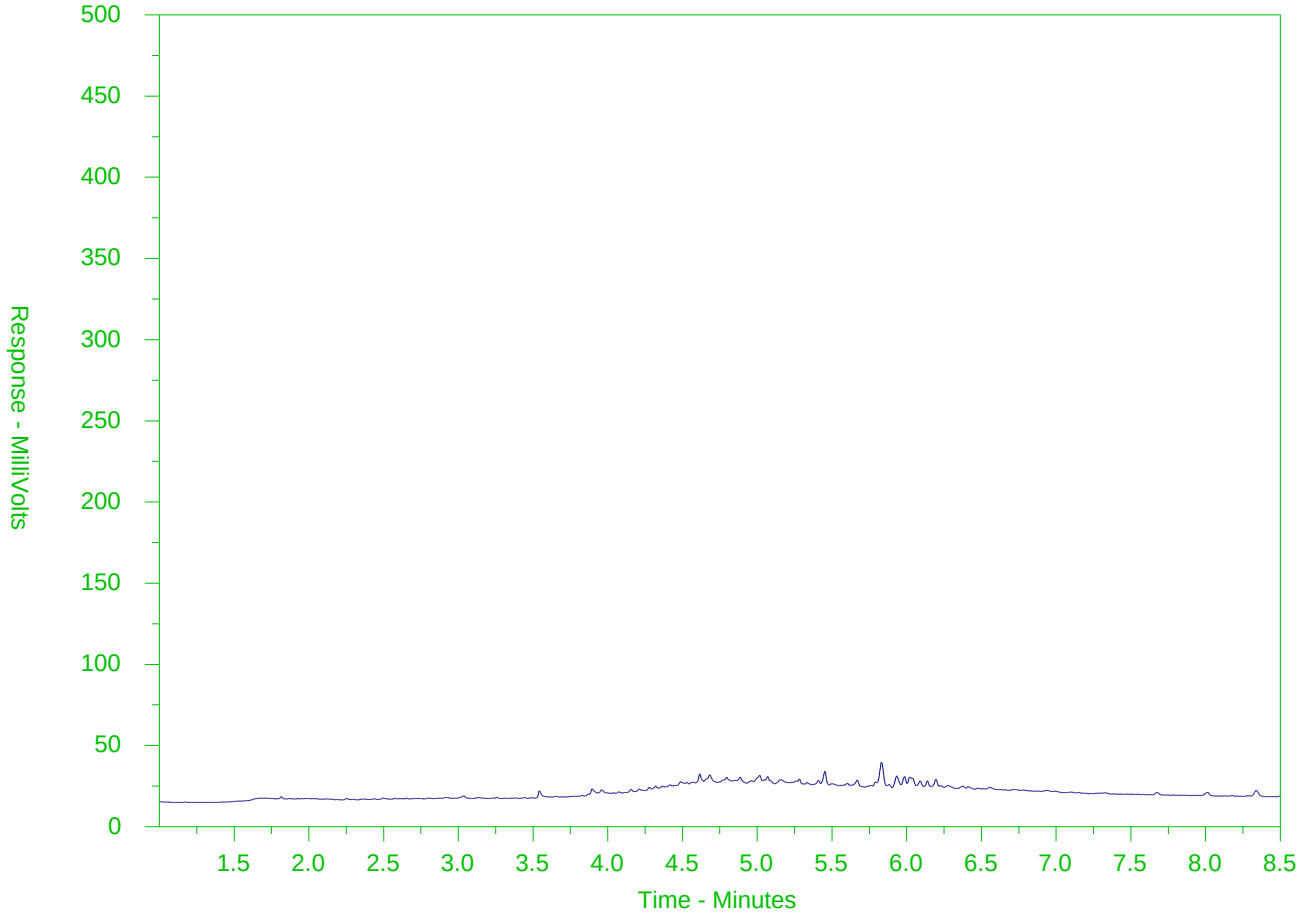
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

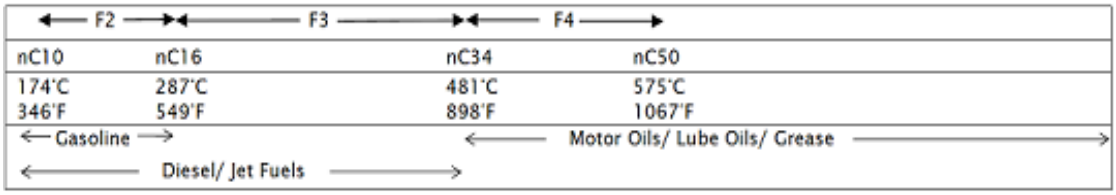
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2622962-5
Client Sample ID: EX15-21-13





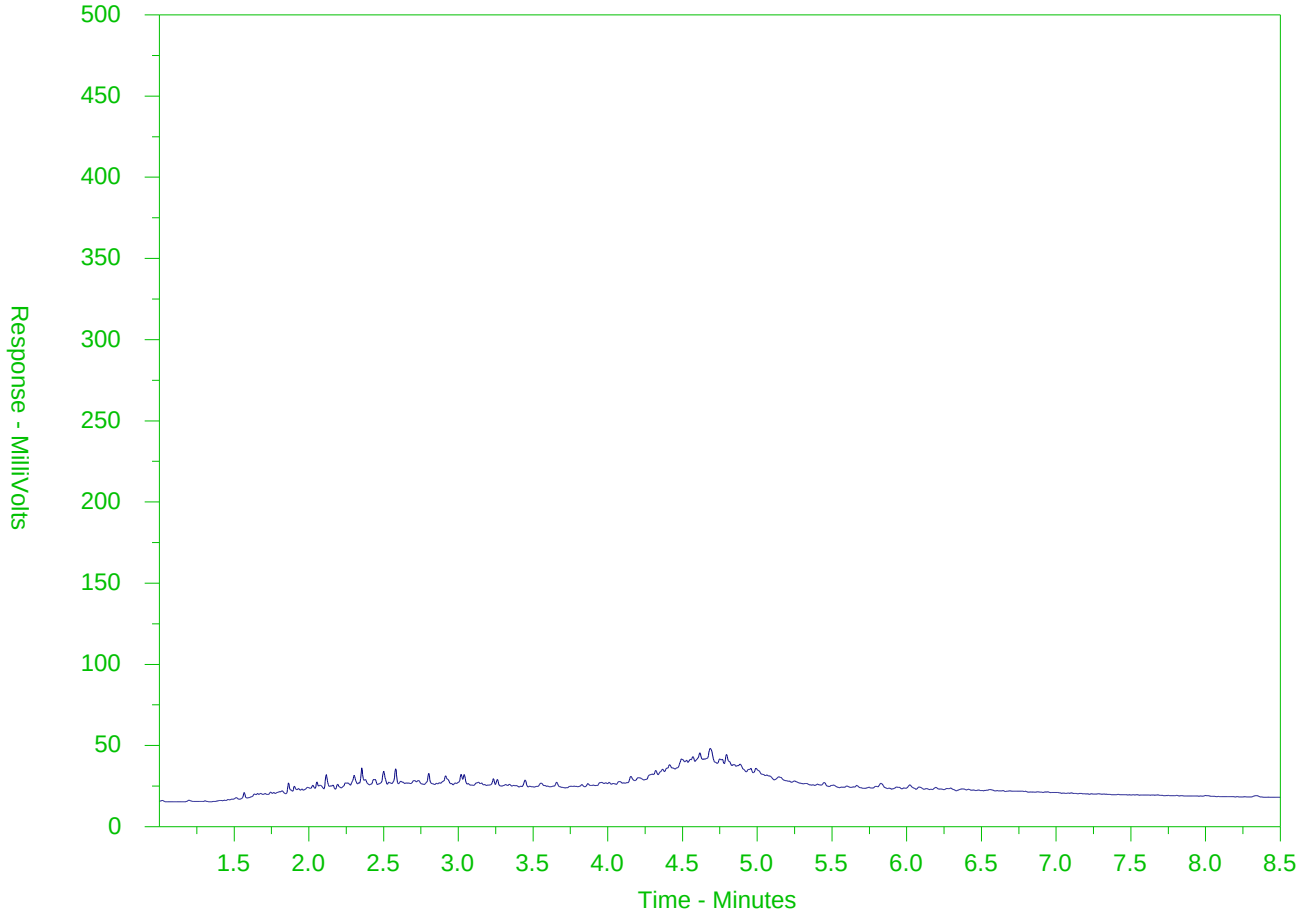
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

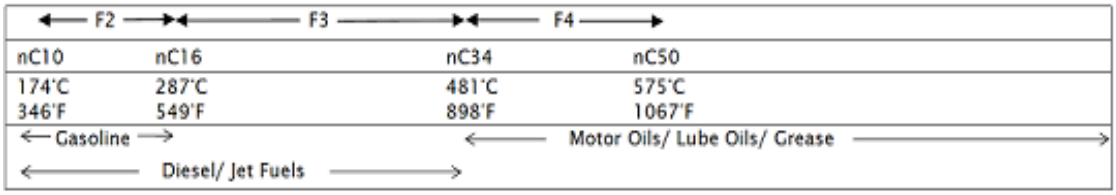
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2622962-6
Client Sample ID: EX15-21-18





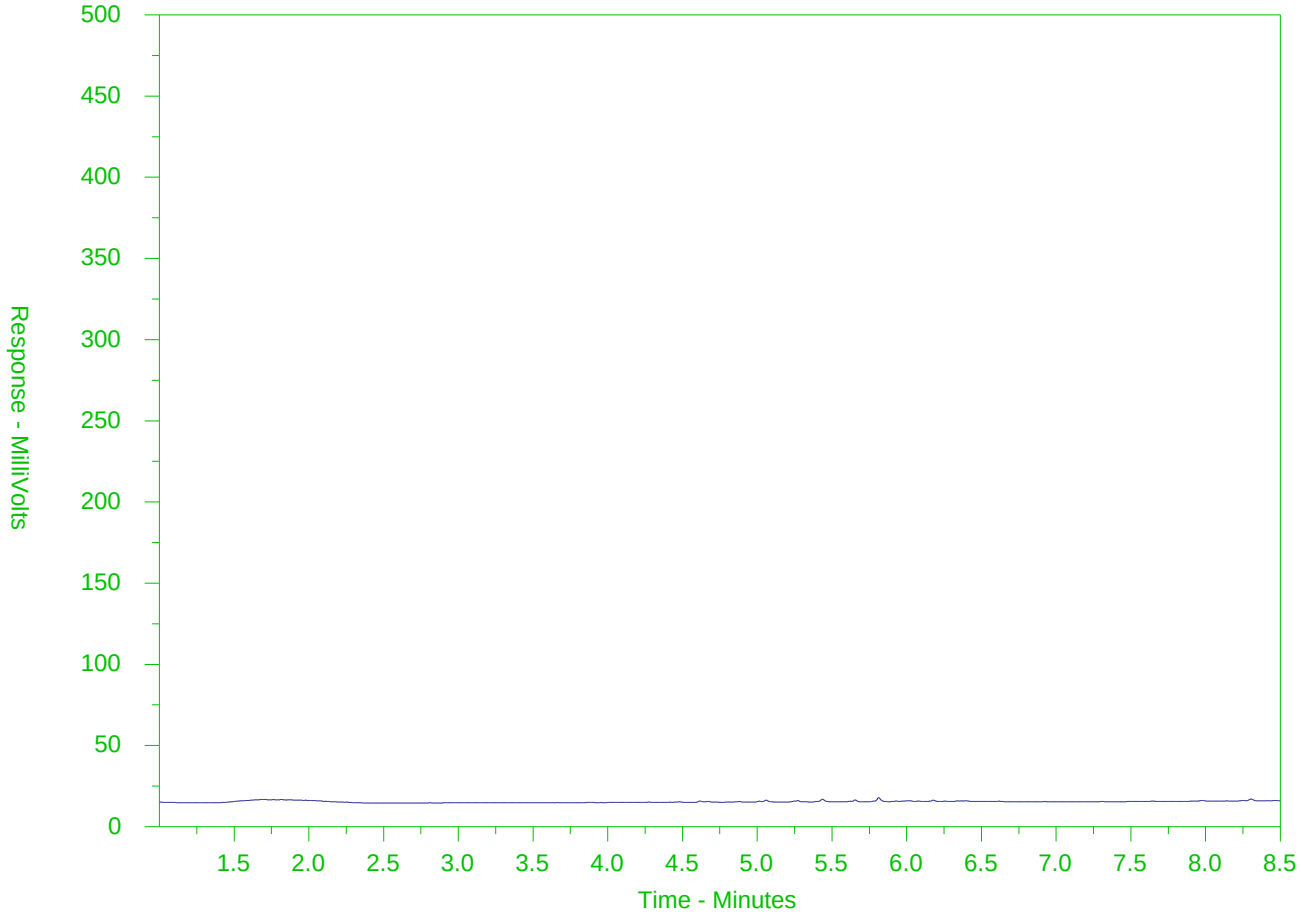
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

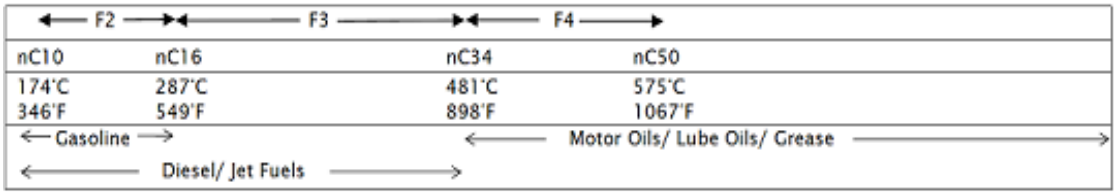
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2622962-7
Client Sample ID: EX15-21-23





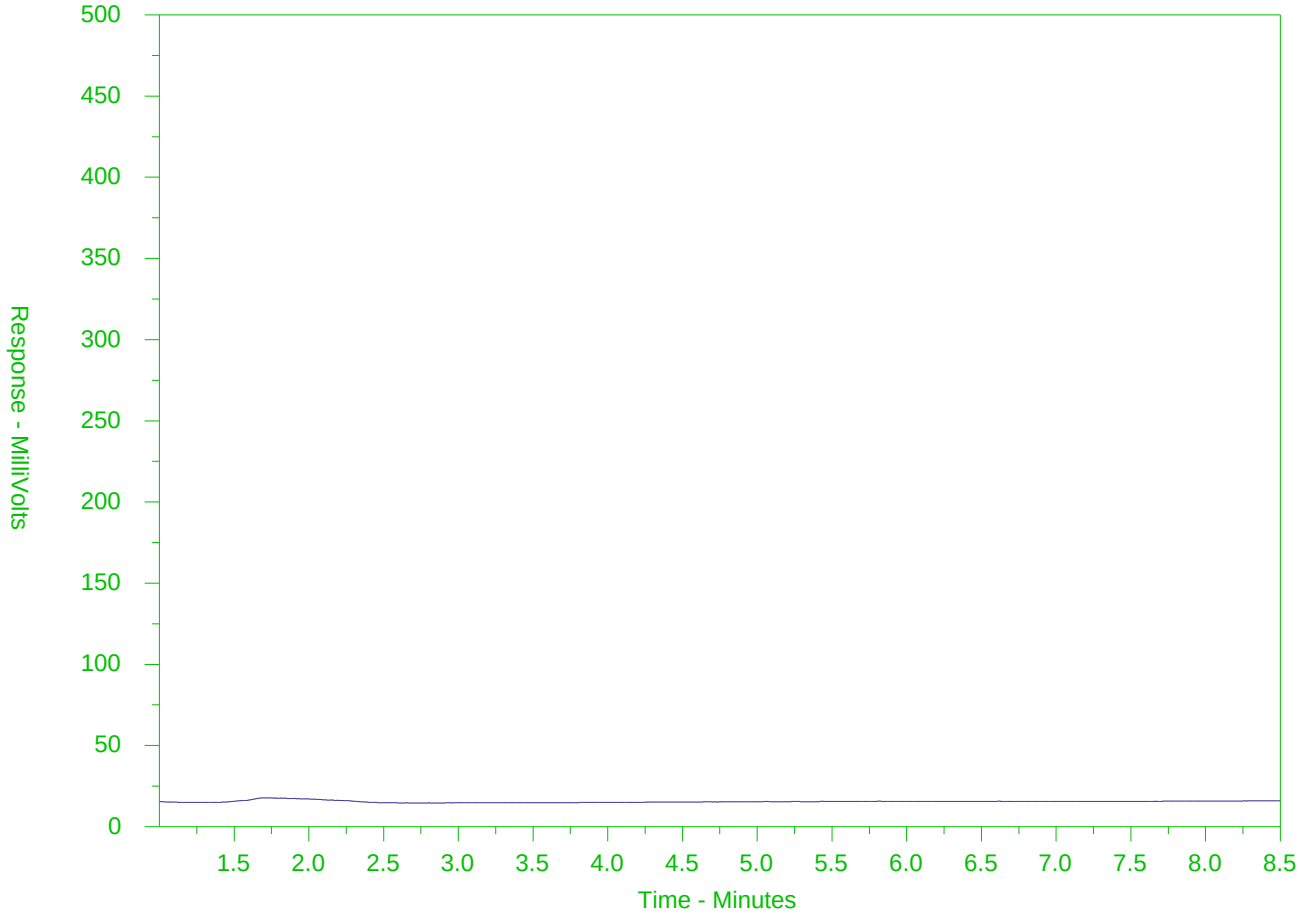
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

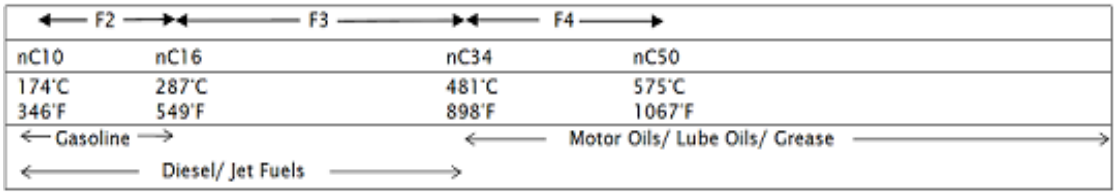
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2622962-8
Client Sample ID: EX15-21-31





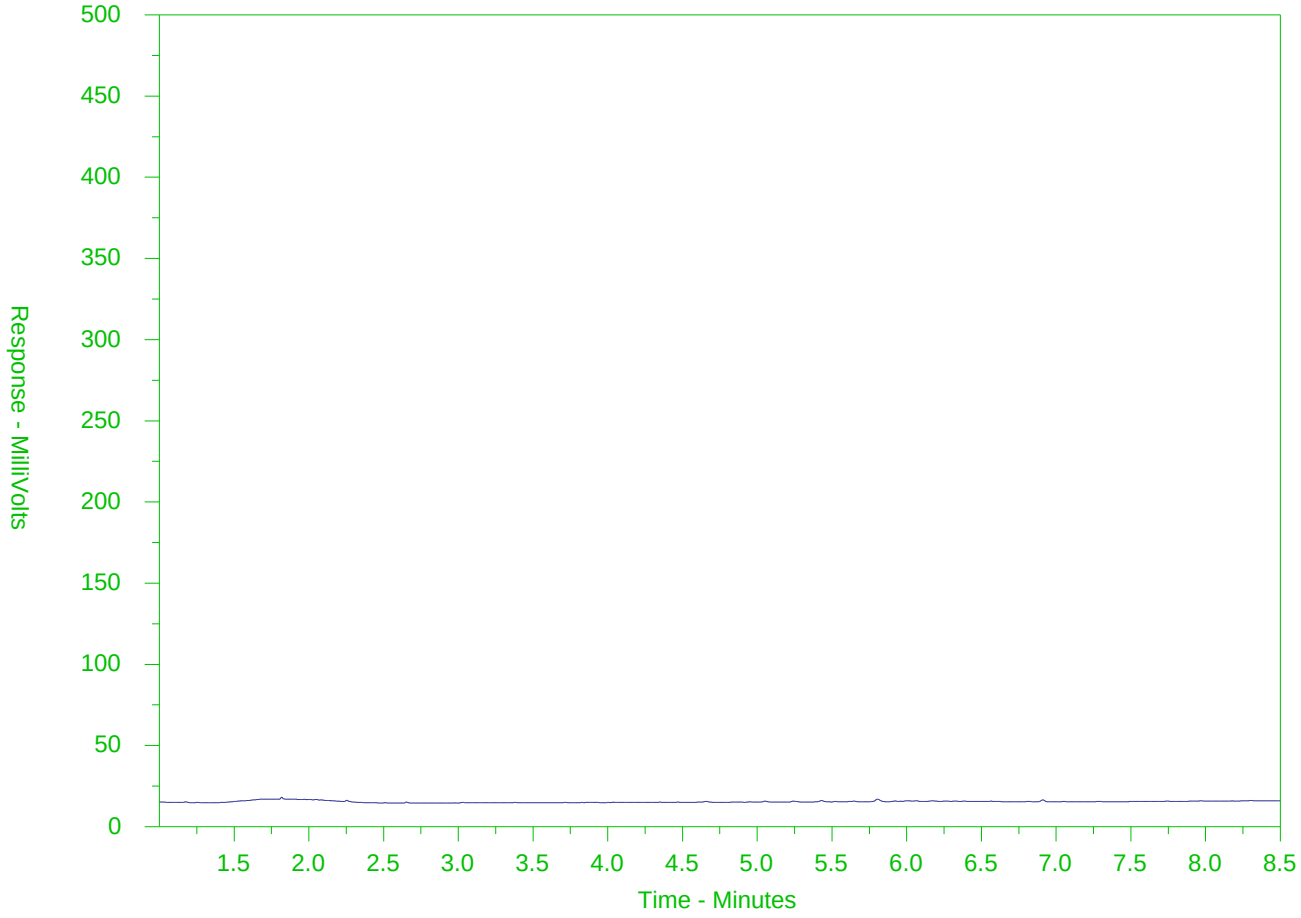
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

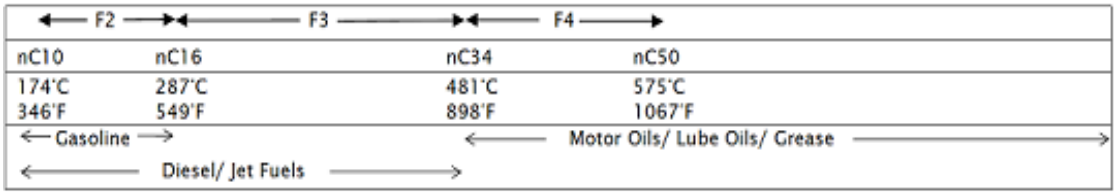
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2622962-9
Client Sample ID: EX15-21-32





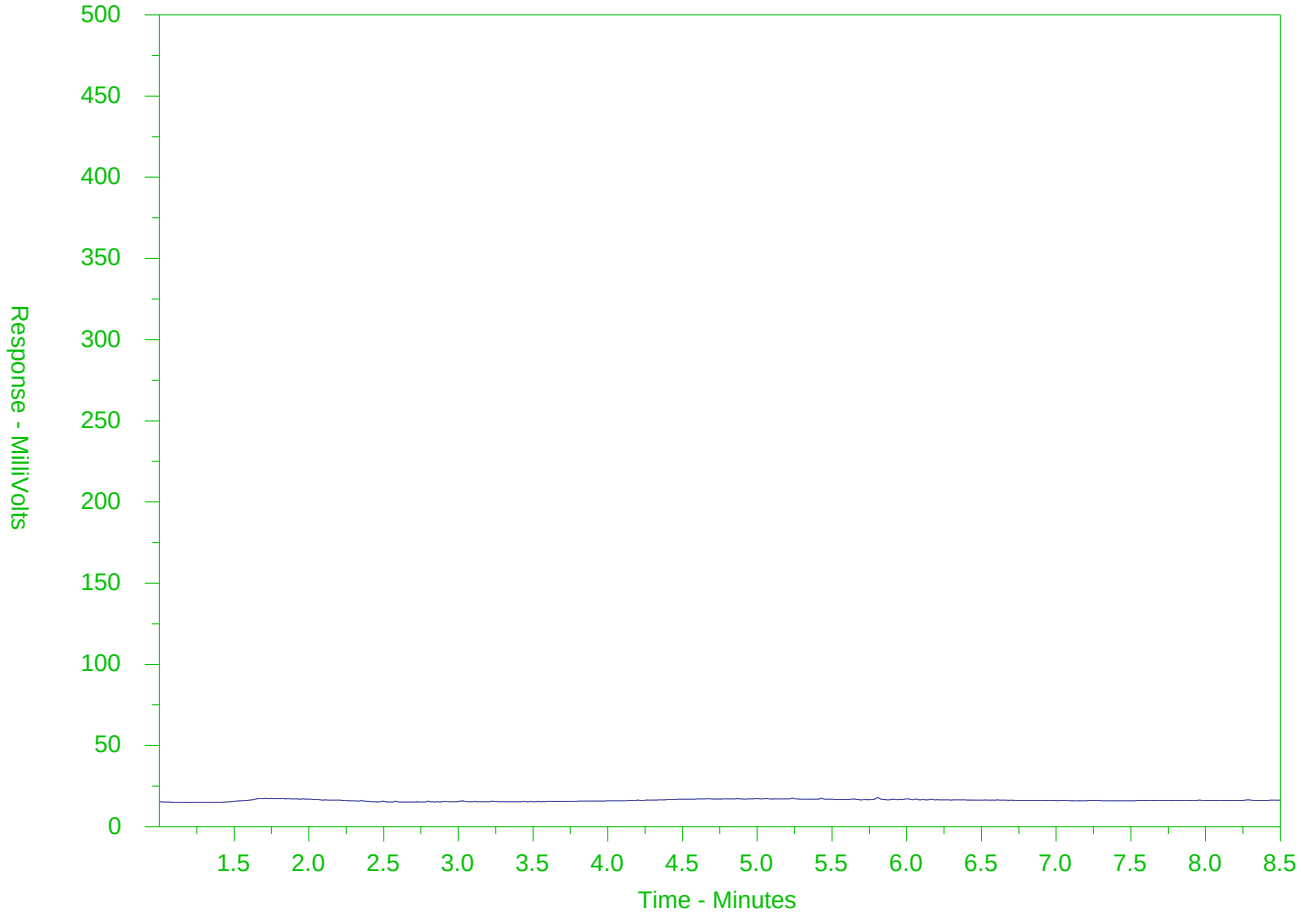
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

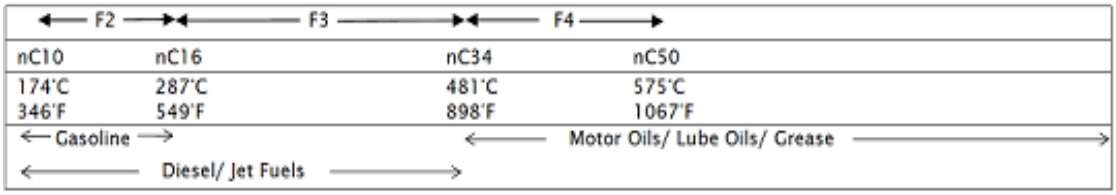
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2622962-10
Client Sample ID: EX15-21-59





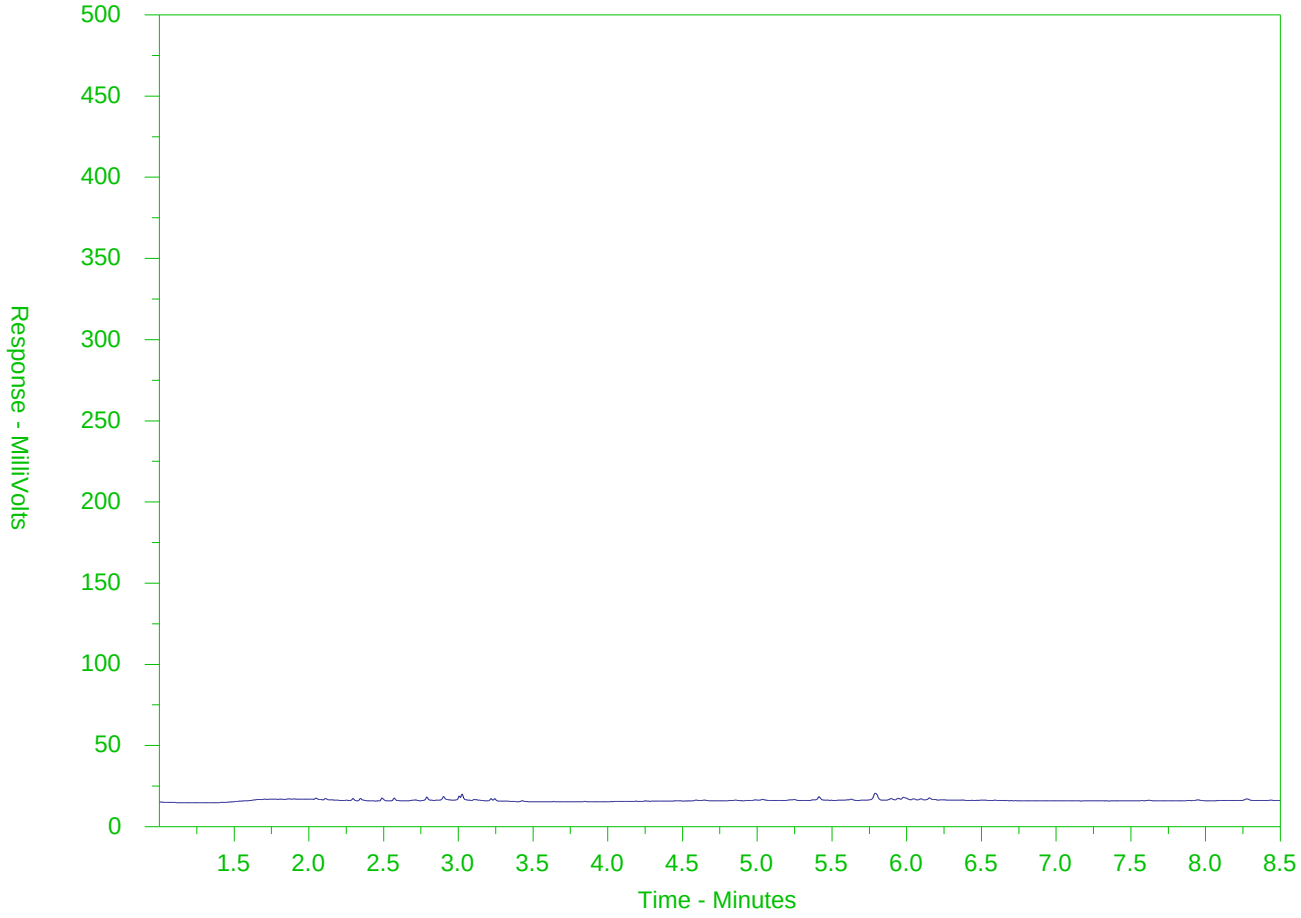
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

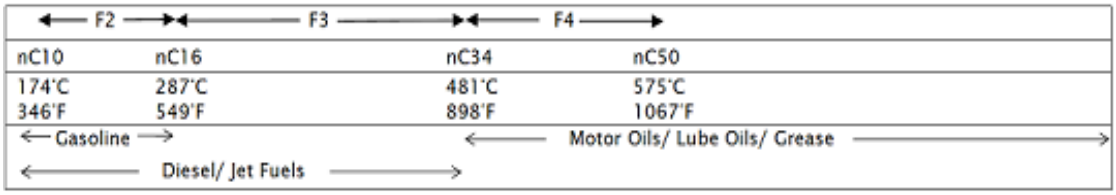
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2622962-11
Client Sample ID: EX15-21-61





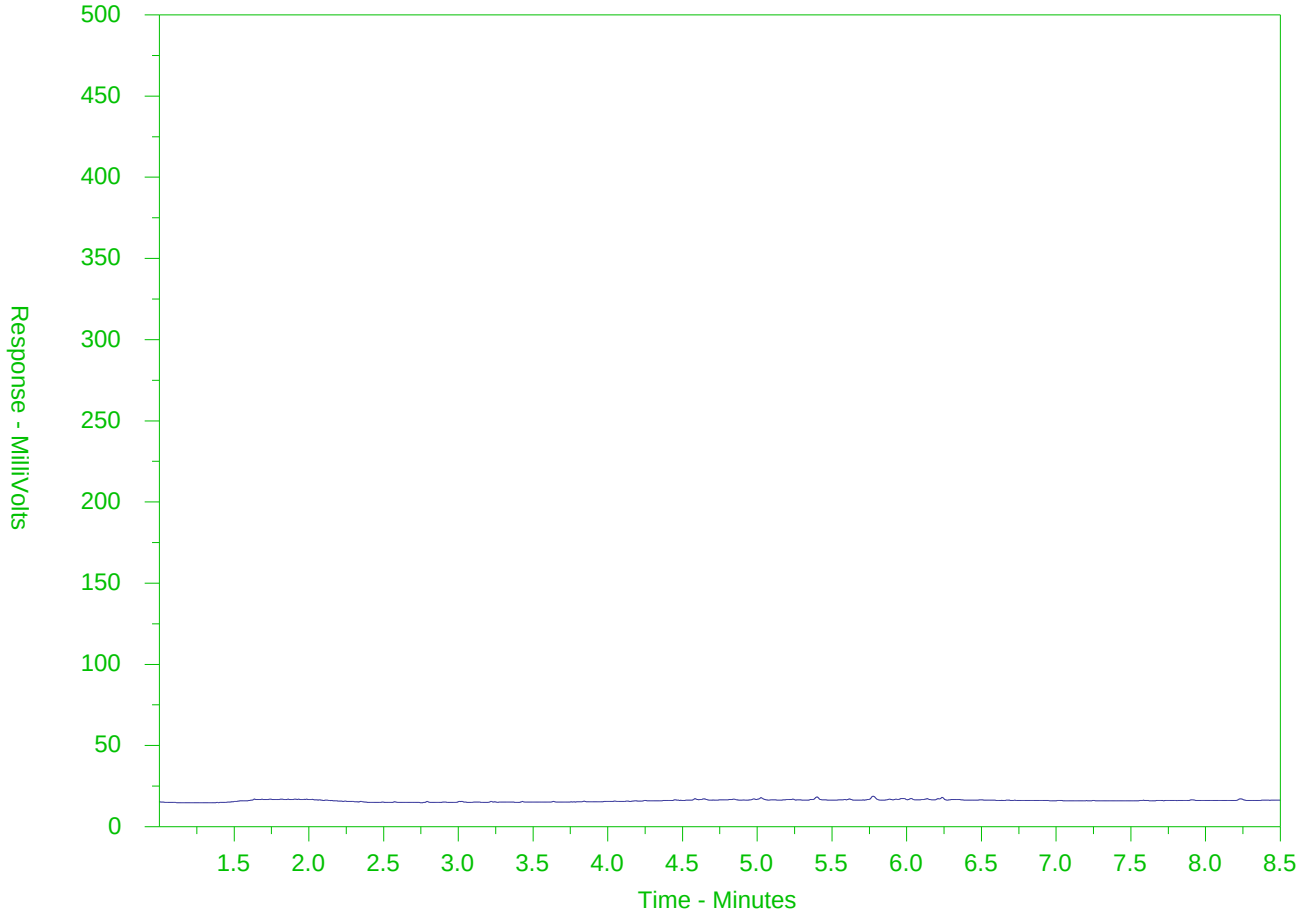
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

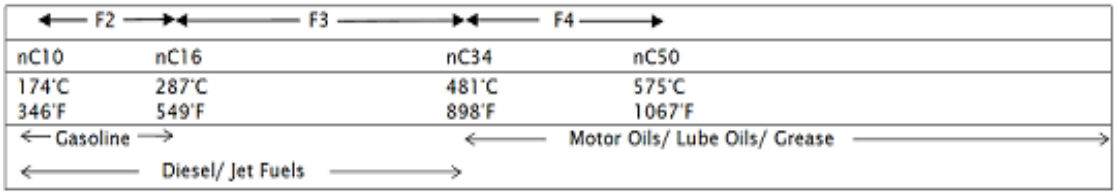
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2622962-12
Client Sample ID: EX15-21-63





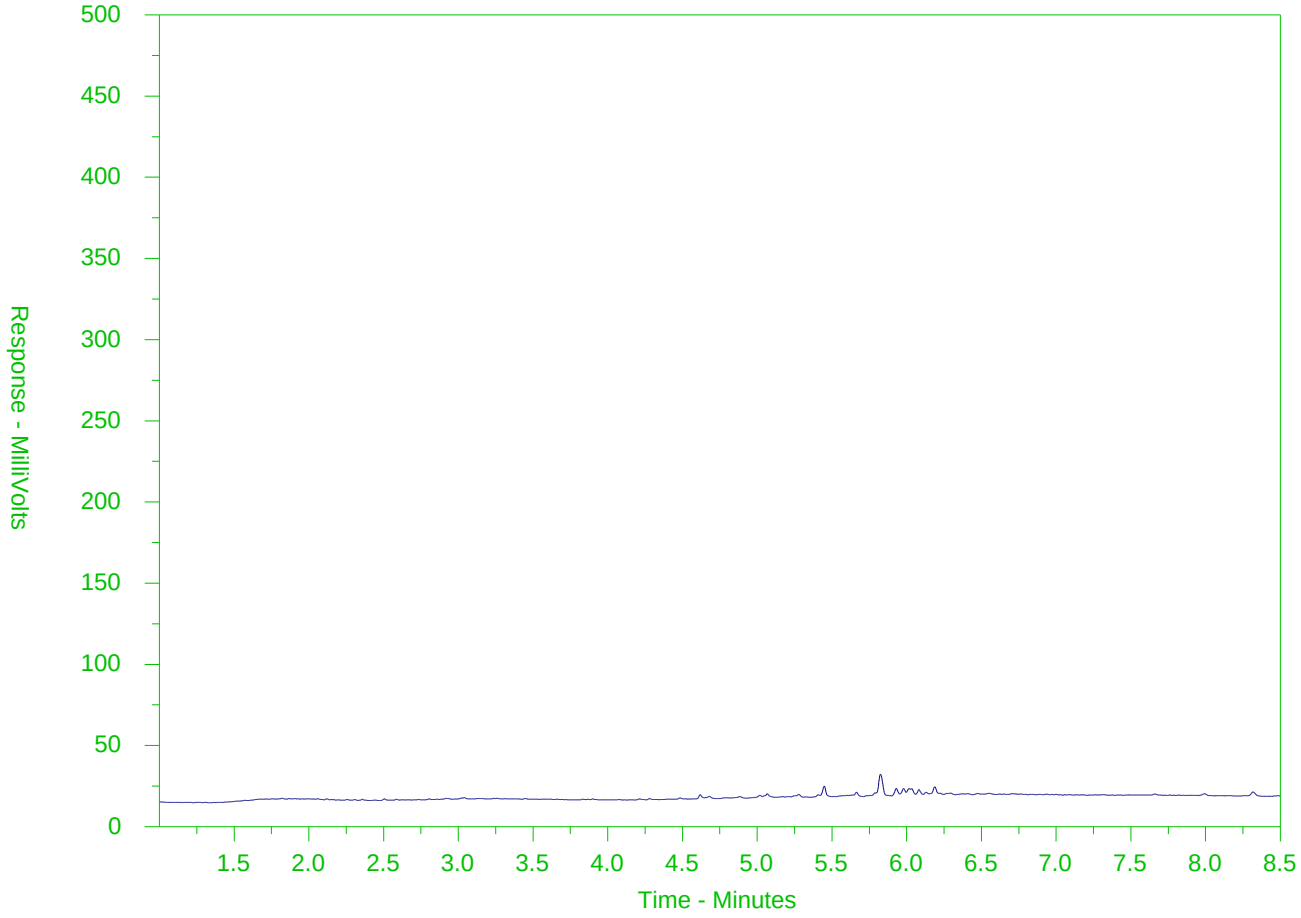
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

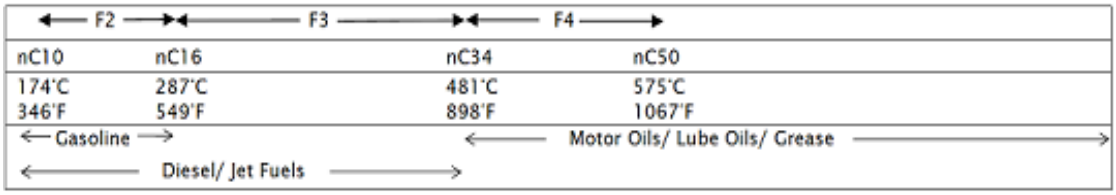
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2622962-13
Client Sample ID: EX15-21-50





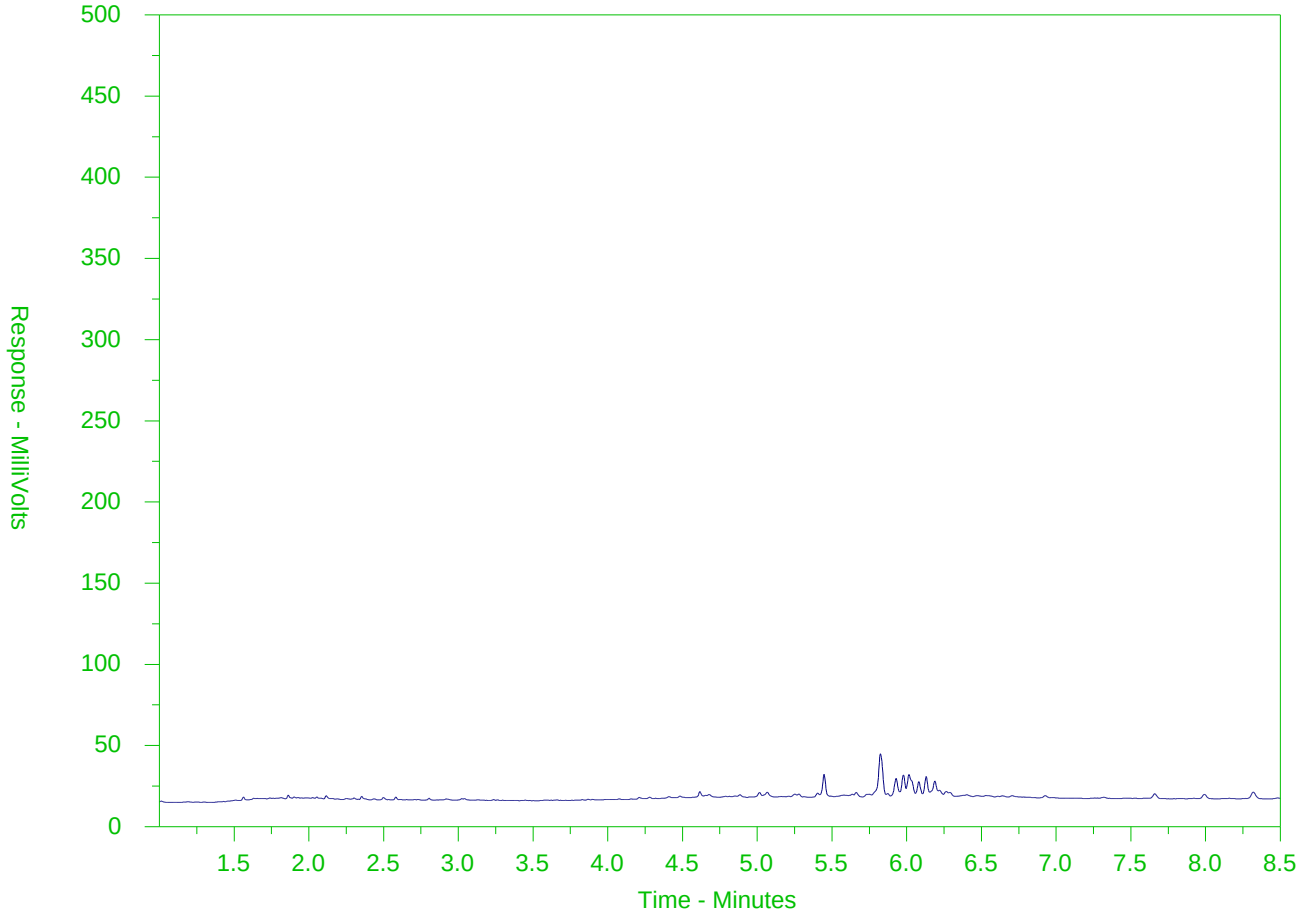
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

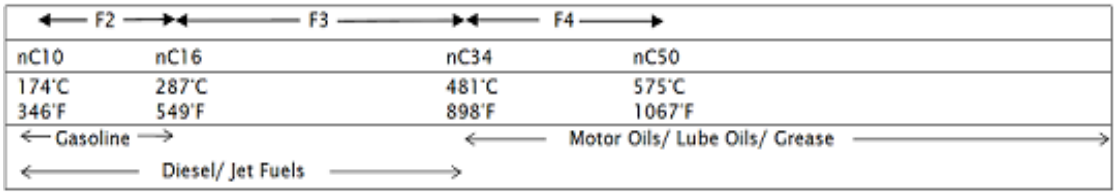
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2622962-14
Client Sample ID: EX15-21-48





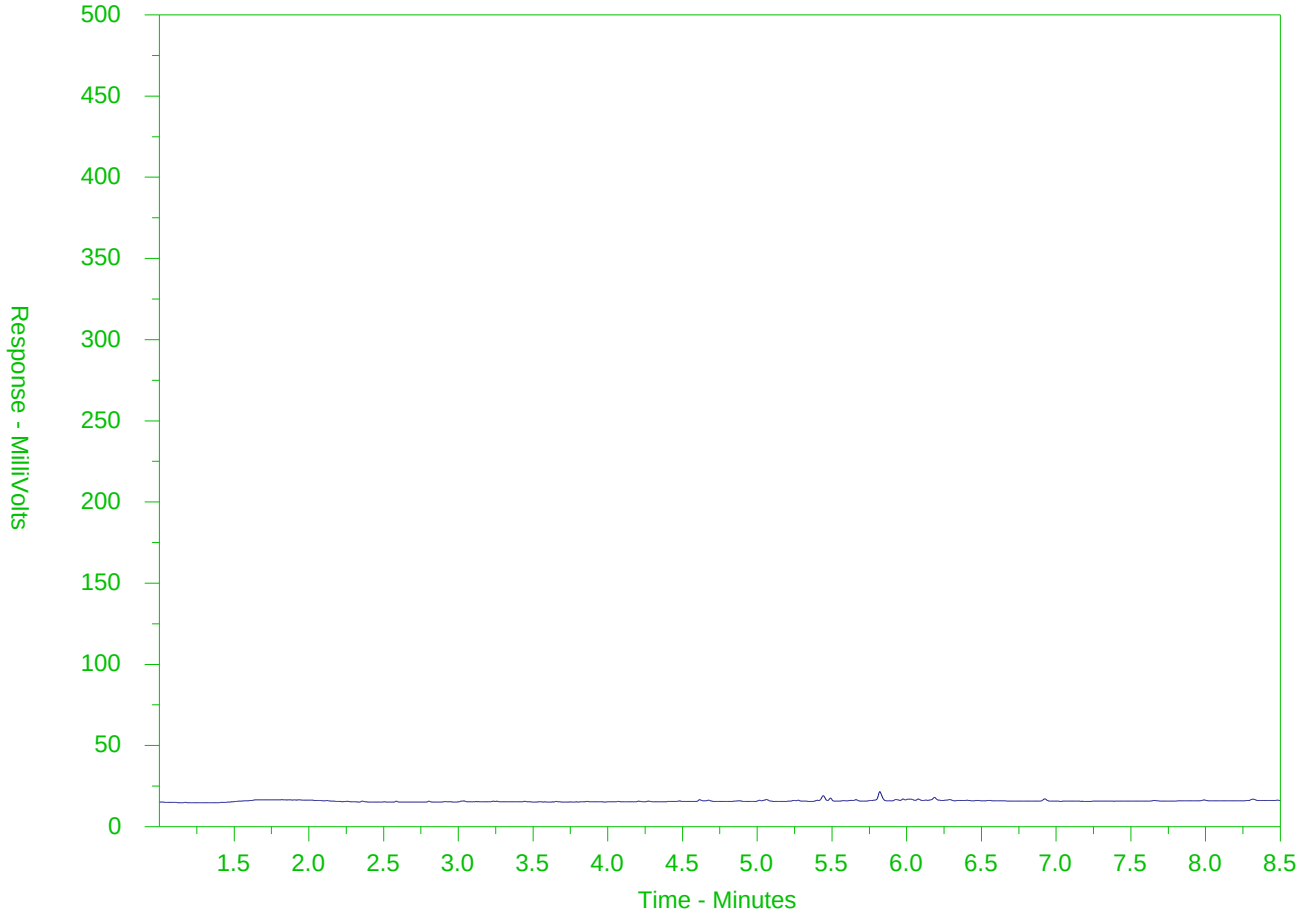
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

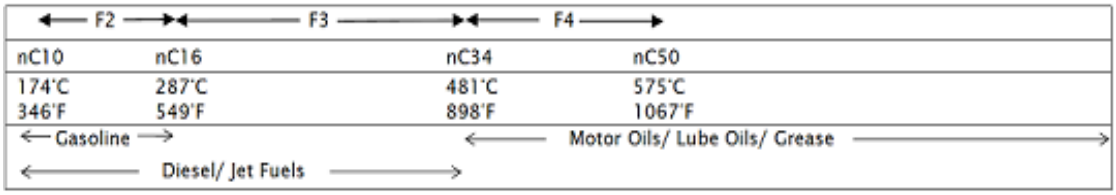
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2622962-15
Client Sample ID: EX15-21-41





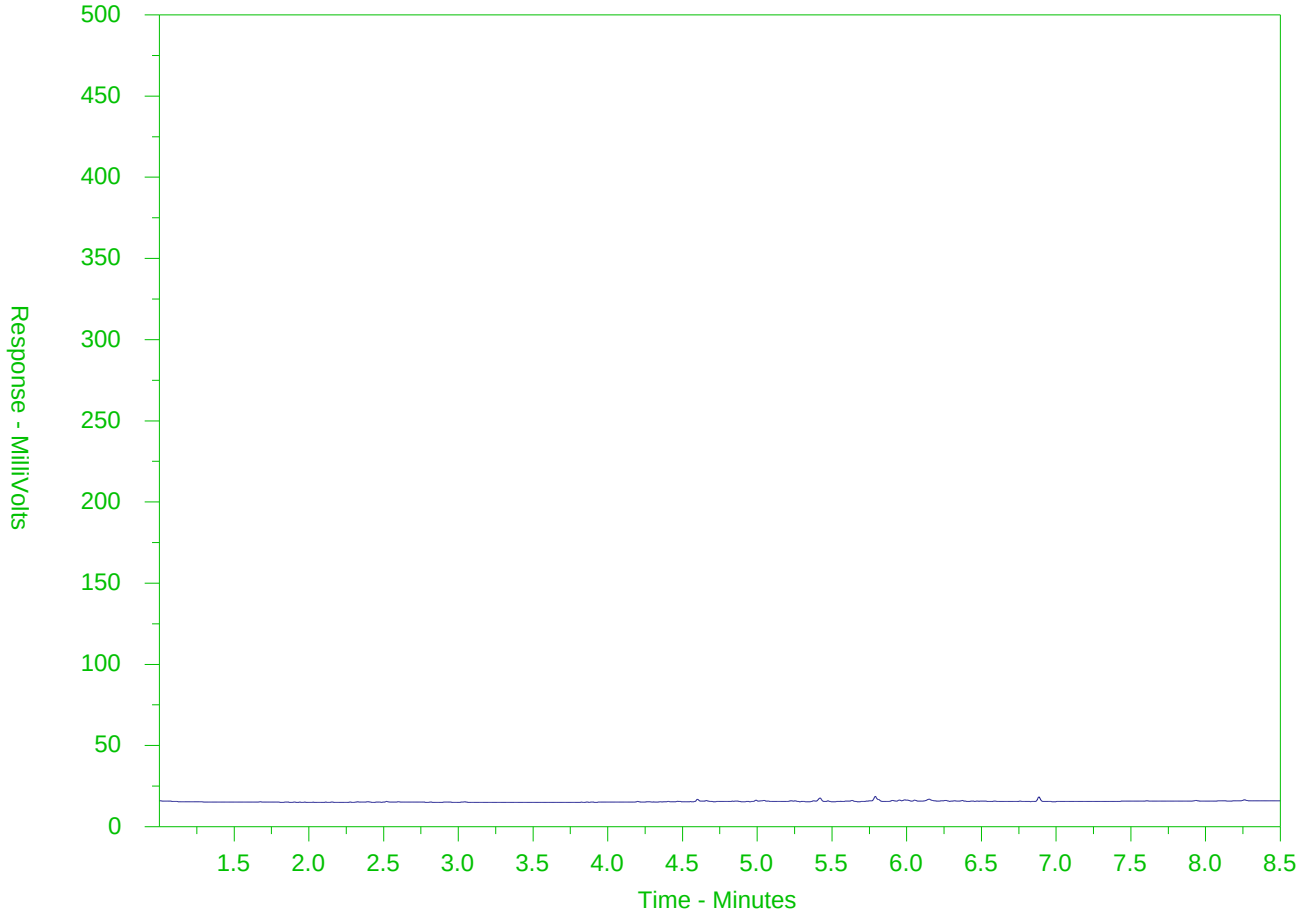
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

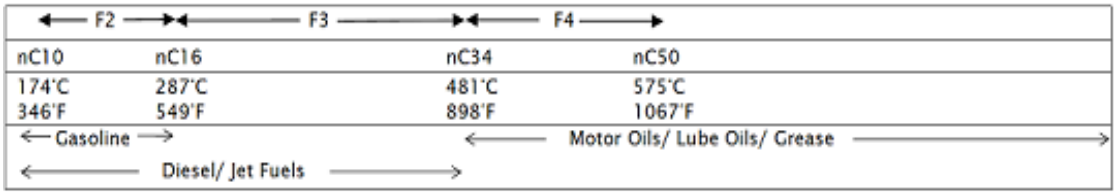
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

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Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2622962-16
Client Sample ID: EX15-21-39





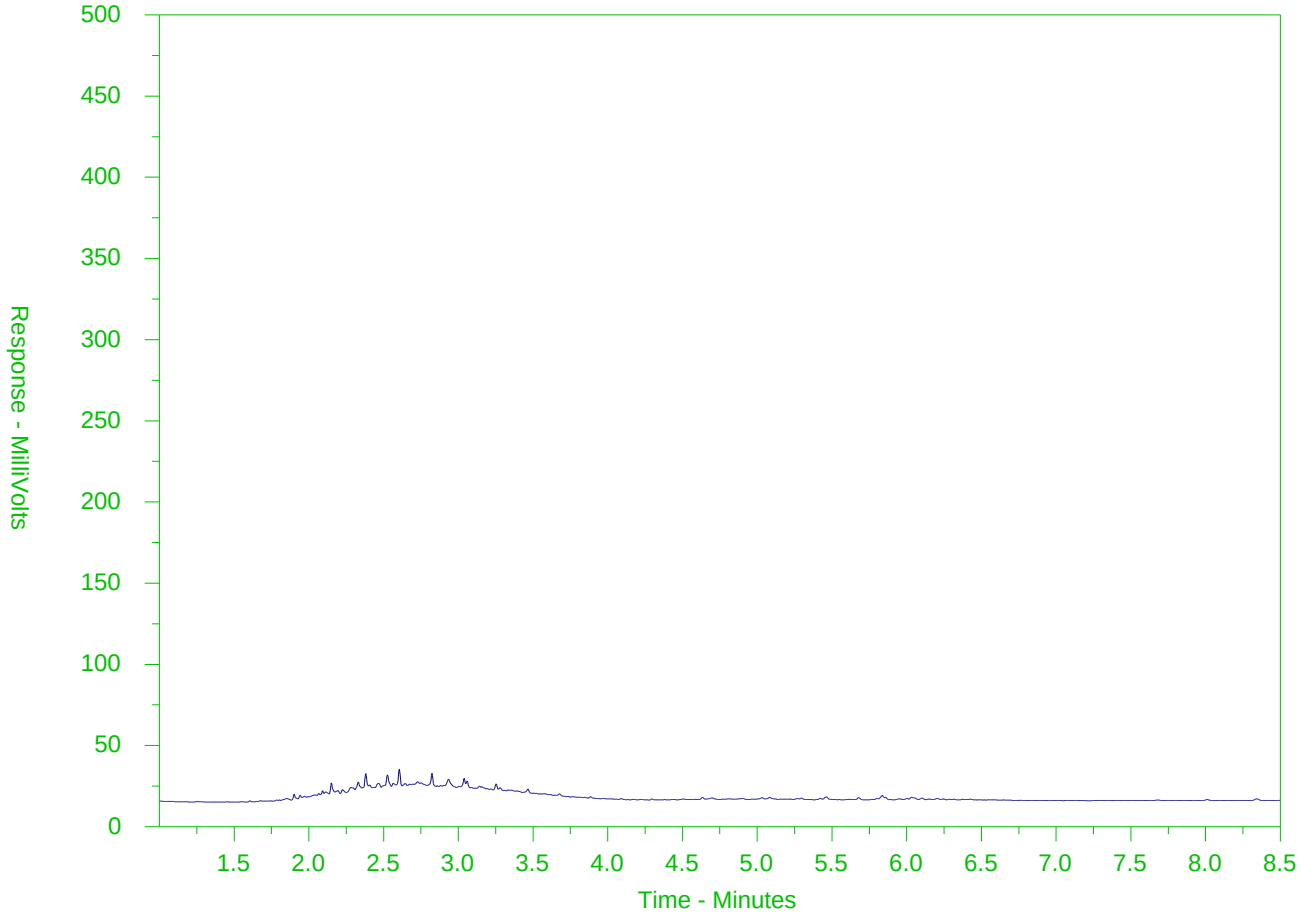
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

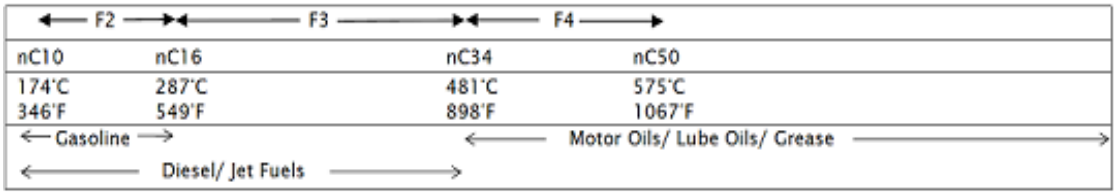
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Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2622962-17
Client Sample ID: EX15-21-58





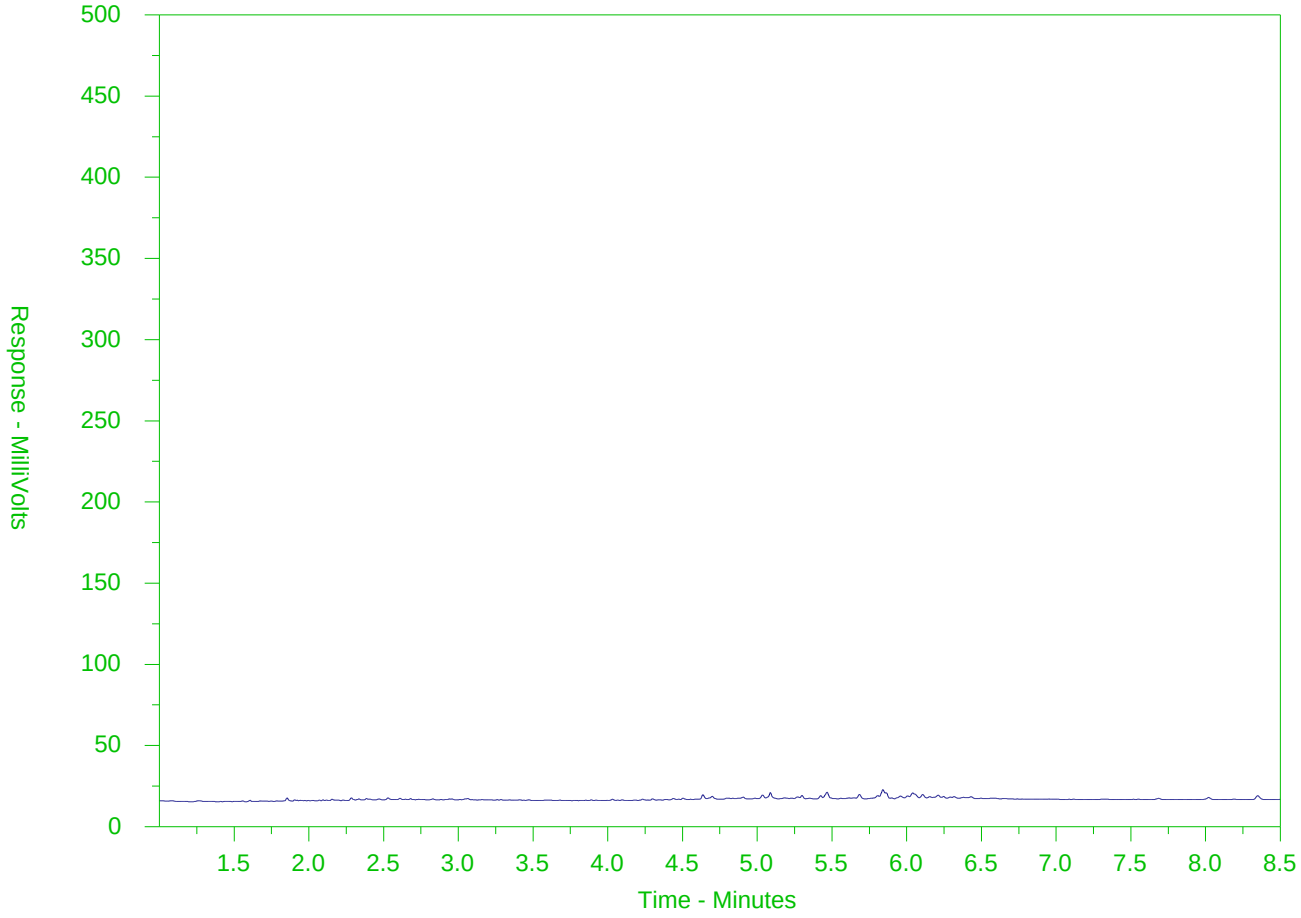
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

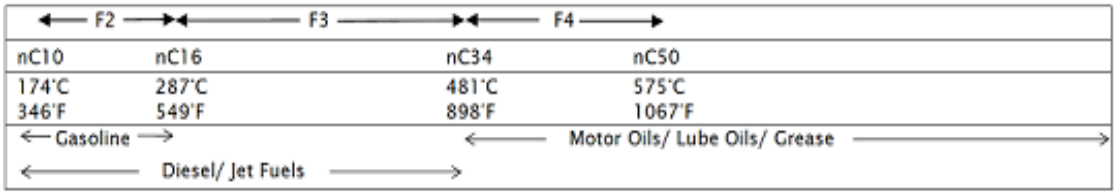
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Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2622962-18
Client Sample ID: EX15-21-54





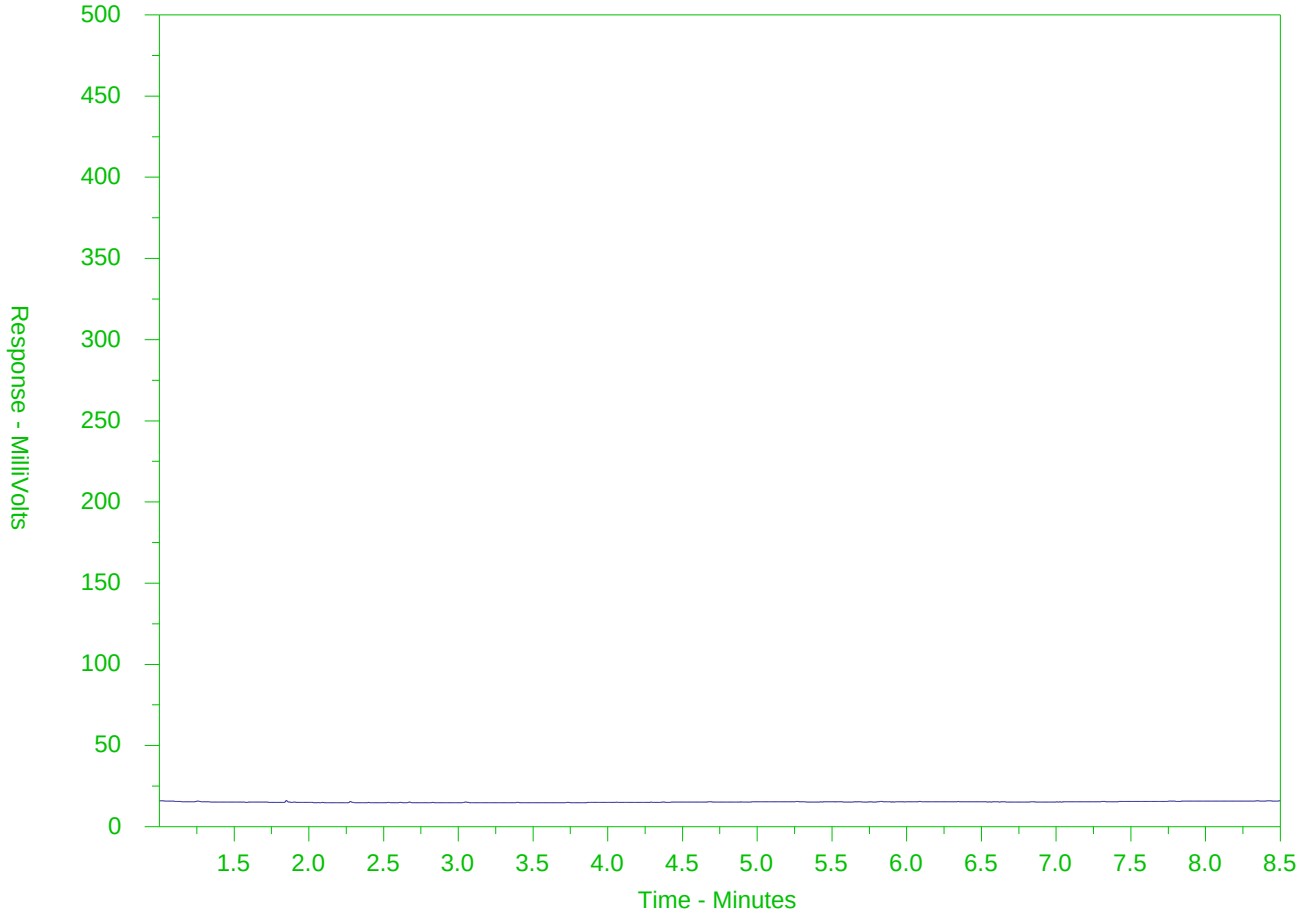
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

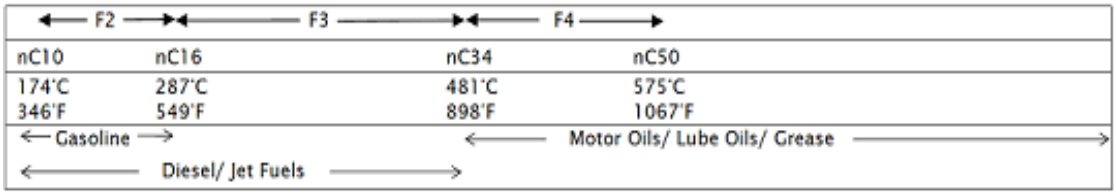
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Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2622962-19
Client Sample ID: EX15-21-10





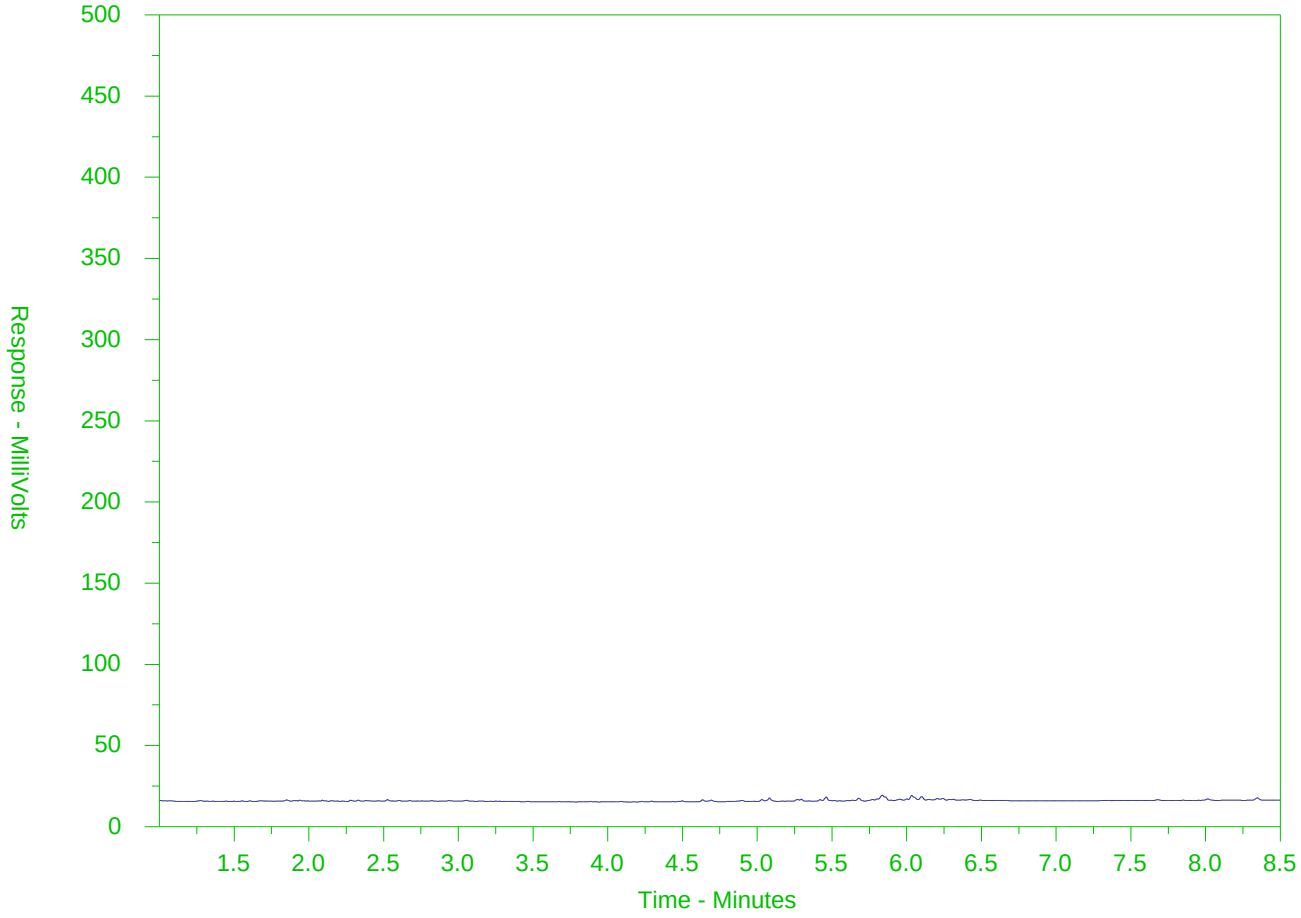
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

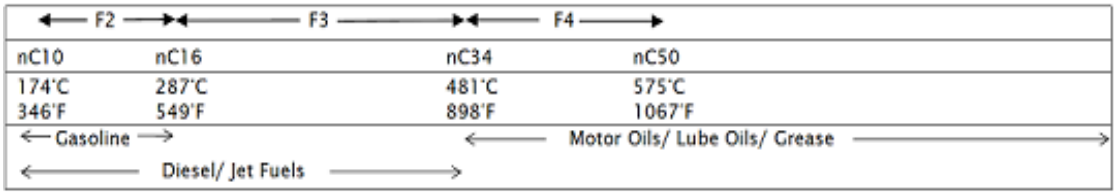
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Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2622962-20
Client Sample ID: EX15-21-9





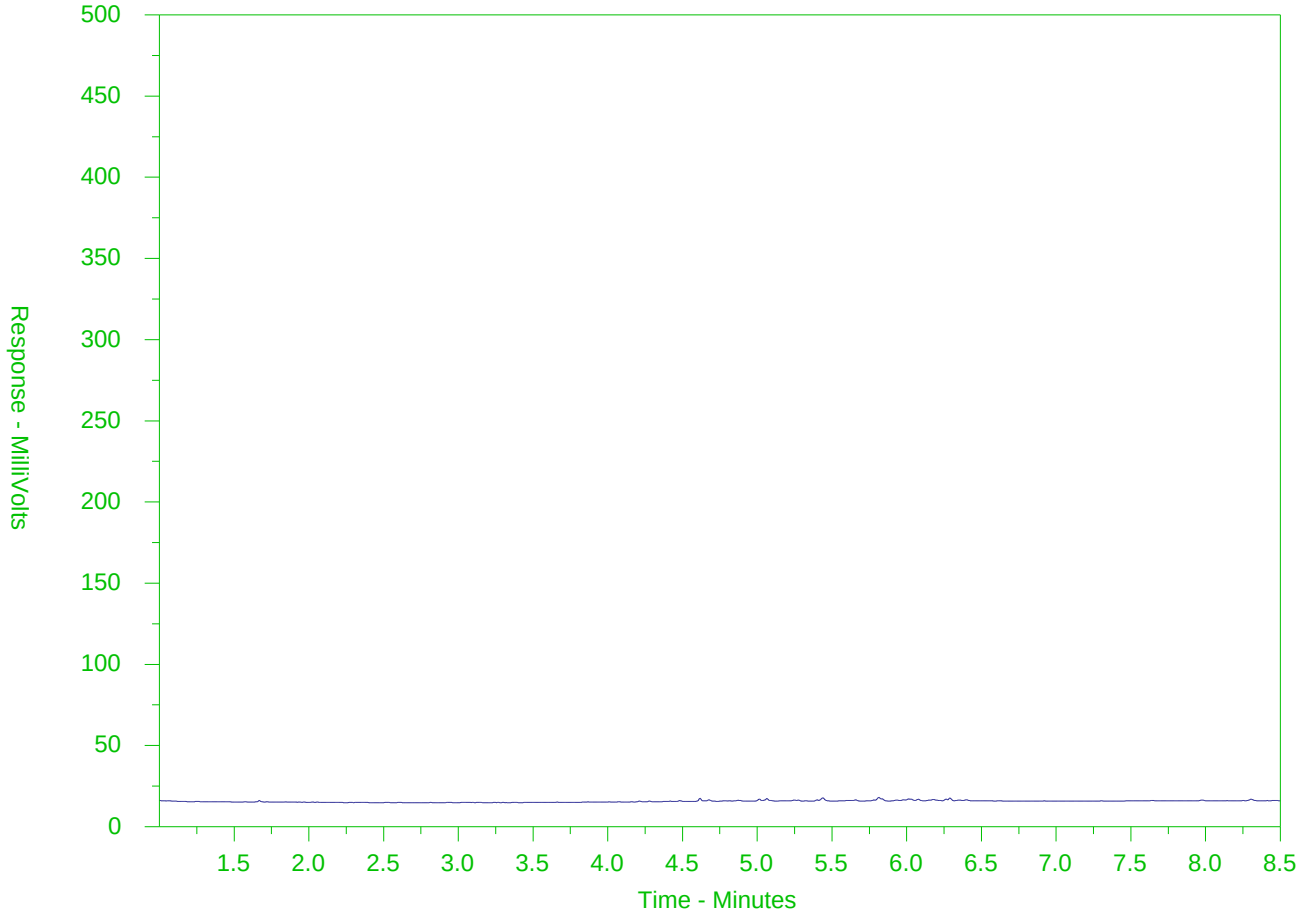
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

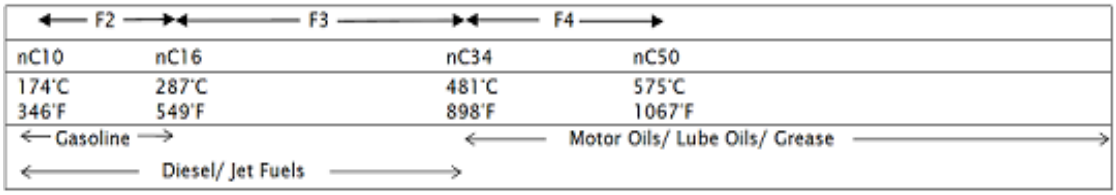
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Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2622962-21
Client Sample ID: EX15-21-63D





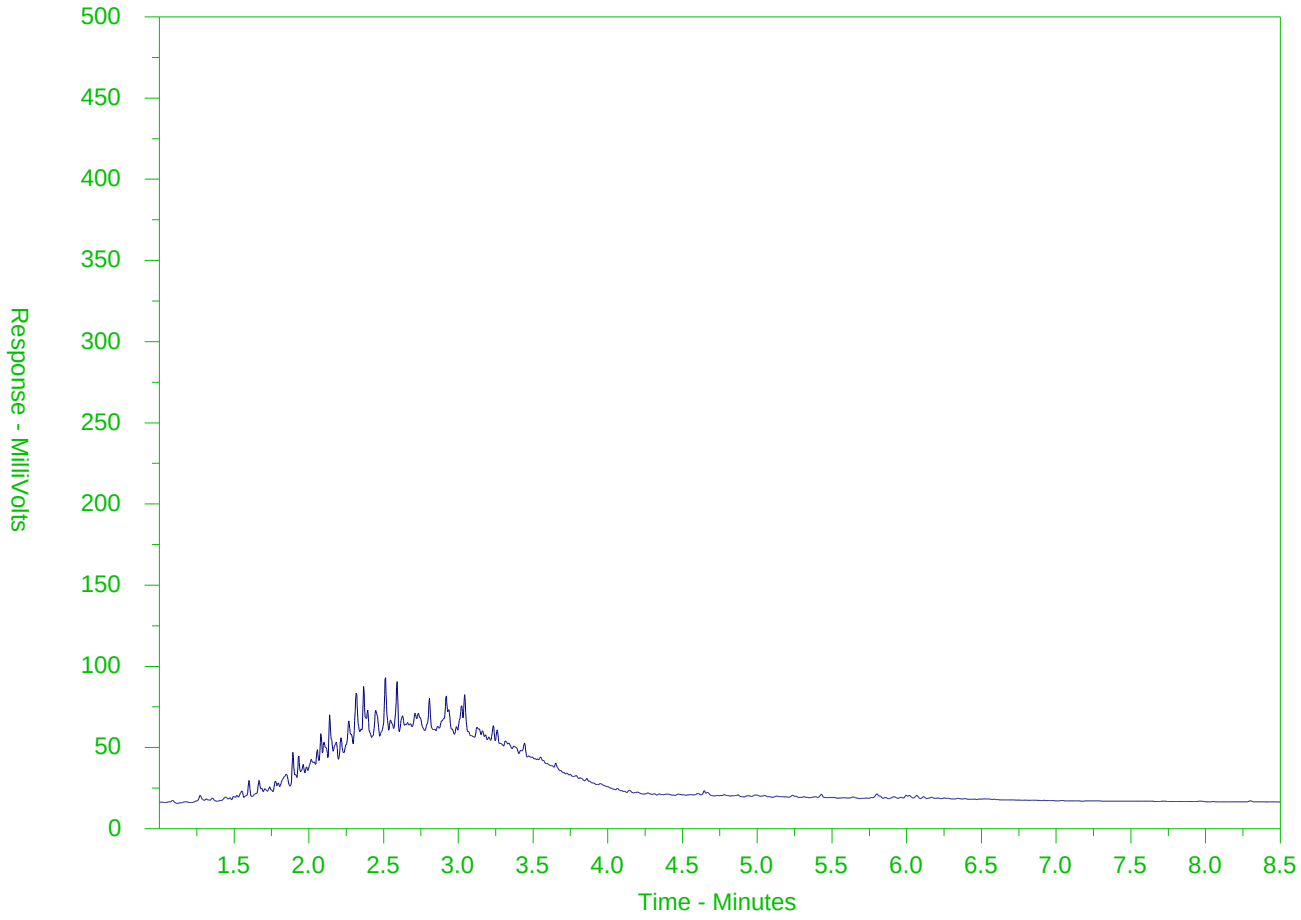
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

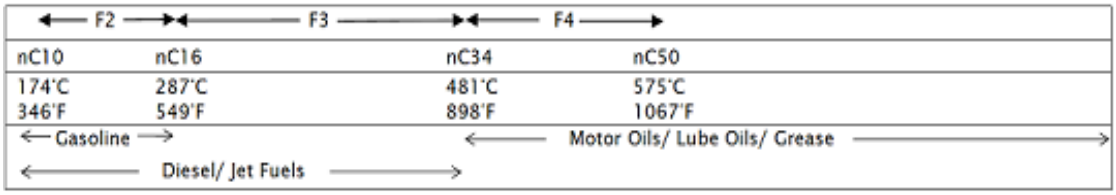
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Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2622962-22
Client Sample ID: EX15-21-38D





The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number:

Page 1 of 2

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report ☑ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax: k.lewis@mandalayresources.com
Email 2: sfiddler@golder.com
Email 3: jmusijowski@golder.com

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax:
Email 2:

Project Information

ALS Account # / Quote #: Q80711
Job #: R0446521
PO / AFE:
LSD: LUPIN MINE

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only):

ALS Contact: Oliver Gregg **Sampler:**

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☒ | Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	Lead	Arsenic	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	EX15-21-01	04-AUG-21		Soil	3	X	X			
	EX15-21-03					X	X			
	EX15-21-38					X	X			
	EX15-21-12					X	X			
	EX15-21-13					X	X			
	EX15-21-18					X	X			
	EX15-21-23					X	X			
	EX15-21-31					X	X			
	EX15-21-32					X	X			
	EX15-21-59					X	X			
	EX15-21-61					X	X			
	EX15-21-63					X	X			

L2622962-COFC

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO
Are samples for human consumption/ use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: M Munoz	Date: AUG 4, 2021	Time: 11:00	Received by:	Date:	Time:	Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCT 2018 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number:

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report ☑ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax k.lewis@mandalayresources.com
Email 2 sfiddler@golder.com
Email 3 jmusijowski@golder.com

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax
Email 2

Project Information

ALS Account # / Quote #: Q80711
Job #: 20446521
PO / AFE:
LSD: LUPIN MINE

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only):

ALS Contact: Oliver Gregg Sampler:

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ 3 day [P3-25%] ☐ 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☑ ~~X~~ Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	Lead	Arsenic	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	EX15-21 - 50	04-AUG-21		Soil	3	X	X			
	EX15-21 - 48	"		"	"	X	X			
	EX15-21 - 41	"		"	"	X	X			
	EX15-21 - 39	"		"	"	X	X			
	EX15-21 - 56	"		"	"	X	X			
	EX15-21 - 54	"		"	"	X	X			
	EX15-21 - 10	"		"	"	X	X			
	EX15-21 - 9	"		"	"	X	X			
	EX15-21 - 63D	"		"	"	X	X			
	EX15-21 - 38D	"		"	"	X	X			

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human consumption/ use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			

SHIPMENT RELEASE (client use)

Released by:	Date:	Time:
M-Fondro	Aug 4, 2021	14:00

INITIAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:

FINAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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OCT 2018 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

GOLDER ASSOCIATES LTD
ATTN: Steven Fiddler
16820 107 Ave NW
Edmonton AB T5P 4C3

Date Received: 10-AUG-21
Report Date: 13-AUG-21 16:58 (MT)
Version: FINAL

Client Phone: 780-483-3499

Certificate of Analysis

Lab Work Order #: L2624667

Project P.O. #: NOT SUBMITTED
Job Reference: LUPIN 10402
C of C Numbers:
Legal Site Desc:

Harman Bhullar
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2624667-1 LINER #1							
Sampled By: CLIENT on 06-AUG-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	12-AUG-21	12-AUG-21	R5548775
Ethylbenzene	<0.015		0.015	mg/kg	12-AUG-21	12-AUG-21	R5548775
Toluene	<0.014		0.014	mg/kg	12-AUG-21	12-AUG-21	R5548775
o-Xylene	<0.050		0.050	mg/kg	12-AUG-21	12-AUG-21	R5548775
m+p-Xylene	<0.050		0.050	mg/kg	12-AUG-21	12-AUG-21	R5548775
Surrogate: 1,4-Difluorobenzene	105.4		70-130	%	12-AUG-21	12-AUG-21	R5548775
Surrogate: 4-Bromofluorobenzene	98.6		70-130	%	12-AUG-21	12-AUG-21	R5548775
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	12-AUG-21	12-AUG-21	R5547203
Prep/Analysis Dates					12-AUG-21	12-AUG-21	R5547203
Surrogate: 2-Bromobenzotrifluoride	85.0		70-130	%	12-AUG-21	12-AUG-21	R5547203
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		12-AUG-21	
F1-BTEX	<10		10	mg/kg		12-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		12-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		12-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		12-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		12-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	108.5		70-130	%	12-AUG-21	12-AUG-21	R5548780
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		12-AUG-21	
Miscellaneous Parameters							
Moisture	4.62		0.25	%		12-AUG-21	R5548975
L2624667-2 LINER #2							
Sampled By: CLIENT on 06-AUG-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	12-AUG-21	12-AUG-21	R5548775
Ethylbenzene	<0.015		0.015	mg/kg	12-AUG-21	12-AUG-21	R5548775
Toluene	<0.014		0.014	mg/kg	12-AUG-21	12-AUG-21	R5548775
o-Xylene	<0.050		0.050	mg/kg	12-AUG-21	12-AUG-21	R5548775
m+p-Xylene	<0.050		0.050	mg/kg	12-AUG-21	12-AUG-21	R5548775
Surrogate: 1,4-Difluorobenzene	104.6		70-130	%	12-AUG-21	12-AUG-21	R5548775
Surrogate: 4-Bromofluorobenzene	116.9		70-130	%	12-AUG-21	12-AUG-21	R5548775
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	12-AUG-21	12-AUG-21	R5547203
Prep/Analysis Dates					12-AUG-21	12-AUG-21	R5547203
Surrogate: 2-Bromobenzotrifluoride	92.0		70-130	%	12-AUG-21	12-AUG-21	R5547203
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		12-AUG-21	
F1-BTEX	<10		10	mg/kg		12-AUG-21	
F2 (C10-C16)	1990		25	mg/kg		12-AUG-21	
F3 (C16-C34)	1230		50	mg/kg		12-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		12-AUG-21	
Total Hydrocarbons (C6-C50)	3220		50	mg/kg		12-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	N/A	SMI	-	%	12-AUG-21	12-AUG-21	R5548780
Sum of Xylene Isomer Concentrations							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2624667-2 LINER #2							
Sampled By: CLIENT on 06-AUG-21							
Matrix: Soil							
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		12-AUG-21	
Miscellaneous Parameters							
Moisture	4.87		0.25	%		12-AUG-21	R5548975
L2624667-3 LINER #3							
Sampled By: CLIENT on 06-AUG-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0080	DLCI	0.0080	mg/kg	12-AUG-21	12-AUG-21	R5548775
Ethylbenzene	2.91		0.015	mg/kg	12-AUG-21	12-AUG-21	R5548775
Toluene	<0.023	DLCI	0.023	mg/kg	12-AUG-21	12-AUG-21	R5548775
o-Xylene	5.49		0.050	mg/kg	12-AUG-21	12-AUG-21	R5548775
m+p-Xylene	3.13		0.050	mg/kg	12-AUG-21	12-AUG-21	R5548775
Surrogate: 1,4-Difluorobenzene	100.0		70-130	%	12-AUG-21	12-AUG-21	R5548775
Surrogate: 4-Bromofluorobenzene	115.8		70-130	%	12-AUG-21	12-AUG-21	R5548775
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	12-AUG-21	12-AUG-21	R5547203
Prep/Analysis Dates					12-AUG-21	12-AUG-21	R5547203
Surrogate: 2-Bromobenzotrifluoride	119.7		70-130	%	12-AUG-21	12-AUG-21	R5547203
CCME Total Hydrocarbons							
F1 (C6-C10)	272		10	mg/kg		12-AUG-21	
F1-BTEX	260		10	mg/kg		12-AUG-21	
F2 (C10-C16)	3860		25	mg/kg		12-AUG-21	
F3 (C16-C34)	1520		50	mg/kg		12-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		12-AUG-21	
Total Hydrocarbons (C6-C50)	5650		50	mg/kg		12-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	N/A	SMI	-	%	12-AUG-21	12-AUG-21	R5548780
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	8.62		0.071	mg/kg		12-AUG-21	
Miscellaneous Parameters							
Moisture	11.0		0.25	%		12-AUG-21	R5548975
L2624667-4 LINER #4							
Sampled By: CLIENT on 06-AUG-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	12-AUG-21	12-AUG-21	R5548775
Ethylbenzene	0.027		0.015	mg/kg	12-AUG-21	12-AUG-21	R5548775
Toluene	<0.014		0.014	mg/kg	12-AUG-21	12-AUG-21	R5548775
o-Xylene	0.393		0.050	mg/kg	12-AUG-21	12-AUG-21	R5548775
m+p-Xylene	0.143		0.050	mg/kg	12-AUG-21	12-AUG-21	R5548775
Surrogate: 1,4-Difluorobenzene	96.3		70-130	%	12-AUG-21	12-AUG-21	R5548775
Surrogate: 4-Bromofluorobenzene	123.1		70-130	%	12-AUG-21	12-AUG-21	R5548775
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	12-AUG-21	12-AUG-21	R5547203
Prep/Analysis Dates					12-AUG-21	12-AUG-21	R5547203
Surrogate: 2-Bromobenzotrifluoride	82.0		70-130	%	12-AUG-21	12-AUG-21	R5547203
CCME Total Hydrocarbons							
F1 (C6-C10)	20		10	mg/kg		12-AUG-21	
F1-BTEX	19		10	mg/kg		12-AUG-21	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2624667-4 LINER #4							
Sampled By: CLIENT on 06-AUG-21							
Matrix: Soil							
CCME Total Hydrocarbons							
F2 (C10-C16)	279		25	mg/kg		12-AUG-21	
F3 (C16-C34)	110		50	mg/kg		12-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		12-AUG-21	
Total Hydrocarbons (C6-C50)	409		50	mg/kg		12-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	93.5		70-130	%	12-AUG-21	12-AUG-21	R5548780
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	0.536		0.071	mg/kg		12-AUG-21	
Miscellaneous Parameters							
Moisture	9.57		0.25	%		12-AUG-21	R5548975
L2624667-5 LINER #5							
Sampled By: CLIENT on 07-AUG-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	12-AUG-21	12-AUG-21	R5548775
Ethylbenzene	0.028		0.015	mg/kg	12-AUG-21	12-AUG-21	R5548775
Toluene	<0.014		0.014	mg/kg	12-AUG-21	12-AUG-21	R5548775
o-Xylene	0.055		0.050	mg/kg	12-AUG-21	12-AUG-21	R5548775
m+p-Xylene	<0.050		0.050	mg/kg	12-AUG-21	12-AUG-21	R5548775
Surrogate: 1,4-Difluorobenzene	99.4		70-130	%	12-AUG-21	12-AUG-21	R5548775
Surrogate: 4-Bromofluorobenzene	122.0		70-130	%	12-AUG-21	12-AUG-21	R5548775
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	12-AUG-21	12-AUG-21	R5547203
Prep/Analysis Dates					12-AUG-21	12-AUG-21	R5547203
Surrogate: 2-Bromobenzotrifluoride	79.0		70-130	%	12-AUG-21	12-AUG-21	R5547203
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		12-AUG-21	
F1-BTEX	<10		10	mg/kg		12-AUG-21	
F2 (C10-C16)	38		25	mg/kg		12-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		12-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		12-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		12-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	86.9		70-130	%	12-AUG-21	12-AUG-21	R5548780
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		12-AUG-21	
Miscellaneous Parameters							
Moisture	10.4		0.25	%		12-AUG-21	R5548975
L2624667-6 LINER #6							
Sampled By: CLIENT on 07-AUG-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	12-AUG-21	12-AUG-21	R5548775
Ethylbenzene	0.030		0.015	mg/kg	12-AUG-21	12-AUG-21	R5548775
Toluene	<0.014		0.014	mg/kg	12-AUG-21	12-AUG-21	R5548775
o-Xylene	<0.050		0.050	mg/kg	12-AUG-21	12-AUG-21	R5548775
m+p-Xylene	<0.050		0.050	mg/kg	12-AUG-21	12-AUG-21	R5548775
Surrogate: 1,4-Difluorobenzene	107.2		70-130	%	12-AUG-21	12-AUG-21	R5548775
Surrogate: 4-Bromofluorobenzene	127.0		70-130	%	12-AUG-21	12-AUG-21	R5548775

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2624667-6 LINER #6							
Sampled By: CLIENT on 07-AUG-21							
Matrix: Soil							
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	12-AUG-21	12-AUG-21	R5547203
Prep/Analysis Dates					12-AUG-21	12-AUG-21	R5547203
Surrogate: 2-Bromobenzotrifluoride	97.5		70-130	%	12-AUG-21	12-AUG-21	R5547203
CCME Total Hydrocarbons							
F1 (C6-C10)	37		10	mg/kg		12-AUG-21	
F1-BTEX	37		10	mg/kg		12-AUG-21	
F2 (C10-C16)	611		25	mg/kg		12-AUG-21	
F3 (C16-C34)	91		50	mg/kg		12-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		12-AUG-21	
Total Hydrocarbons (C6-C50)	739		50	mg/kg		12-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	116.0		70-130	%	12-AUG-21	12-AUG-21	R5548780
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		12-AUG-21	
Miscellaneous Parameters							
Moisture	10.3		0.25	%		12-AUG-21	R5548975
L2624667-7 LINER #7							
Sampled By: CLIENT on 07-AUG-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	12-AUG-21	12-AUG-21	R5548775
Ethylbenzene	<0.015		0.015	mg/kg	12-AUG-21	12-AUG-21	R5548775
Toluene	<0.014		0.014	mg/kg	12-AUG-21	12-AUG-21	R5548775
o-Xylene	<0.050		0.050	mg/kg	12-AUG-21	12-AUG-21	R5548775
m+p-Xylene	<0.050		0.050	mg/kg	12-AUG-21	12-AUG-21	R5548775
Surrogate: 1,4-Difluorobenzene	110.2		70-130	%	12-AUG-21	12-AUG-21	R5548775
Surrogate: 4-Bromofluorobenzene	116.5		70-130	%	12-AUG-21	12-AUG-21	R5548775
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	12-AUG-21	12-AUG-21	R5547203
Prep/Analysis Dates					12-AUG-21	12-AUG-21	R5547203
Surrogate: 2-Bromobenzotrifluoride	80.6		70-130	%	12-AUG-21	12-AUG-21	R5547203
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		12-AUG-21	
F1-BTEX	<10		10	mg/kg		12-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		12-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		12-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		12-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		12-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	99.2		70-130	%	12-AUG-21	12-AUG-21	R5548780
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		12-AUG-21	
Miscellaneous Parameters							
Moisture	2.59		0.25	%		12-AUG-21	R5548975
L2624667-8 LINER #8							
Sampled By: CLIENT on 07-AUG-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	12-AUG-21	12-AUG-21	R5548775

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2624667-8 LINER #8							
Sampled By: CLIENT on 07-AUG-21							
Matrix: Soil							
BTEX and Styrene							
Ethylbenzene	<0.015		0.015	mg/kg	12-AUG-21	12-AUG-21	R5548775
Toluene	<0.014		0.014	mg/kg	12-AUG-21	12-AUG-21	R5548775
o-Xylene	<0.050		0.050	mg/kg	12-AUG-21	12-AUG-21	R5548775
m+p-Xylene	<0.050		0.050	mg/kg	12-AUG-21	12-AUG-21	R5548775
Surrogate: 1,4-Difluorobenzene	110.2		70-130	%	12-AUG-21	12-AUG-21	R5548775
Surrogate: 4-Bromofluorobenzene	104.4		70-130	%	12-AUG-21	12-AUG-21	R5548775
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	12-AUG-21	12-AUG-21	R5547203
Prep/Analysis Dates					12-AUG-21	12-AUG-21	R5547203
Surrogate: 2-Bromobenzotrifluoride	83.5		70-130	%	12-AUG-21	12-AUG-21	R5547203
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		12-AUG-21	
F1-BTEX	<10		10	mg/kg		12-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		12-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		12-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		12-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		12-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	101.4		70-130	%	12-AUG-21	12-AUG-21	R5548780
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		12-AUG-21	
Miscellaneous Parameters							
Moisture	4.14		0.25	%		12-AUG-21	R5548975
L2624667-9 EX 20-21-01							
Sampled By: CLIENT on 08-AUG-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	12-AUG-21	12-AUG-21	R5548775
Ethylbenzene	<0.015		0.015	mg/kg	12-AUG-21	12-AUG-21	R5548775
Toluene	<0.014		0.014	mg/kg	12-AUG-21	12-AUG-21	R5548775
o-Xylene	<0.050		0.050	mg/kg	12-AUG-21	12-AUG-21	R5548775
m+p-Xylene	<0.050		0.050	mg/kg	12-AUG-21	12-AUG-21	R5548775
Surrogate: 1,4-Difluorobenzene	104.3		70-130	%	12-AUG-21	12-AUG-21	R5548775
Surrogate: 4-Bromofluorobenzene	97.6		70-130	%	12-AUG-21	12-AUG-21	R5548775
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	NO			ppm	12-AUG-21	12-AUG-21	R5547203
Prep/Analysis Dates					12-AUG-21	12-AUG-21	R5547203
Surrogate: 2-Bromobenzotrifluoride	78.7		70-130	%	12-AUG-21	12-AUG-21	R5547203
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		13-AUG-21	
F1-BTEX	<10		10	mg/kg		13-AUG-21	
F2 (C10-C16)	57		25	mg/kg		13-AUG-21	
F3 (C16-C34)	4510		50	mg/kg		13-AUG-21	
F4 (C34-C50)	2910		50	mg/kg		13-AUG-21	
F4G-SG (GHH-Silica)	4820		500	mg/kg		13-AUG-21	
Total Hydrocarbons (C6-C50)	7480		50	mg/kg		13-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	90.3		70-130	%	12-AUG-21	12-AUG-21	R5548780
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		12-AUG-21	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2624667-9 EX 20-21-01							
Sampled By: CLIENT on 08-AUG-21							
Matrix: Soil							
Miscellaneous Parameters							
Moisture	16.6		0.25	%		12-AUG-21	R5548975
F4G Prep/Analysis Dates					12-AUG-21	13-AUG-21	R5549436
L2624667-10 EX 20-21-02							
Sampled By: CLIENT on 08-AUG-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	12-AUG-21	12-AUG-21	R5548775
Ethylbenzene	<0.015		0.015	mg/kg	12-AUG-21	12-AUG-21	R5548775
Toluene	<0.014		0.014	mg/kg	12-AUG-21	12-AUG-21	R5548775
o-Xylene	<0.050		0.050	mg/kg	12-AUG-21	12-AUG-21	R5548775
m+p-Xylene	<0.050		0.050	mg/kg	12-AUG-21	12-AUG-21	R5548775
Surrogate: 1,4-Difluorobenzene	113.6		70-130	%	12-AUG-21	12-AUG-21	R5548775
Surrogate: 4-Bromofluorobenzene	105.4		70-130	%	12-AUG-21	12-AUG-21	R5548775
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	12-AUG-21	12-AUG-21	R5547203
Prep/Analysis Dates					12-AUG-21	12-AUG-21	R5547203
Surrogate: 2-Bromobenzotrifluoride	74.8		70-130	%	12-AUG-21	12-AUG-21	R5547203
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		12-AUG-21	
F1-BTEX	<10		10	mg/kg		12-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		12-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		12-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		12-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		12-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	104.6		70-130	%	12-AUG-21	12-AUG-21	R5548780
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		12-AUG-21	
Miscellaneous Parameters							
Moisture	7.50		0.25	%		12-AUG-21	R5548975
L2624667-11 EX 20-21-03							
Sampled By: CLIENT on 08-AUG-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	12-AUG-21	12-AUG-21	R5548775
Ethylbenzene	<0.015		0.015	mg/kg	12-AUG-21	12-AUG-21	R5548775
Toluene	0.018		0.014	mg/kg	12-AUG-21	12-AUG-21	R5548775
o-Xylene	<0.050		0.050	mg/kg	12-AUG-21	12-AUG-21	R5548775
m+p-Xylene	<0.050		0.050	mg/kg	12-AUG-21	12-AUG-21	R5548775
Surrogate: 1,4-Difluorobenzene	111.1		70-130	%	12-AUG-21	12-AUG-21	R5548775
Surrogate: 4-Bromofluorobenzene	120.0		70-130	%	12-AUG-21	12-AUG-21	R5548775
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	NO			ppm	12-AUG-21	12-AUG-21	R5547203
Prep/Analysis Dates					12-AUG-21	12-AUG-21	R5547203
Surrogate: 2-Bromobenzotrifluoride	73.8		70-130	%	12-AUG-21	12-AUG-21	R5547203
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		13-AUG-21	
F1-BTEX	<10		10	mg/kg		13-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		13-AUG-21	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2624667-11 EX 20-21-03							
Sampled By: CLIENT on 08-AUG-21							
Matrix: Soil							
CCME Total Hydrocarbons							
F3 (C16-C34)	558		50	mg/kg		13-AUG-21	
F4 (C34-C50)	384		50	mg/kg		13-AUG-21	
F4G-SG (GHH-Silica)	570		500	mg/kg		13-AUG-21	
Total Hydrocarbons (C6-C50)	942		50	mg/kg		13-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	108.3		70-130	%	12-AUG-21	12-AUG-21	R5548780
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		12-AUG-21	
Miscellaneous Parameters							
Moisture	17.2		0.25	%		12-AUG-21	R5548975
F4G Prep/Analysis Dates					12-AUG-21	13-AUG-21	R5549436
L2624667-12 EX 20-21-04							
Sampled By: CLIENT on 08-AUG-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	12-AUG-21	12-AUG-21	R5548775
Ethylbenzene	<0.015		0.015	mg/kg	12-AUG-21	12-AUG-21	R5548775
Toluene	<0.014		0.014	mg/kg	12-AUG-21	12-AUG-21	R5548775
o-Xylene	<0.050		0.050	mg/kg	12-AUG-21	12-AUG-21	R5548775
m+p-Xylene	<0.050		0.050	mg/kg	12-AUG-21	12-AUG-21	R5548775
Surrogate: 1,4-Difluorobenzene	104.2		70-130	%	12-AUG-21	12-AUG-21	R5548775
Surrogate: 4-Bromofluorobenzene	101.1		70-130	%	12-AUG-21	12-AUG-21	R5548775
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	NO			ppm	12-AUG-21	12-AUG-21	R5547203
Prep/Analysis Dates					12-AUG-21	12-AUG-21	R5547203
Surrogate: 2-Bromobenzotrifluoride	73.6		70-130	%	12-AUG-21	12-AUG-21	R5547203
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		13-AUG-21	
F1-BTEX	<10		10	mg/kg		13-AUG-21	
F2 (C10-C16)	33		25	mg/kg		13-AUG-21	
F3 (C16-C34)	1130		50	mg/kg		13-AUG-21	
F4 (C34-C50)	867		50	mg/kg		13-AUG-21	
F4G-SG (GHH-Silica)	2150		500	mg/kg		13-AUG-21	
Total Hydrocarbons (C6-C50)	2030		50	mg/kg		13-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	86.4		70-130	%	12-AUG-21	12-AUG-21	R5548780
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		12-AUG-21	
Miscellaneous Parameters							
Moisture	10.1		0.25	%		12-AUG-21	R5548975
F4G Prep/Analysis Dates					12-AUG-21	13-AUG-21	R5549436
L2624667-13 EX 20-21-05							
Sampled By: CLIENT on 08-AUG-21							
Matrix: Soil							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	12-AUG-21	12-AUG-21	R5548775
Ethylbenzene	<0.015		0.015	mg/kg	12-AUG-21	12-AUG-21	R5548775
Toluene	<0.014		0.014	mg/kg	12-AUG-21	12-AUG-21	R5548775
o-Xylene	<0.050		0.050	mg/kg	12-AUG-21	12-AUG-21	R5548775

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2624667-13 EX 20-21-05							
Sampled By: CLIENT on 08-AUG-21							
Matrix: Soil							
BTEX and Styrene							
m+p-Xylene	<0.050		0.050	mg/kg	12-AUG-21	12-AUG-21	R5548775
Surrogate: 1,4-Difluorobenzene	106.3		70-130	%	12-AUG-21	12-AUG-21	R5548775
Surrogate: 4-Bromofluorobenzene	103.3		70-130	%	12-AUG-21	12-AUG-21	R5548775
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	12-AUG-21	12-AUG-21	R5547203
Prep/Analysis Dates					12-AUG-21	12-AUG-21	R5547203
Surrogate: 2-Bromobenzotrifluoride	72.4		70-130	%	12-AUG-21	12-AUG-21	R5547203
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		12-AUG-21	
F1-BTEX	<10		10	mg/kg		12-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		12-AUG-21	
F3 (C16-C34)	55		50	mg/kg		12-AUG-21	
F4 (C34-C50)	70		50	mg/kg		12-AUG-21	
Total Hydrocarbons (C6-C50)	125		50	mg/kg		12-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	97.2		70-130	%	12-AUG-21	12-AUG-21	R5548780
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		12-AUG-21	
Miscellaneous Parameters							
Moisture	11.5		0.25	%		12-AUG-21	R5548975

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
DLCI	Detection Limit Raised: Chromatographic Interference due to co-elution.
SMI	Surrogate recovery could not be measured due to sample matrix interference.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BTXS-MEOH-HS-MS-CL	Soil	BTEX and Styrene	EPA 8260C/5021A

The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. Target compound concentrations are measured using mass spectrometry detection.

F1-4-CALC-CL	Soil	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-MEOH-HS-FID-CL	Soil	F1(C6-C10)	CWS PHC Tier 1

The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. The F1 fraction concentration is measured using flame ionization detection.

F2-4-TMB-H/A-FID-CL	Soil	CCME F2-4 Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

This analysis is carried out in accordance with the "Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method, Canadian Council of Ministers of the Environment, December 2001." For C10 to C50 hydrocarbons (F2, F3, F4) and gravimetric heavy hydrocarbons (F4G-sg), a subsample of the sediment/soil is extracted with 1:1 hexane:acetone using a rotary extractor. The extract undergoes a silica-gel clean-up to remove polar compounds. F2, F3 & F4 are analyzed by on-column GC/FID, and F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where F4 (C34-C50) and F4G-sg results are reported for a sample, the larger of the reported values is used for comparison against the relevant CCME standard for F4.
7. The gravimetric heavy hydrocarbon results (F4G-sg), cannot be added to the C6 to C50 hydrocarbon results.
8. This method is validated for use.
9. Data from analysis of quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram.

F4G-TMB-CL	Soil	CCME Gravimetric Heavy Hydrocarbons (SG)	CCME CWS-PHC, Pub #1310, Dec 2001

This analysis is carried out in accordance with the "Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method, Canadian Council of Ministers of the Environment, December 2001." For gravimetric heavy hydrocarbons (F4G-sg), a subsample of the sediment/soil is extracted with 1:1 hexane:acetone using a rotary extractor. The extract undergoes a silica-gel clean-up to remove polar compounds prior to gravimetric analysis.

Notes:
1. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
2. Where F4 (C34-C50) and F4G-sg results are reported for a sample, the larger of the reported values is used for comparison against the relevant CCME standard for F4.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

3. The gravimetric heavy hydrocarbon (F4G-sg) result cannot be added to the C6 to C50 hydrocarbons results.
4. This method is validated for use.
5. Data from analysis of quality control samples is available upon request.
6. Reported results are expressed as milligrams per dry kilogram.

MOISTURE-CL	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)
This analysis is carried out gravimetrically by drying the sample at 105 C			
XYLENES-SUM-CALC-CL	Soil	Sum of Xylene Isomer Concentrations	CALCULATED RESULT
Total xylenes represents the sum of o-xylene and m&p-xylene.			

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
CL	ALS ENVIRONMENTAL - CALGARY, ALBERTA, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Client: GOLDER ASSOCIATES LTD
16820 107 Ave NW
Edmonton AB T5P 4C3
Contact: Steven Fiddler

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTXS-MEOH-HS-MS-CL	**Soil**							
Batch R5548775								
WG3595546-2 LCS								
Benzene			107.9		%		70-130	12-AUG-21
Ethylbenzene			94.4		%		70-130	12-AUG-21
Toluene			99.1		%		70-130	12-AUG-21
o-Xylene			99.3		%		70-130	12-AUG-21
m+p-Xylene			100.5		%		70-130	12-AUG-21
WG3595546-1 MB								
Benzene			<0.0050		mg/kg		0.005	12-AUG-21
Ethylbenzene			<0.015		mg/kg		0.015	12-AUG-21
Toluene			<0.014		mg/kg		0.014	12-AUG-21
o-Xylene			<0.050		mg/kg		0.05	12-AUG-21
m+p-Xylene			<0.050		mg/kg		0.05	12-AUG-21
Surrogate: 1,4-Difluorobenzene			101.8		%		70-130	12-AUG-21
Surrogate: 4-Bromofluorobenzene			96.7		%		70-130	12-AUG-21
F1-MEOH-HS-FID-CL	**Soil**							
Batch R5548780								
WG3595546-2 LCS								
F1(C6-C10)			119.1		%		70-130	12-AUG-21
WG3595546-1 MB								
F1(C6-C10)			<10		mg/kg		10	12-AUG-21
Surrogate: 3,4-Dichlorotoluene			97.0		%		70-130	12-AUG-21
F2-4-TMB-H/A-FID-CL	**Soil**							
Batch R5547203								
WG3595501-3 IRM		**ALS PHC3 RM**						
F2: (C10-C16)			90.5		%		70-130	12-AUG-21
F3: (C16-C34)			90.6		%		70-130	12-AUG-21
F4: (C34-C50)			98.2		%		70-130	12-AUG-21
WG3595501-2 LCS								
F2: (C10-C16)			106.6		%		70-130	12-AUG-21
F3: (C16-C34)			103.8		%		70-130	12-AUG-21
F4: (C34-C50)			120.7		%		70-130	12-AUG-21
WG3595501-1 MB								
F2: (C10-C16)			<25		mg/kg		25	12-AUG-21
F3: (C16-C34)			<50		mg/kg		50	12-AUG-21
F4: (C34-C50)			<50		mg/kg		50	12-AUG-21
Surrogate: 2-Bromobenzotrifluoride			109.9		%		70-130	12-AUG-21

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F4G-TMB-CL	**Soil**							
Batch R5549436								
WG3596220-3 IRM		**ALS PHC3 RM**						
Gravimetric Heavy Hydrocarbons (Silica)			92.3		%		70-130	13-AUG-21
WG3596220-2 LCS								
Gravimetric Heavy Hydrocarbons (Silica)			121.2		%		70-130	13-AUG-21
WG3596220-1 MB								
Gravimetric Heavy Hydrocarbons (Silica)			<500		mg/kg		500	13-AUG-21
MOISTURE-CL	**Soil**							
Batch R5548975								
WG3595506-2 LCS								
Moisture			98.1		%		90-110	12-AUG-21
WG3595506-1 MB								
Moisture			<0.25		%		0.25	12-AUG-21

Quality Control Report

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

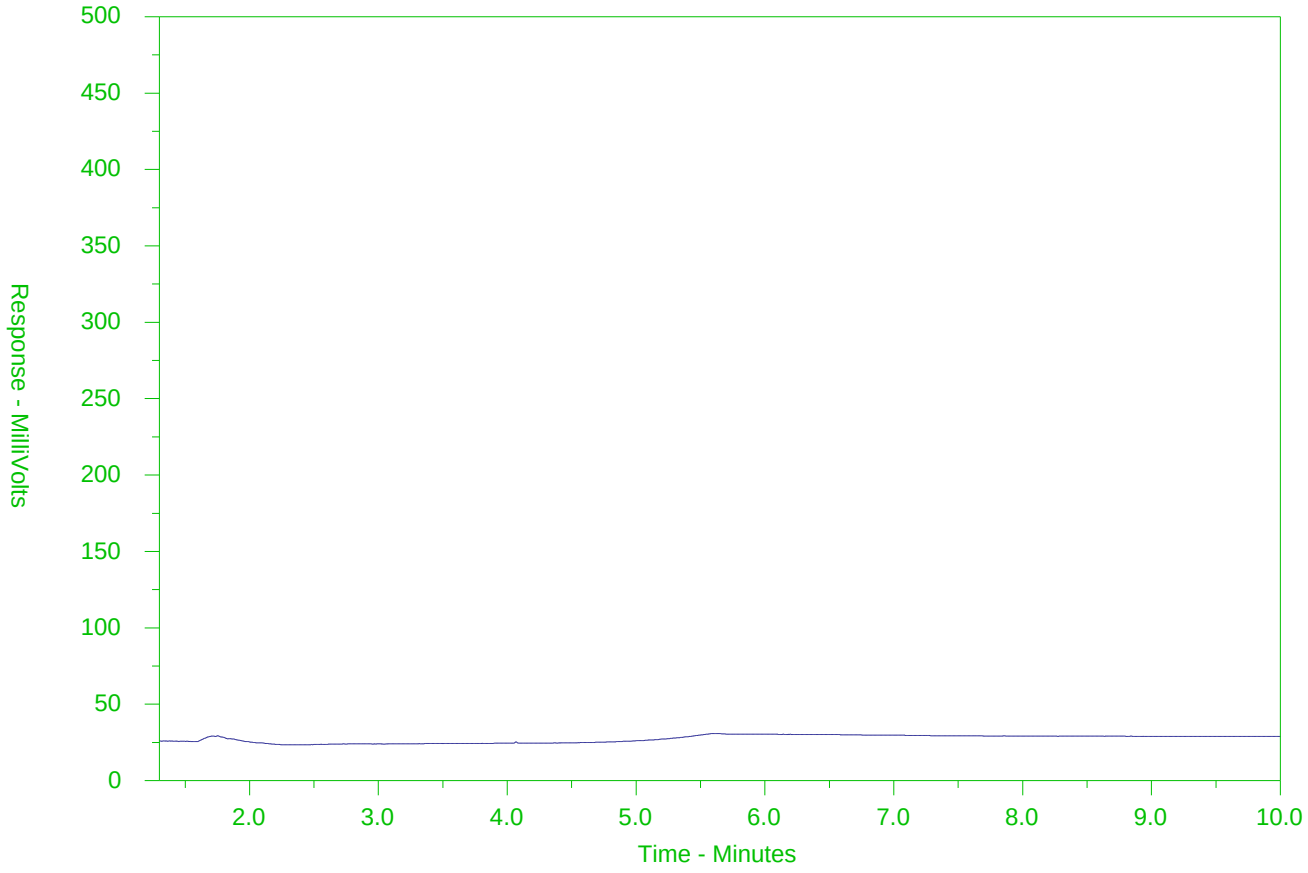
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2624667-1
Client Sample ID: LINER #1



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

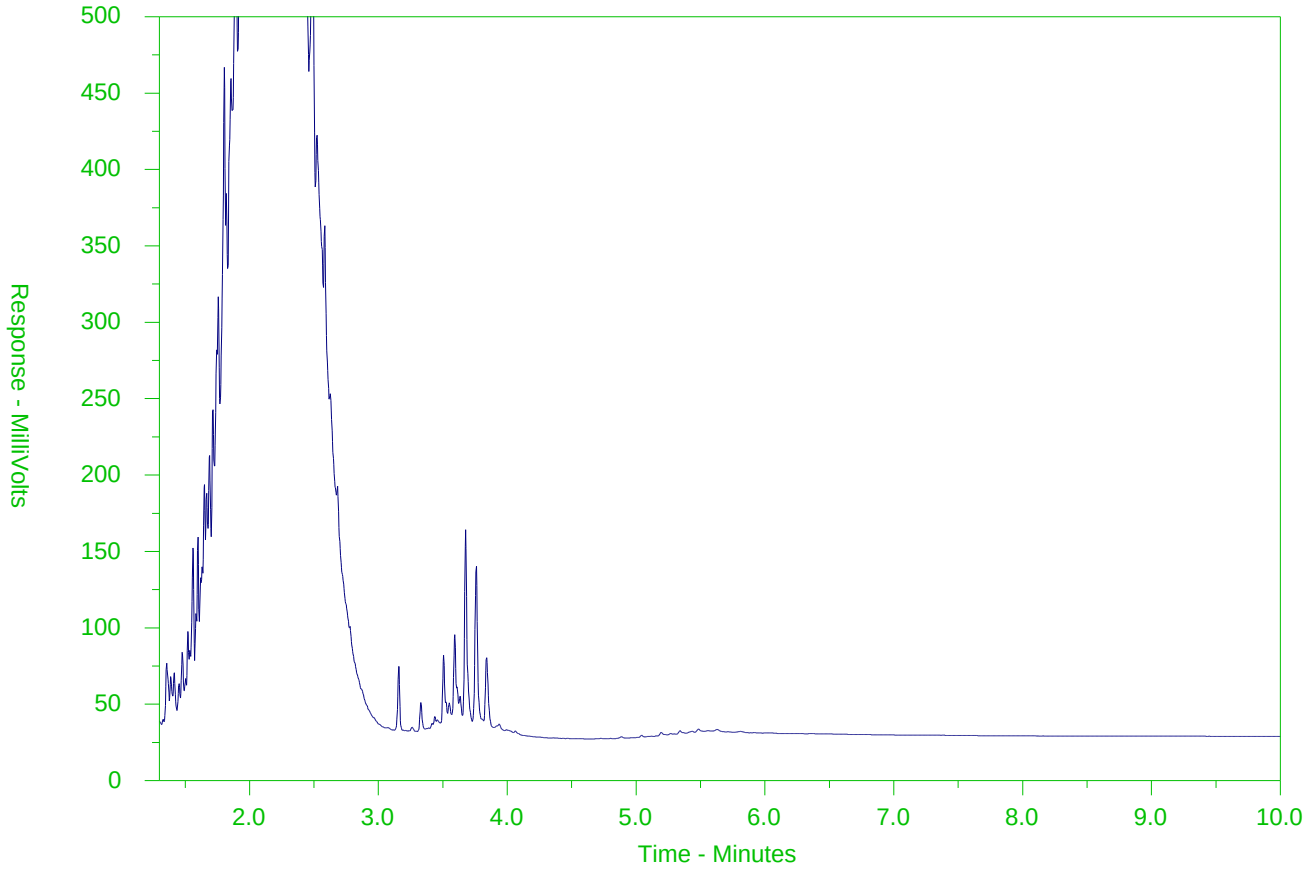
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2624667-2
Client Sample ID: LINER #2



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

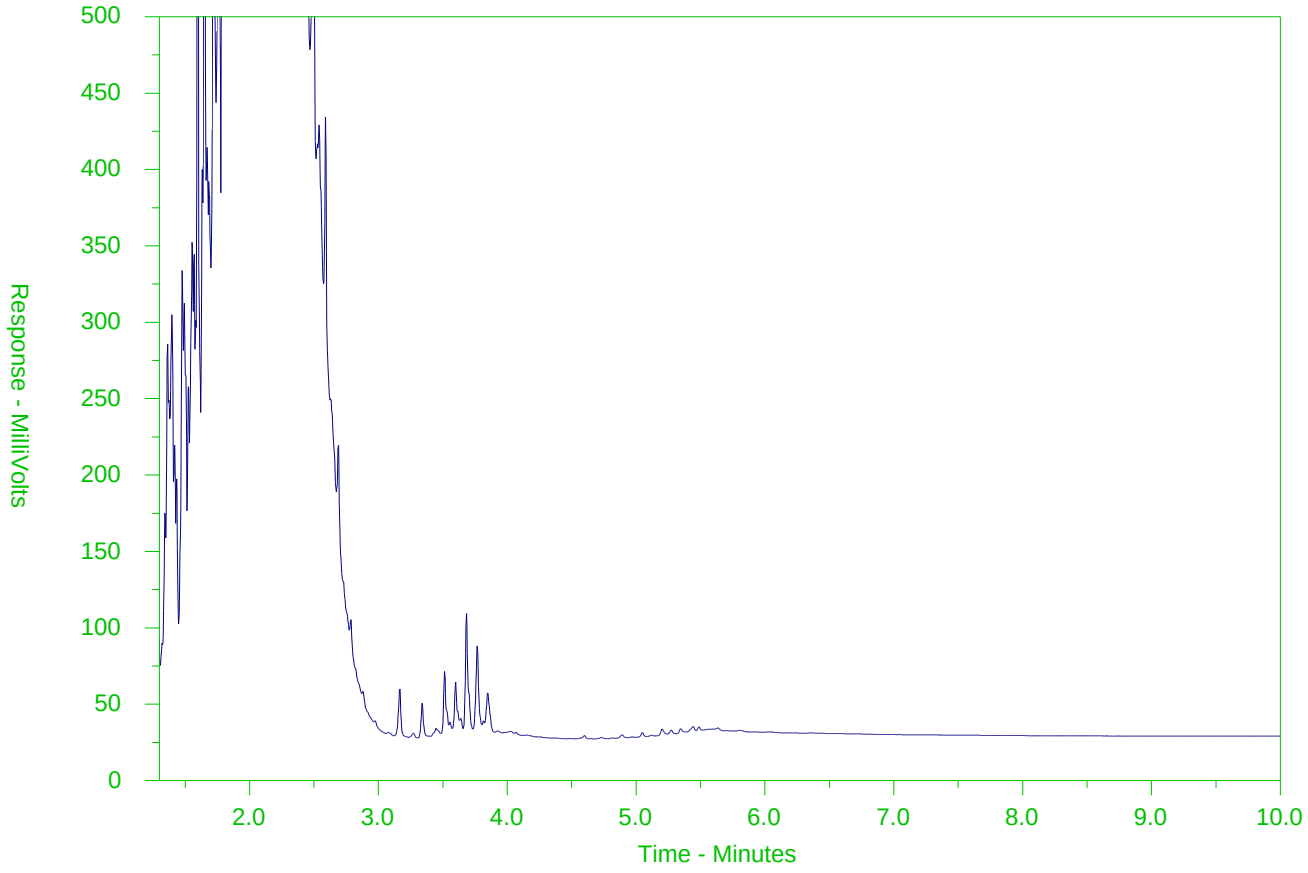
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2624667-3
Client Sample ID: LINER #3



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

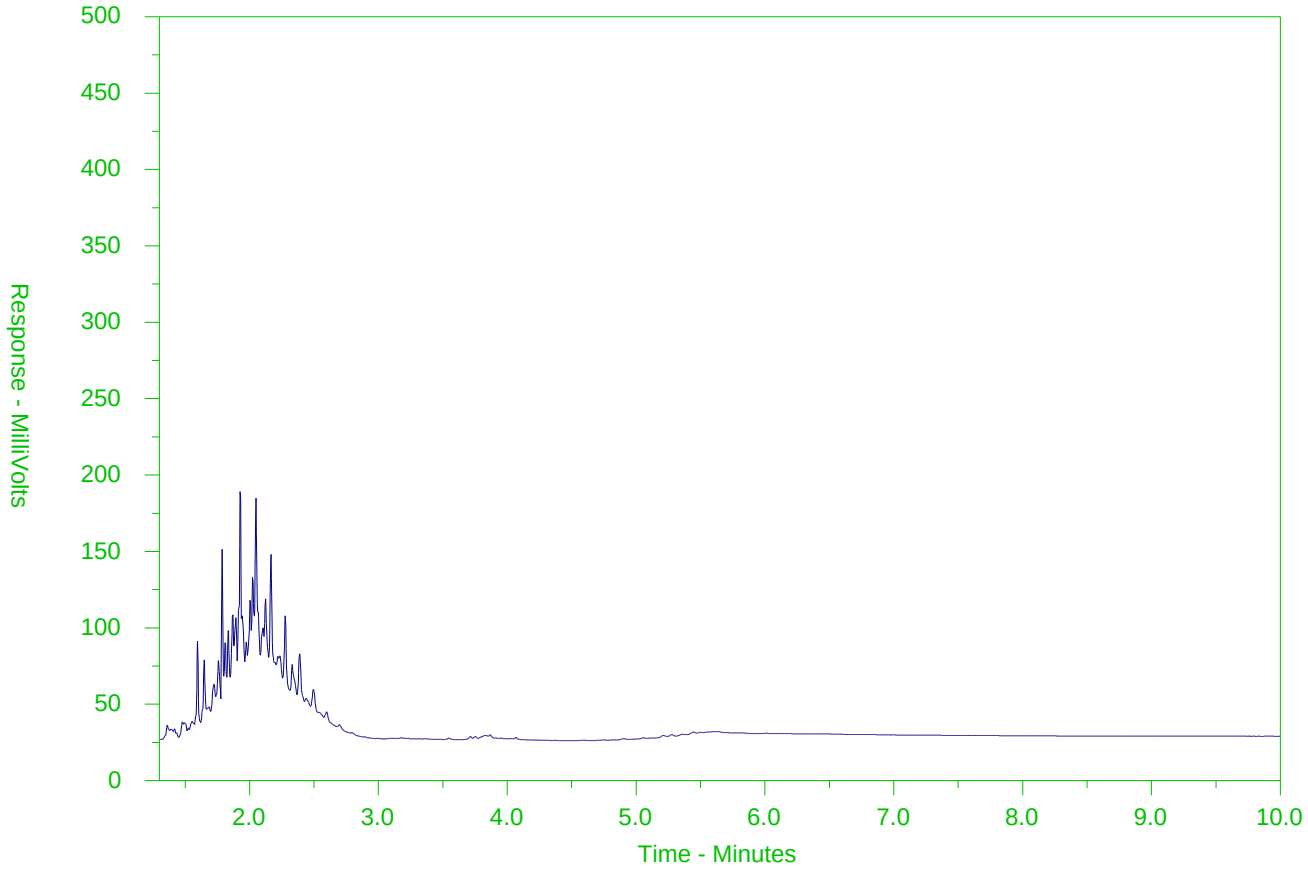
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2624667-4
Client Sample ID: LINER #4



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

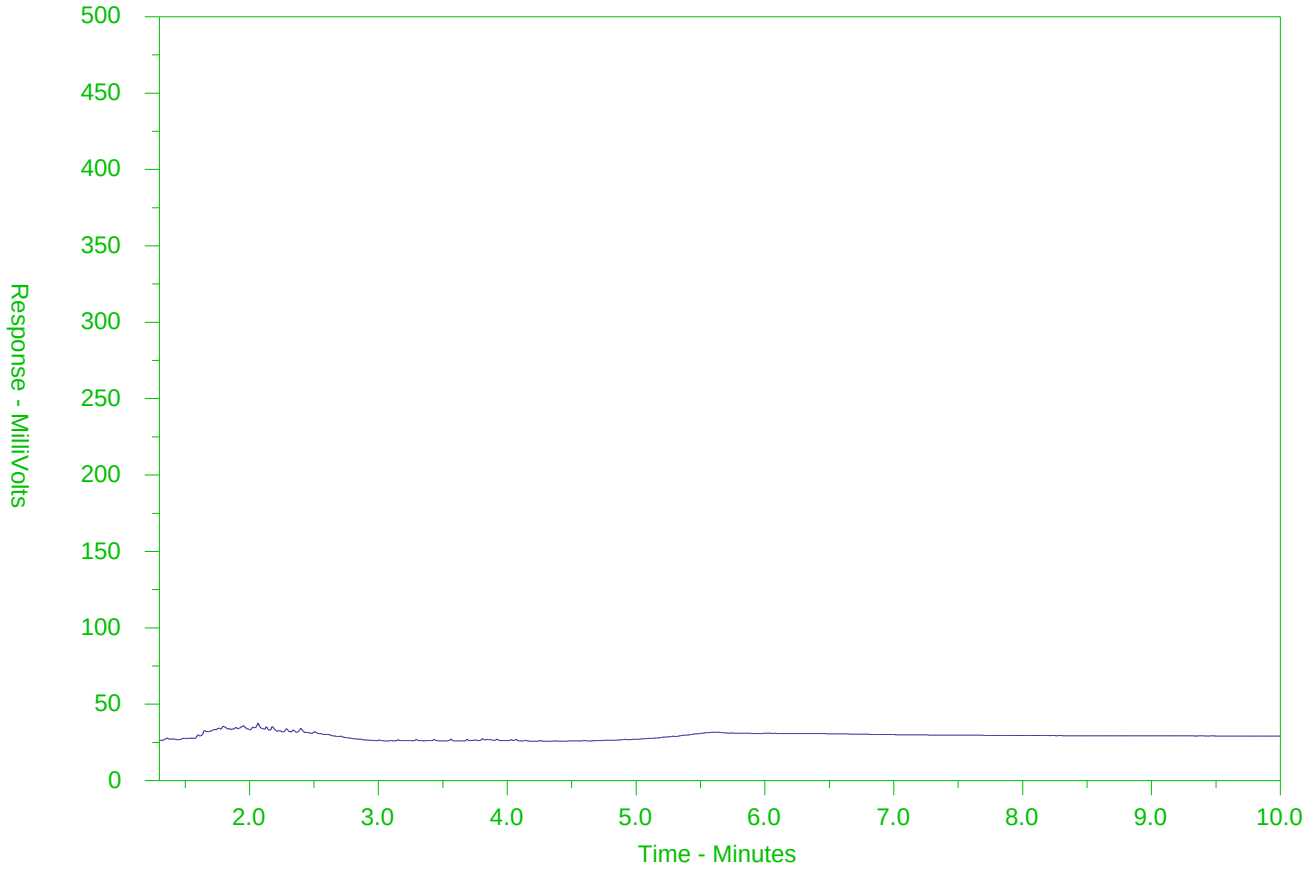
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2624667-5
Client Sample ID: LINER #5



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

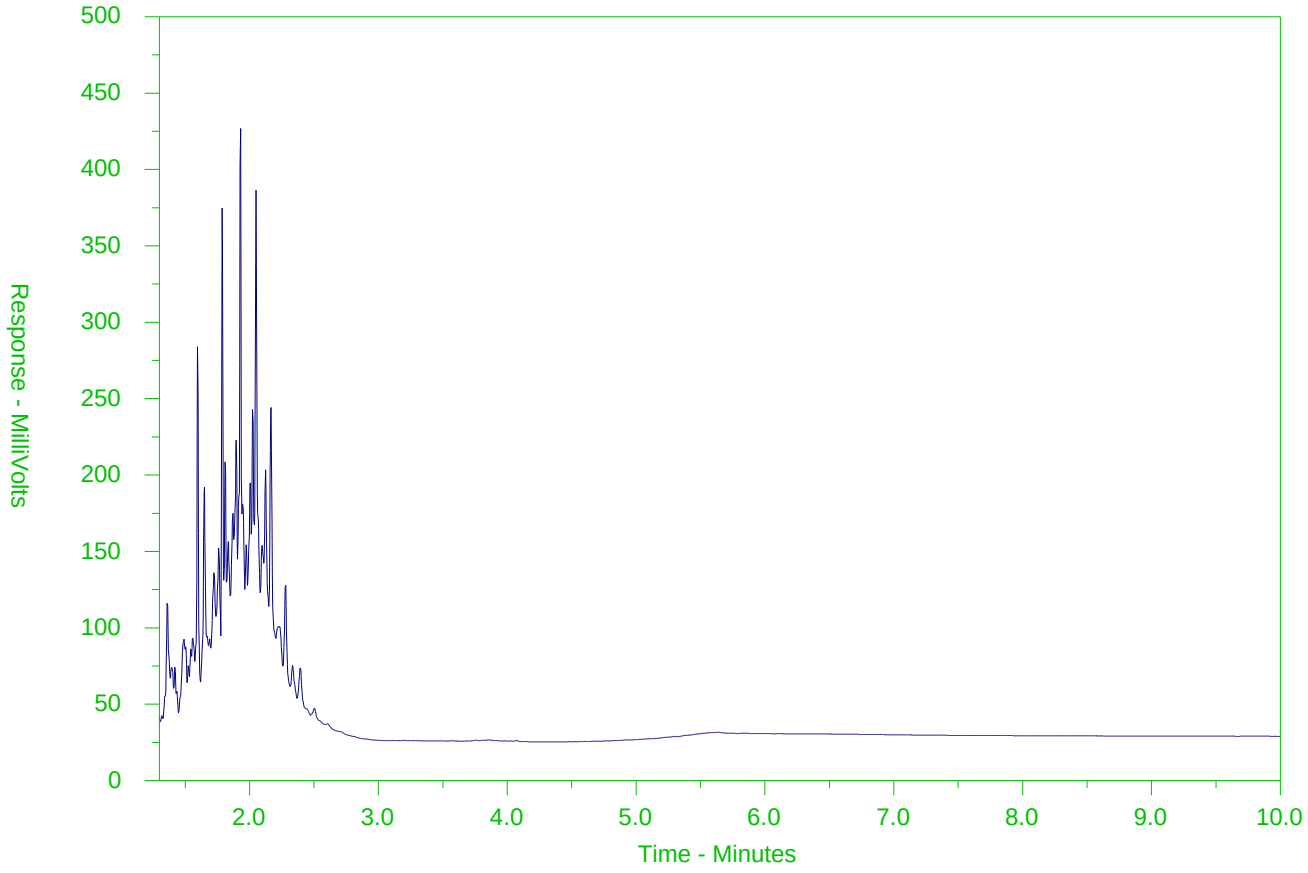
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2624667-6
Client Sample ID: LINER #6



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

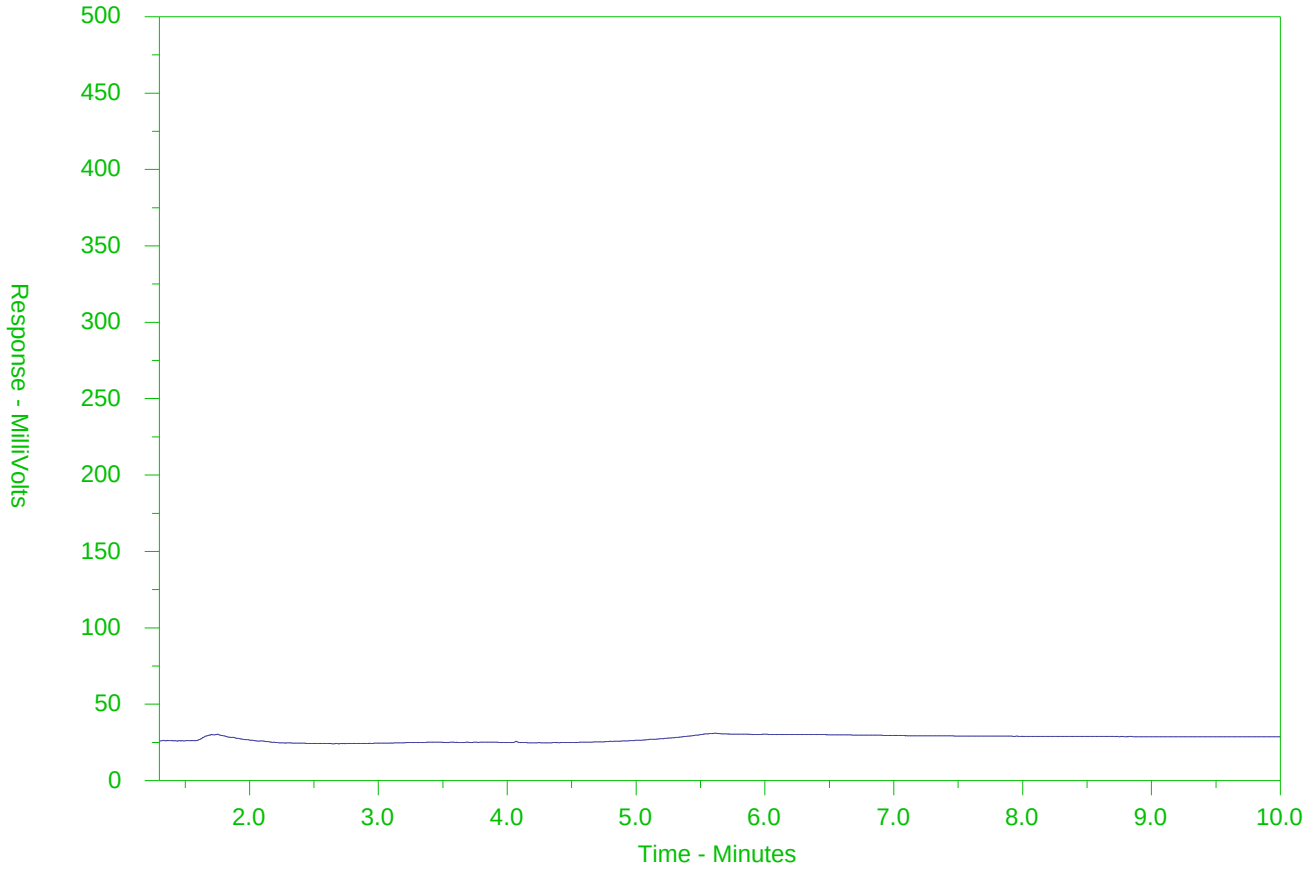
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2624667-7
Client Sample ID: LINER #7



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

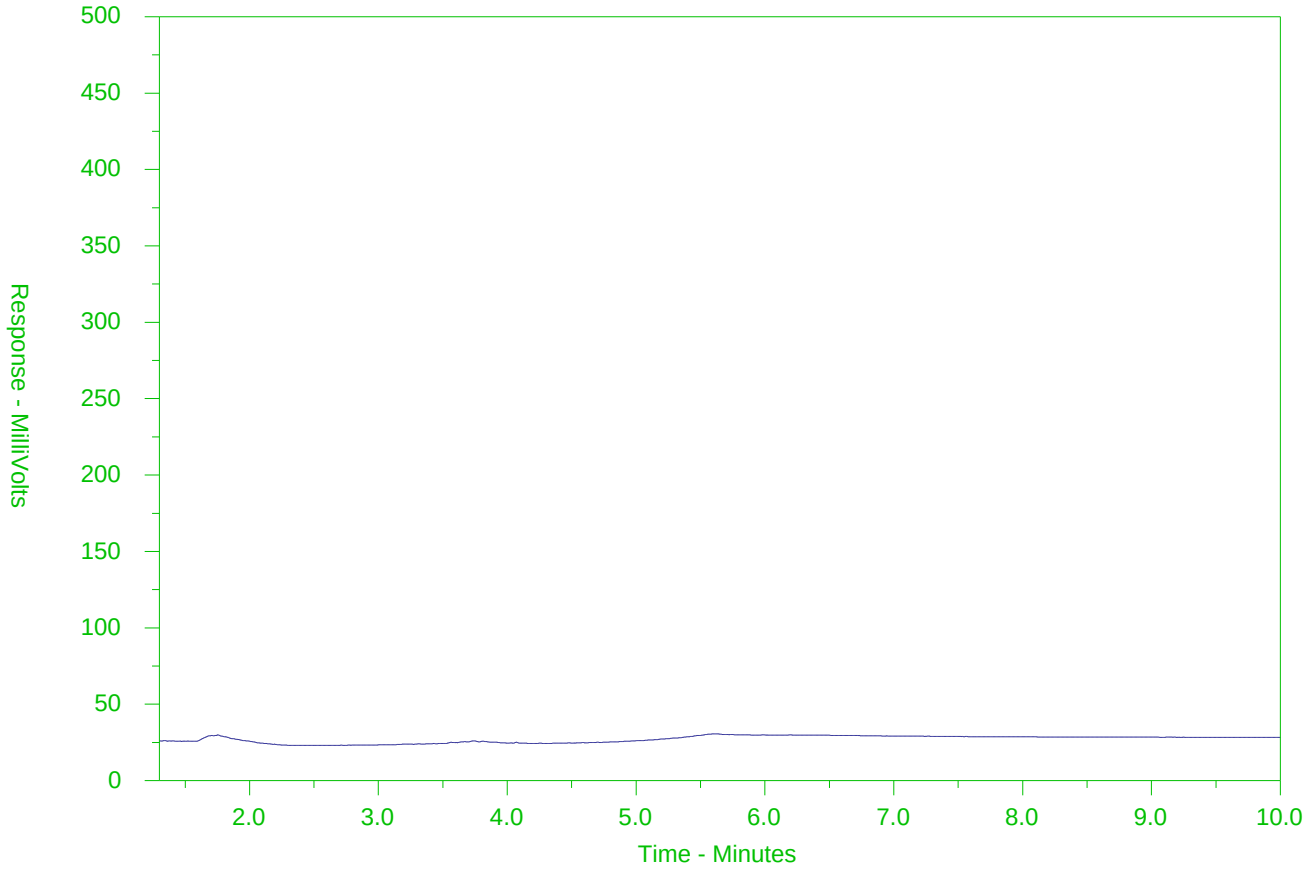
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2624667-8
Client Sample ID: LINER #8



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

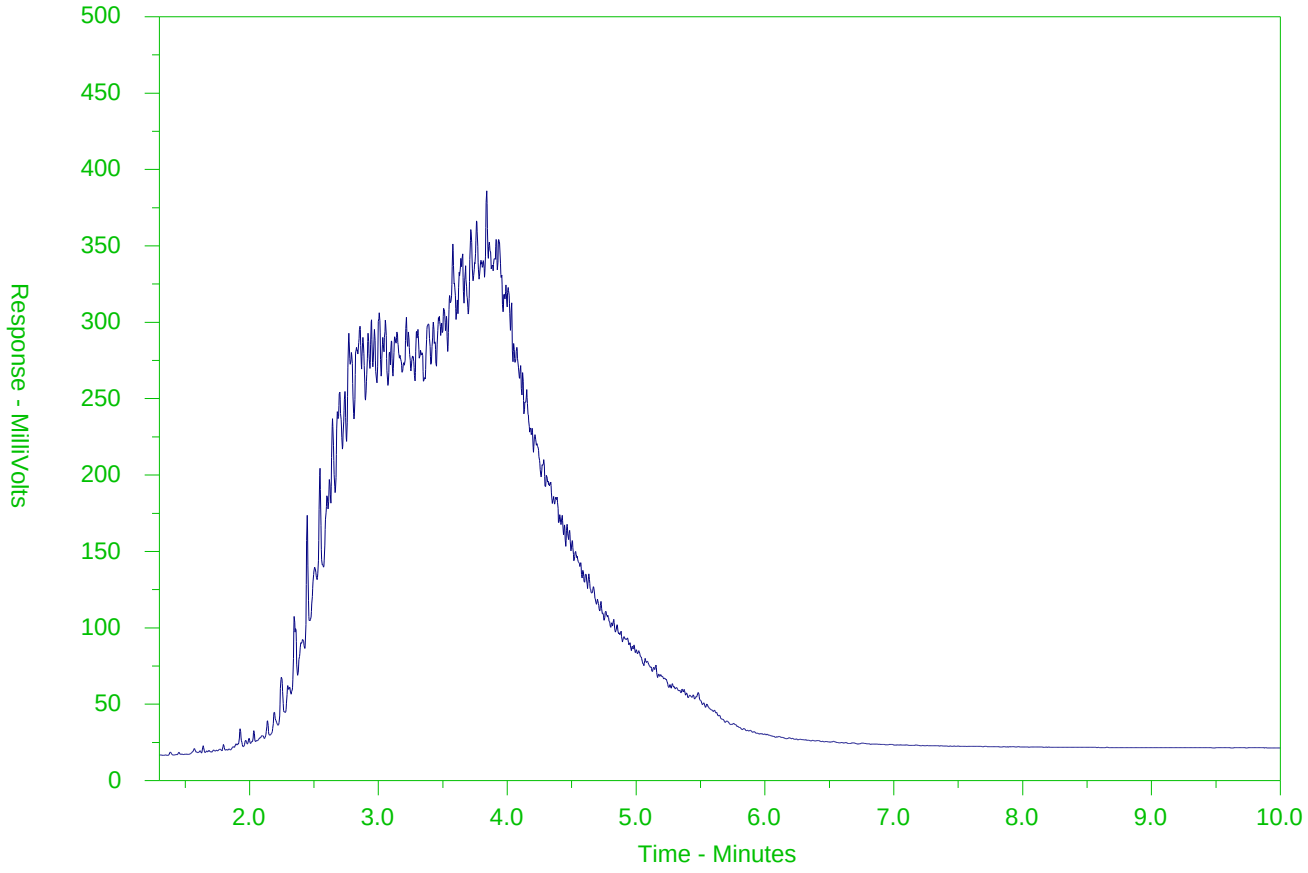
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2624667-9
Client Sample ID: EX 20-21-01



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

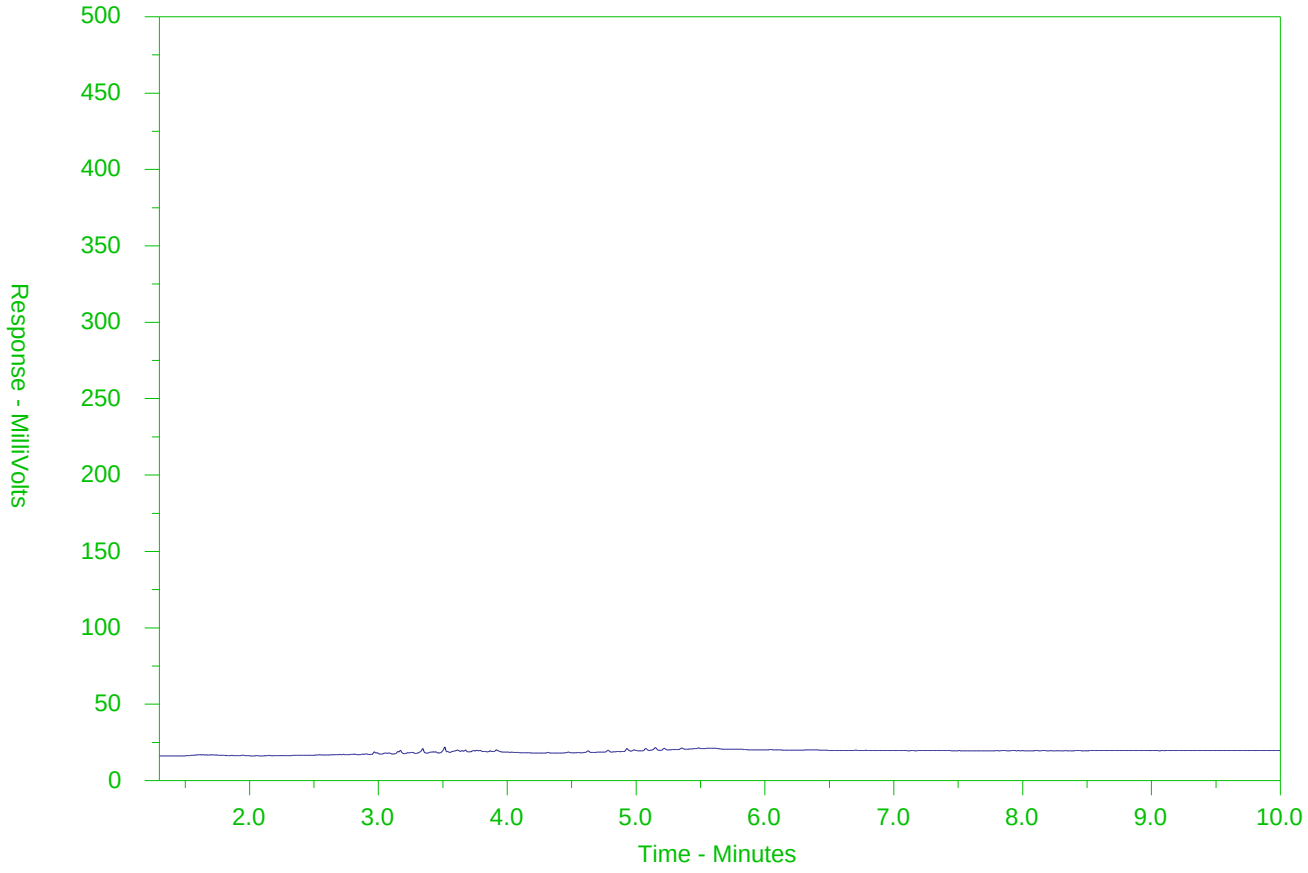
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2624667-10
Client Sample ID: EX 20-21-02



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C 346°F	287°C 549°F	481°C 898°F	575°C 1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

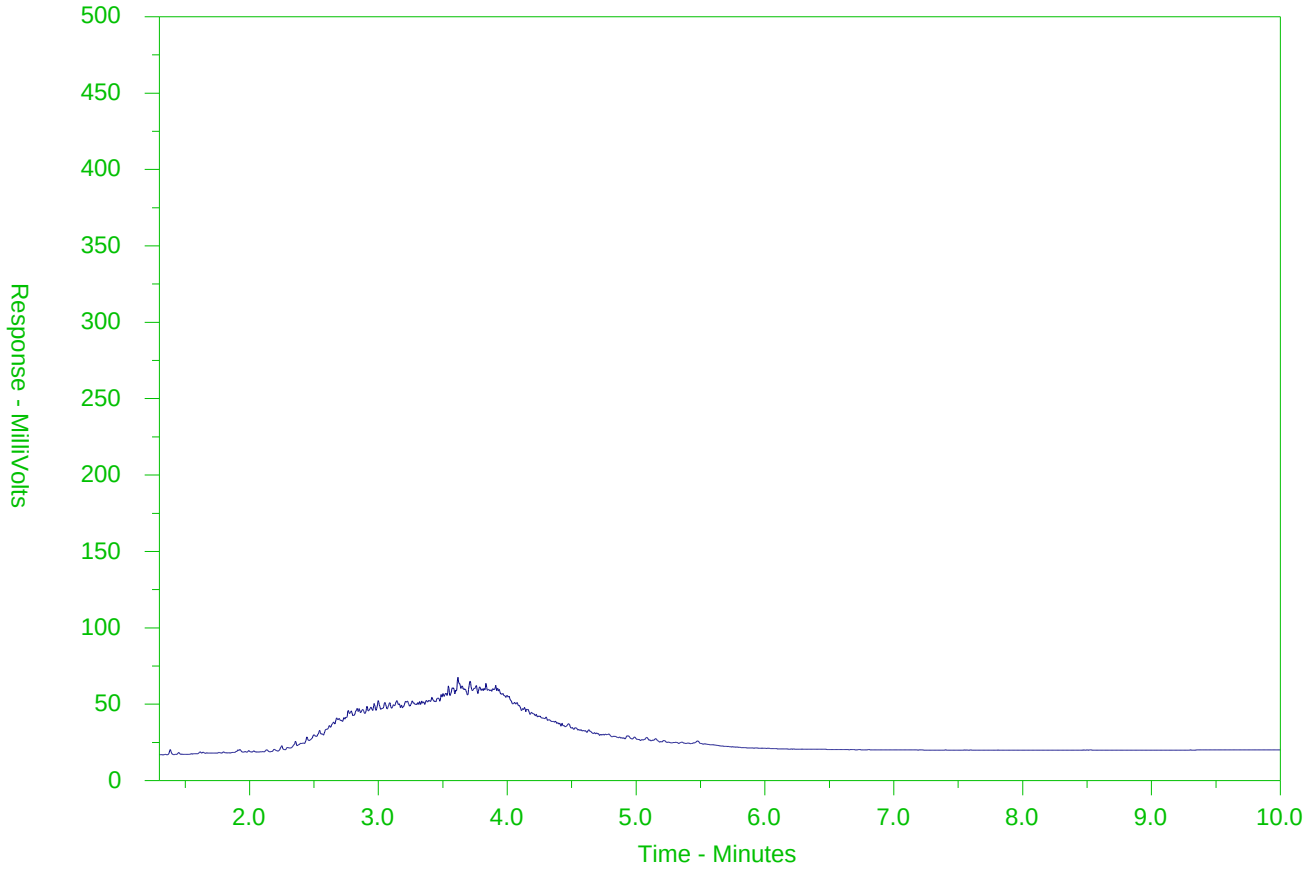
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2624667-11
Client Sample ID: EX 20-21-03



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

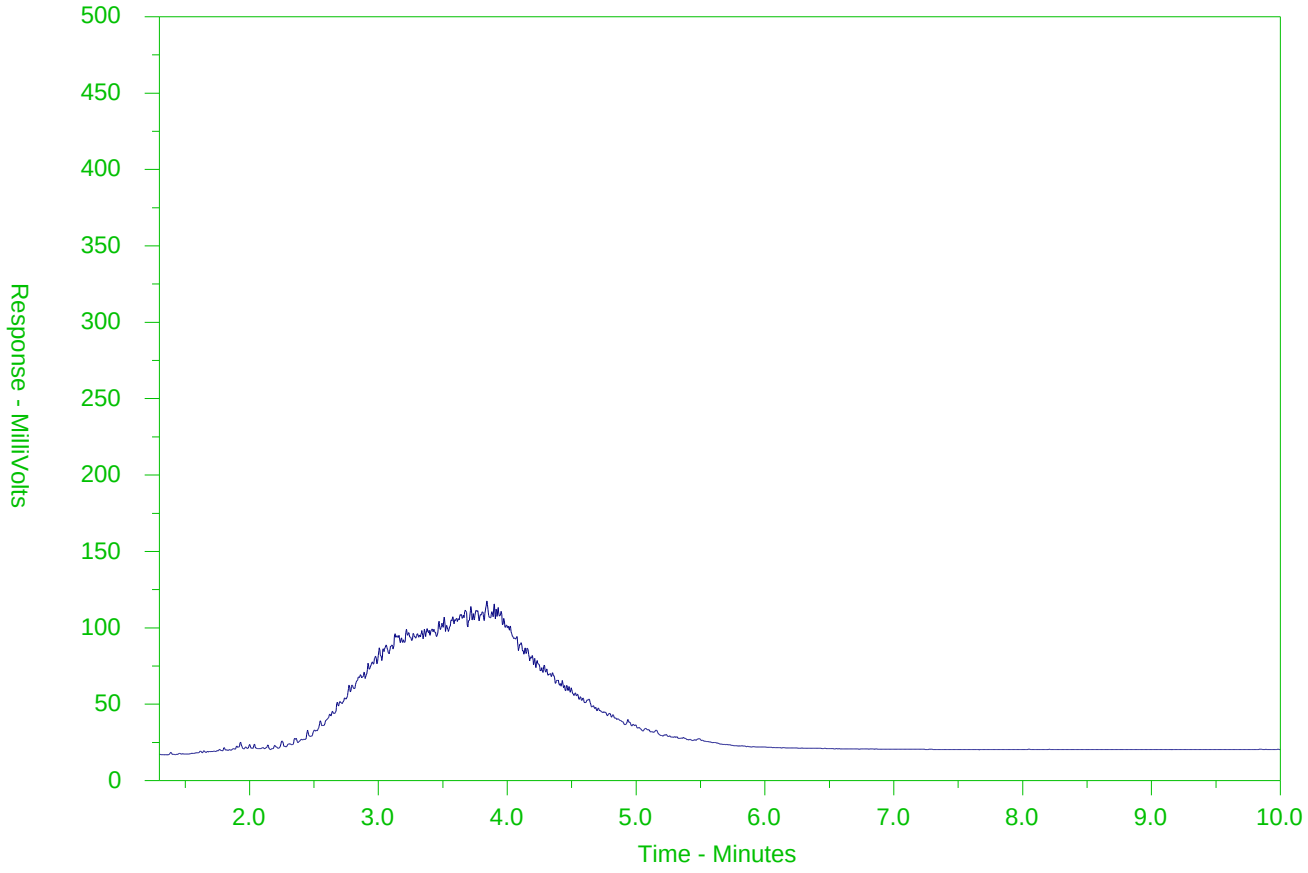
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2624667-12
Client Sample ID: EX 20-21-04



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

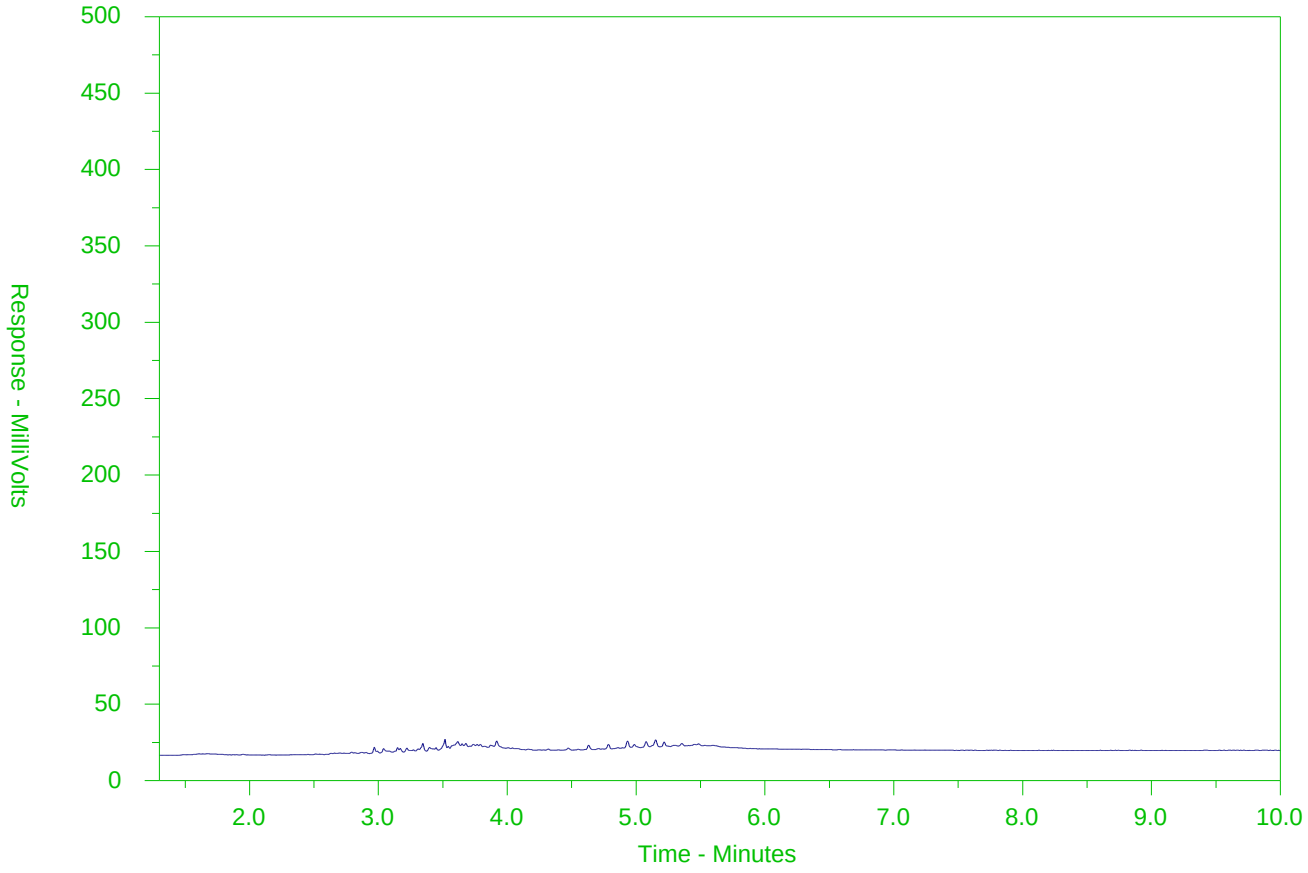
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2624667-13
Client Sample ID: EX 20-21-05



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number:

Page 1 of 2

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution	
Select Report Format:	☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report	☑ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	k.lewis@mandalayresources.com
Email 2	sfiddler@golder.com
Email 3	jmusijowski@golder.com

Invoice Distribution	
Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	
Email 2	

Project Information	
ALS Account # / Quote #:	Q80711
Job #:	
PO / AFE:	
LSD:	

Oil and Gas Required Fields (client use)	
AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (lab use only):

ALS Contact: Oliver Gregg **Sampler:**

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☑ | Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	Liner #1	06-Aug-21		Soil	3	X		
	Liner #2	↓		↓		X		
	Liner #3					X		
	Liner #4					X		
	Liner #5	07-Aug-21				X		
	Liner #6					X		
	Liner #7					X		
	Liner #8					X		
	EX 20-21-01	08-Aug-21				X		
	EX 20-21-02					X		
	EX 20-21-03					X		
	EX 20-21-04	↓		↓	↓	X		

L2624667-COFC

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human consumption/ use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
3.3							

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Braedin Ryan	Date: Aug 06 2021	Time:	Received by: MF	Date: 10-Aug-21	Time: 9:15	Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCT 2018 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number:

Page 2 of 2

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)

Quality Control (QC) Report with Report ☑ YES ☐ NO

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax	k.lewis@mandalayresources.com
Email 2	sfiddler@golder.com
Email 3	jmusijowski@golder.com

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax	
Email 2	

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days)

- 4 day [P4-20%] ☐
- 3 day [P3-25%] ☐
- 2 day [P2-50%] ☐

EMERGENCY

- 1 Business day [E - 100%] ☑
- Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #:	Q80711
Job #:	
PO / AFE:	
LSD:	

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (lab use only):

ALS Contact: Oliver Gregg

Sampler:

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	EX20-21-05	08-Aug-21		Soil	3	X		

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human consumption/ use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen	☐	SIF Observations	Yes ☐	No	☐
Ice Packs	☐ Ice Cubes ☐	Custody seal intact	Yes ☐	No	☐
Cooling Initiated	☐				

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
3.3							

SHIPMENT RELEASE (client use)

Released by:	Date:	Time:

INITIAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:
MJ	10-Aug-21	9:15

FINAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

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1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

GOLDER ASSOCIATES LTD
ATTN: Steven Fiddler
16820 107 Ave NW
Edmonton AB T5P 4C3

Date Received: 23-AUG-21
Report Date: 26-AUG-21 16:42 (MT)
Version: FINAL

Client Phone: 780-483-3499

Certificate of Analysis

Lab Work Order #: L2630059

Project P.O. #: NOT SUBMITTED
Job Reference: LUPIN 10402
C of C Numbers:
Legal Site Desc:

Harman Bhullar
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2630059-1 EX09-21-126							
Sampled By: CLIENT on 19-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	0.0102		0.0050	mg/kg	24-AUG-21	25-AUG-21	R5570161
Ethylbenzene	0.216		0.015	mg/kg	24-AUG-21	25-AUG-21	R5570161
Toluene	0.249		0.014	mg/kg	24-AUG-21	25-AUG-21	R5570161
o-Xylene	0.736		0.050	mg/kg	24-AUG-21	25-AUG-21	R5570161
m+p-Xylene	1.56		0.050	mg/kg	24-AUG-21	25-AUG-21	R5570161
Surrogate: 1,4-Difluorobenzene	90.9		70-130	%	24-AUG-21	25-AUG-21	R5570161
Surrogate: 4-Bromofluorobenzene	128.6		70-130	%	24-AUG-21	25-AUG-21	R5570161
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	24-AUG-21	26-AUG-21	R5570237
Prep/Analysis Dates					24-AUG-21	26-AUG-21	R5570237
Surrogate: 2-Bromobenzotrifluoride	110.2		70-130	%	24-AUG-21	26-AUG-21	R5570237
CCME Total Hydrocarbons							
F1 (C6-C10)	49		10	mg/kg		26-AUG-21	
F1-BTEX	46		10	mg/kg		26-AUG-21	
F2 (C10-C16)	478		25	mg/kg		26-AUG-21	
F3 (C16-C34)	100		50	mg/kg		26-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		26-AUG-21	
Total Hydrocarbons (C6-C50)	627		50	mg/kg		26-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	106.9		70-130	%	24-AUG-21	25-AUG-21	R5570163
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	2.29		0.071	mg/kg		26-AUG-21	
Miscellaneous Parameters							
Moisture	7.24		0.25	%		25-AUG-21	R5568624
L2630059-2 EX09-21-127							
Sampled By: CLIENT on 19-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	24-AUG-21	25-AUG-21	R5570161
Ethylbenzene	<0.015		0.015	mg/kg	24-AUG-21	25-AUG-21	R5570161
Toluene	<0.014		0.014	mg/kg	24-AUG-21	25-AUG-21	R5570161
o-Xylene	<0.050		0.050	mg/kg	24-AUG-21	25-AUG-21	R5570161
m+p-Xylene	<0.050		0.050	mg/kg	24-AUG-21	25-AUG-21	R5570161
Surrogate: 1,4-Difluorobenzene	98.5		70-130	%	24-AUG-21	25-AUG-21	R5570161
Surrogate: 4-Bromofluorobenzene	119.8		70-130	%	24-AUG-21	25-AUG-21	R5570161
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	24-AUG-21	26-AUG-21	R5570237
Prep/Analysis Dates					24-AUG-21	26-AUG-21	R5570237
Surrogate: 2-Bromobenzotrifluoride	108.0		70-130	%	24-AUG-21	26-AUG-21	R5570237
CCME Total Hydrocarbons							
F1 (C6-C10)	11		10	mg/kg		26-AUG-21	
F1-BTEX	11		10	mg/kg		26-AUG-21	
F2 (C10-C16)	84		25	mg/kg		26-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		26-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		26-AUG-21	
Total Hydrocarbons (C6-C50)	95		50	mg/kg		26-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	100.4		70-130	%	24-AUG-21	25-AUG-21	R5570163
Sum of Xylene Isomer Concentrations							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2630059-2 EX09-21-127							
Sampled By: CLIENT on 19-AUG-21							
Matrix: SOIL							
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		26-AUG-21	
Miscellaneous Parameters							
Moisture	8.70		0.25	%		25-AUG-21	R5568624
L2630059-3 EX20-21-06							
Sampled By: CLIENT on 19-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	24-AUG-21	25-AUG-21	R5570161
Ethylbenzene	<0.015		0.015	mg/kg	24-AUG-21	25-AUG-21	R5570161
Toluene	<0.014		0.014	mg/kg	24-AUG-21	25-AUG-21	R5570161
o-Xylene	<0.050		0.050	mg/kg	24-AUG-21	25-AUG-21	R5570161
m+p-Xylene	<0.050		0.050	mg/kg	24-AUG-21	25-AUG-21	R5570161
Surrogate: 1,4-Difluorobenzene	96.2		70-130	%	24-AUG-21	25-AUG-21	R5570161
Surrogate: 4-Bromofluorobenzene	91.0		70-130	%	24-AUG-21	25-AUG-21	R5570161
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	24-AUG-21	26-AUG-21	R5570237
Prep/Analysis Dates					24-AUG-21	26-AUG-21	R5570237
Surrogate: 2-Bromobenzotrifluoride	101.5		70-130	%	24-AUG-21	26-AUG-21	R5570237
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		26-AUG-21	
F1-BTEX	<10		10	mg/kg		26-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		26-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		26-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		26-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		26-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	91.3		70-130	%	24-AUG-21	25-AUG-21	R5570163
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		26-AUG-21	
Miscellaneous Parameters							
Moisture	12.9		0.25	%		25-AUG-21	R5568624
L2630059-4 EX20-21-08							
Sampled By: CLIENT on 19-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	24-AUG-21	25-AUG-21	R5570161
Ethylbenzene	<0.015		0.015	mg/kg	24-AUG-21	25-AUG-21	R5570161
Toluene	<0.014		0.014	mg/kg	24-AUG-21	25-AUG-21	R5570161
o-Xylene	<0.050		0.050	mg/kg	24-AUG-21	25-AUG-21	R5570161
m+p-Xylene	<0.050		0.050	mg/kg	24-AUG-21	25-AUG-21	R5570161
Surrogate: 1,4-Difluorobenzene	97.5		70-130	%	24-AUG-21	25-AUG-21	R5570161
Surrogate: 4-Bromofluorobenzene	96.3		70-130	%	24-AUG-21	25-AUG-21	R5570161
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	24-AUG-21	26-AUG-21	R5570237
Prep/Analysis Dates					24-AUG-21	26-AUG-21	R5570237
Surrogate: 2-Bromobenzotrifluoride	107.5		70-130	%	24-AUG-21	26-AUG-21	R5570237
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		26-AUG-21	
F1-BTEX	<10		10	mg/kg		26-AUG-21	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2630059-4 EX20-21-08							
Sampled By: CLIENT on 19-AUG-21							
Matrix: SOIL							
CCME Total Hydrocarbons							
F2 (C10-C16)	<25		25	mg/kg		26-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		26-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		26-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		26-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	92.5		70-130	%	24-AUG-21	25-AUG-21	R5570163
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		26-AUG-21	
Miscellaneous Parameters							
Moisture	7.81		0.25	%		25-AUG-21	R5568624
L2630059-5 EX20-21-10							
Sampled By: CLIENT on 19-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	24-AUG-21	25-AUG-21	R5570161
Ethylbenzene	<0.015		0.015	mg/kg	24-AUG-21	25-AUG-21	R5570161
Toluene	0.016		0.014	mg/kg	24-AUG-21	25-AUG-21	R5570161
o-Xylene	<0.050		0.050	mg/kg	24-AUG-21	25-AUG-21	R5570161
m+p-Xylene	<0.050		0.050	mg/kg	24-AUG-21	25-AUG-21	R5570161
Surrogate: 1,4-Difluorobenzene	103.9		70-130	%	24-AUG-21	25-AUG-21	R5570161
Surrogate: 4-Bromofluorobenzene	126.7		70-130	%	24-AUG-21	25-AUG-21	R5570161
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	24-AUG-21	26-AUG-21	R5570237
Prep/Analysis Dates					24-AUG-21	26-AUG-21	R5570237
Surrogate: 2-Bromobenzotrifluoride	113.4		70-130	%	24-AUG-21	26-AUG-21	R5570237
CCME Total Hydrocarbons							
F1 (C6-C10)	17		10	mg/kg		26-AUG-21	
F1-BTEX	17		10	mg/kg		26-AUG-21	
F2 (C10-C16)	306		25	mg/kg		26-AUG-21	
F3 (C16-C34)	305		50	mg/kg		26-AUG-21	
F4 (C34-C50)	68		50	mg/kg		26-AUG-21	
Total Hydrocarbons (C6-C50)	696		50	mg/kg		26-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	99.3		70-130	%	24-AUG-21	25-AUG-21	R5570163
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		26-AUG-21	
Miscellaneous Parameters							
Moisture	14.0		0.25	%		25-AUG-21	R5568624
L2630059-6 EX20-21-12							
Sampled By: CLIENT on 19-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	24-AUG-21	25-AUG-21	R5570161
Ethylbenzene	<0.015		0.015	mg/kg	24-AUG-21	25-AUG-21	R5570161
Toluene	<0.014		0.014	mg/kg	24-AUG-21	25-AUG-21	R5570161
o-Xylene	<0.050		0.050	mg/kg	24-AUG-21	25-AUG-21	R5570161
m+p-Xylene	<0.050		0.050	mg/kg	24-AUG-21	25-AUG-21	R5570161
Surrogate: 1,4-Difluorobenzene	105.5		70-130	%	24-AUG-21	25-AUG-21	R5570161
Surrogate: 4-Bromofluorobenzene	104.9		70-130	%	24-AUG-21	25-AUG-21	R5570161

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2630059-6 EX20-21-12							
Sampled By: CLIENT on 19-AUG-21							
Matrix: SOIL							
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	24-AUG-21	26-AUG-21	R5570237
Prep/Analysis Dates					24-AUG-21	26-AUG-21	R5570237
Surrogate: 2-Bromobenzotrifluoride	90.2		70-130	%	24-AUG-21	26-AUG-21	R5570237
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		26-AUG-21	
F1-BTEX	<10		10	mg/kg		26-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		26-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		26-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		26-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		26-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	108.0		70-130	%	24-AUG-21	25-AUG-21	R5570163
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		26-AUG-21	
Miscellaneous Parameters							
Moisture	10.9		0.25	%		25-AUG-21	R5568624
L2630059-7 EX20-21-14							
Sampled By: CLIENT on 19-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	24-AUG-21	25-AUG-21	R5570161
Ethylbenzene	<0.015		0.015	mg/kg	24-AUG-21	25-AUG-21	R5570161
Toluene	<0.014		0.014	mg/kg	24-AUG-21	25-AUG-21	R5570161
o-Xylene	<0.050		0.050	mg/kg	24-AUG-21	25-AUG-21	R5570161
m+p-Xylene	<0.050		0.050	mg/kg	24-AUG-21	25-AUG-21	R5570161
Surrogate: 1,4-Difluorobenzene	119.4		70-130	%	24-AUG-21	25-AUG-21	R5570161
Surrogate: 4-Bromofluorobenzene	123.8		70-130	%	24-AUG-21	25-AUG-21	R5570161
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	24-AUG-21	26-AUG-21	R5570237
Prep/Analysis Dates					24-AUG-21	26-AUG-21	R5570237
Surrogate: 2-Bromobenzotrifluoride	96.0		70-130	%	24-AUG-21	26-AUG-21	R5570237
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		26-AUG-21	
F1-BTEX	<10		10	mg/kg		26-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		26-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		26-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		26-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		26-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	124.8		70-130	%	24-AUG-21	25-AUG-21	R5570163
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		26-AUG-21	
Miscellaneous Parameters							
Moisture	15.1		0.25	%		25-AUG-21	R5568624
L2630059-8 EX22-21-01							
Sampled By: CLIENT on 20-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	24-AUG-21	25-AUG-21	R5570161

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2630059-8 EX22-21-01							
Sampled By: CLIENT on 20-AUG-21							
Matrix: SOIL							
BTEX and Styrene							
Ethylbenzene	<0.015		0.015	mg/kg	24-AUG-21	25-AUG-21	R5570161
Toluene	<0.014		0.014	mg/kg	24-AUG-21	25-AUG-21	R5570161
o-Xylene	<0.050		0.050	mg/kg	24-AUG-21	25-AUG-21	R5570161
m+p-Xylene	<0.050		0.050	mg/kg	24-AUG-21	25-AUG-21	R5570161
Surrogate: 1,4-Difluorobenzene	99.2		70-130	%	24-AUG-21	25-AUG-21	R5570161
Surrogate: 4-Bromofluorobenzene	97.1		70-130	%	24-AUG-21	25-AUG-21	R5570161
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	24-AUG-21	26-AUG-21	R5570237
Prep/Analysis Dates					24-AUG-21	26-AUG-21	R5570237
Surrogate: 2-Bromobenzotrifluoride	83.8		70-130	%	24-AUG-21	26-AUG-21	R5570237
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		26-AUG-21	
F1-BTEX	<10		10	mg/kg		26-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		26-AUG-21	
F3 (C16-C34)	83		50	mg/kg		26-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		26-AUG-21	
Total Hydrocarbons (C6-C50)	83		50	mg/kg		26-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	106.3		70-130	%	24-AUG-21	25-AUG-21	R5570163
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		26-AUG-21	
Miscellaneous Parameters							
Moisture	4.97		0.25	%		25-AUG-21	R5568624
L2630059-9 EX22-21-04							
Sampled By: CLIENT on 20-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	24-AUG-21	25-AUG-21	R5570161
Ethylbenzene	<0.015		0.015	mg/kg	24-AUG-21	25-AUG-21	R5570161
Toluene	<0.014		0.014	mg/kg	24-AUG-21	25-AUG-21	R5570161
o-Xylene	<0.050		0.050	mg/kg	24-AUG-21	25-AUG-21	R5570161
m+p-Xylene	<0.050		0.050	mg/kg	24-AUG-21	25-AUG-21	R5570161
Surrogate: 1,4-Difluorobenzene	113.2		70-130	%	24-AUG-21	25-AUG-21	R5570161
Surrogate: 4-Bromofluorobenzene	103.4		70-130	%	24-AUG-21	25-AUG-21	R5570161
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	24-AUG-21	26-AUG-21	R5570237
Prep/Analysis Dates					24-AUG-21	26-AUG-21	R5570237
Surrogate: 2-Bromobenzotrifluoride	96.4		70-130	%	24-AUG-21	26-AUG-21	R5570237
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		26-AUG-21	
F1-BTEX	<10		10	mg/kg		26-AUG-21	
F2 (C10-C16)	41		25	mg/kg		26-AUG-21	
F3 (C16-C34)	144		50	mg/kg		26-AUG-21	
F4 (C34-C50)	55		50	mg/kg		26-AUG-21	
Total Hydrocarbons (C6-C50)	240		50	mg/kg		26-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	98.7		70-130	%	24-AUG-21	25-AUG-21	R5570163
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		26-AUG-21	
Miscellaneous Parameters							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2630059-9 EX22-21-04							
Sampled By: CLIENT on 20-AUG-21							
Matrix: SOIL							
Moisture	8.13		0.25	%		25-AUG-21	R5568624
L2630059-10 EX22-21-07							
Sampled By: CLIENT on 20-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	24-AUG-21	25-AUG-21	R5570161
Ethylbenzene	<0.015		0.015	mg/kg	24-AUG-21	25-AUG-21	R5570161
Toluene	<0.014		0.014	mg/kg	24-AUG-21	25-AUG-21	R5570161
o-Xylene	<0.050		0.050	mg/kg	24-AUG-21	25-AUG-21	R5570161
m+p-Xylene	<0.050		0.050	mg/kg	24-AUG-21	25-AUG-21	R5570161
Surrogate: 1,4-Difluorobenzene	96.4		70-130	%	24-AUG-21	25-AUG-21	R5570161
Surrogate: 4-Bromofluorobenzene	91.9		70-130	%	24-AUG-21	25-AUG-21	R5570161
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	24-AUG-21	26-AUG-21	R5570237
Prep/Analysis Dates					24-AUG-21	26-AUG-21	R5570237
Surrogate: 2-Bromobenzotrifluoride	98.2		70-130	%	24-AUG-21	26-AUG-21	R5570237
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		26-AUG-21	
F1-BTEX	<10		10	mg/kg		26-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		26-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		26-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		26-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		26-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	94.7		70-130	%	24-AUG-21	25-AUG-21	R5570163
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		26-AUG-21	
Miscellaneous Parameters							
Moisture	6.11		0.25	%		25-AUG-21	R5568624
L2630059-11 EX22-21-09							
Sampled By: CLIENT on 20-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	24-AUG-21	25-AUG-21	R5570161
Ethylbenzene	<0.015		0.015	mg/kg	24-AUG-21	25-AUG-21	R5570161
Toluene	<0.014		0.014	mg/kg	24-AUG-21	25-AUG-21	R5570161
o-Xylene	<0.050		0.050	mg/kg	24-AUG-21	25-AUG-21	R5570161
m+p-Xylene	<0.050		0.050	mg/kg	24-AUG-21	25-AUG-21	R5570161
Surrogate: 1,4-Difluorobenzene	97.1		70-130	%	24-AUG-21	25-AUG-21	R5570161
Surrogate: 4-Bromofluorobenzene	86.5		70-130	%	24-AUG-21	25-AUG-21	R5570161
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	24-AUG-21	26-AUG-21	R5570237
Prep/Analysis Dates					24-AUG-21	26-AUG-21	R5570237
Surrogate: 2-Bromobenzotrifluoride	89.8		70-130	%	24-AUG-21	26-AUG-21	R5570237
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		26-AUG-21	
F1-BTEX	<10		10	mg/kg		26-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		26-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		26-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		26-AUG-21	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2630059-11 EX22-21-09							
Sampled By: CLIENT on 20-AUG-21							
Matrix: SOIL							
CCME Total Hydrocarbons							
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		26-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	102.9		70-130	%	24-AUG-21	25-AUG-21	R5570163
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		26-AUG-21	
Miscellaneous Parameters							
Moisture	14.3		0.25	%		25-AUG-21	R5568624
L2630059-12 EX22-21-10							
Sampled By: CLIENT on 20-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	24-AUG-21	25-AUG-21	R5570161
Ethylbenzene	<0.015		0.015	mg/kg	24-AUG-21	25-AUG-21	R5570161
Toluene	0.021		0.014	mg/kg	24-AUG-21	25-AUG-21	R5570161
o-Xylene	<0.050		0.050	mg/kg	24-AUG-21	25-AUG-21	R5570161
m+p-Xylene	<0.050		0.050	mg/kg	24-AUG-21	25-AUG-21	R5570161
Surrogate: 1,4-Difluorobenzene	119.8		70-130	%	24-AUG-21	25-AUG-21	R5570161
Surrogate: 4-Bromofluorobenzene	122.0		70-130	%	24-AUG-21	25-AUG-21	R5570161
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	24-AUG-21	26-AUG-21	R5570237
Prep/Analysis Dates					24-AUG-21	26-AUG-21	R5570237
Surrogate: 2-Bromobenzotrifluoride	95.8		70-130	%	24-AUG-21	26-AUG-21	R5570237
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		26-AUG-21	
F1-BTEX	<10		10	mg/kg		26-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		26-AUG-21	
F3 (C16-C34)	231		50	mg/kg		26-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		26-AUG-21	
Total Hydrocarbons (C6-C50)	231		50	mg/kg		26-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	122.4		70-130	%	24-AUG-21	25-AUG-21	R5570163
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		26-AUG-21	
Miscellaneous Parameters							
Moisture	7.63		0.25	%		25-AUG-21	R5568624

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BTXS-MEOH-HS-MS-CL	Soil	BTEX and Styrene	EPA 8260C/5021A

The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. Target compound concentrations are measured using mass spectrometry detection.

F1-4-CALC-CL	Soil	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-MEOH-HS-FID-CL	Soil	F1(C6-C10)	CWS PHC Tier 1

The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. The F1 fraction concentration is measured using flame ionization detection.

F2-4-TMB-H/A-FID-CL	Soil	CCME F2-4 Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

This analysis is carried out in accordance with the "Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method, Canadian Council of Ministers of the Environment, December 2001." For C10 to C50 hydrocarbons (F2, F3, F4) and gravimetric heavy hydrocarbons (F4G-sg), a subsample of the sediment/soil is extracted with 1:1 hexane:acetone using a rotary extractor. The extract undergoes a silica-gel clean-up to remove polar compounds. F2, F3 & F4 are analyzed by on-column GC/FID, and F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where F4 (C34-C50) and F4G-sg results are reported for a sample, the larger of the reported values is used for comparison against the relevant CCME standard for F4.
7. The gravimetric heavy hydrocarbon results (F4G-sg), cannot be added to the C6 to C50 hydrocarbon results.
8. This method is validated for use.
9. Data from analysis of quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram.

MOISTURE-CL	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)

This analysis is carried out gravimetrically by drying the sample at 105 C

XYLENES-SUM-CALC-CL	Soil	Sum of Xylene Isomer Concentrations	CALCULATED RESULT

Total xylenes represents the sum of o-xylene and m&p-xylene.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
CL	ALS ENVIRONMENTAL - CALGARY, ALBERTA, CANADA

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L2630059 Report Date: 26-AUG-21

Client: GOLDER ASSOCIATES LTD
16820 107 Ave NW
Edmonton AB T5P 4C3
Contact: Steven Fiddler

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTXS-MEOH-HS-MS-CL	**Soil**							
Batch R5570161								
WG3603895-3 DUP		**L2630059-1**						
Benzene		0.0102	0.0099		mg/kg	2.9	30	25-AUG-21
Ethylbenzene		0.216	0.243		mg/kg	12	30	25-AUG-21
Toluene		0.249	0.282		mg/kg	12	30	25-AUG-21
o-Xylene		0.736	0.810		mg/kg	9.5	30	25-AUG-21
m+p-Xylene		1.56	1.68		mg/kg	7.7	30	25-AUG-21
WG3603895-2 LCS								
Benzene			92.0		%		70-130	25-AUG-21
Ethylbenzene			88.2		%		70-130	25-AUG-21
Toluene			89.5		%		70-130	25-AUG-21
o-Xylene			88.1		%		70-130	25-AUG-21
m+p-Xylene			88.3		%		70-130	25-AUG-21
WG3603895-1 MB								
Benzene			<0.0050		mg/kg		0.005	25-AUG-21
Ethylbenzene			<0.015		mg/kg		0.015	25-AUG-21
Toluene			<0.014		mg/kg		0.014	25-AUG-21
o-Xylene			<0.050		mg/kg		0.05	25-AUG-21
m+p-Xylene			<0.050		mg/kg		0.05	25-AUG-21
Surrogate: 1,4-Difluorobenzene			106.0		%		70-130	25-AUG-21
Surrogate: 4-Bromofluorobenzene			102.0		%		70-130	25-AUG-21
F1-MEOH-HS-FID-CL	**Soil**							
Batch R5570163								
WG3603895-3 DUP		**L2630059-1**						
F1(C6-C10)		49	53		mg/kg	8.8	30	25-AUG-21
WG3603895-2 LCS								
F1(C6-C10)			97.7		%		70-130	25-AUG-21
WG3603895-1 MB								
F1(C6-C10)			<10		mg/kg		10	25-AUG-21
Surrogate: 3,4-Dichlorotoluene			105.6		%		70-130	25-AUG-21
F2-4-TMB-H/A-FID-CL	**Soil**							
Batch R5570237								
WG3603892-4 DUP		**L2630059-1**						
F2: (C10-C16)		478	420		mg/kg	13	40	26-AUG-21
F3: (C16-C34)		100	90		mg/kg	11	40	26-AUG-21
F4: (C34-C50)		<50	<50	RPD-NA	mg/kg	N/A	40	26-AUG-21
WG3603892-3 IRM		**ALS PHC3 RM**						

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-4-TMB-H/A-FID-CL	**Soil**							
Batch R5570237								
WG3603892-3 IRM		**ALS PHC3 RM**						
F2: (C10-C16)			94.7		%		70-130	26-AUG-21
F3: (C16-C34)			92.3		%		70-130	26-AUG-21
F4: (C34-C50)			103.0		%		70-130	26-AUG-21
WG3603892-2 LCS								
F2: (C10-C16)			94.4		%		70-130	26-AUG-21
F3: (C16-C34)			91.6		%		70-130	26-AUG-21
F4: (C34-C50)			113.2		%		70-130	26-AUG-21
WG3603892-1 MB								
F2: (C10-C16)			<25		mg/kg		25	26-AUG-21
F3: (C16-C34)			<50		mg/kg		50	26-AUG-21
F4: (C34-C50)			<50		mg/kg		50	26-AUG-21
Surrogate: 2-Bromobenzotrifluoride			104.7		%		70-130	26-AUG-21
MOISTURE-CL	**Soil**							
Batch R5568624								
WG3603894-3 DUP		**L2630059-1**						
Moisture		7.24	7.43		%	2.5	20	25-AUG-21
WG3603894-2 LCS								
Moisture			96.4		%		90-110	25-AUG-21
WG3603894-1 MB								
Moisture			<0.25		%		0.25	25-AUG-21

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

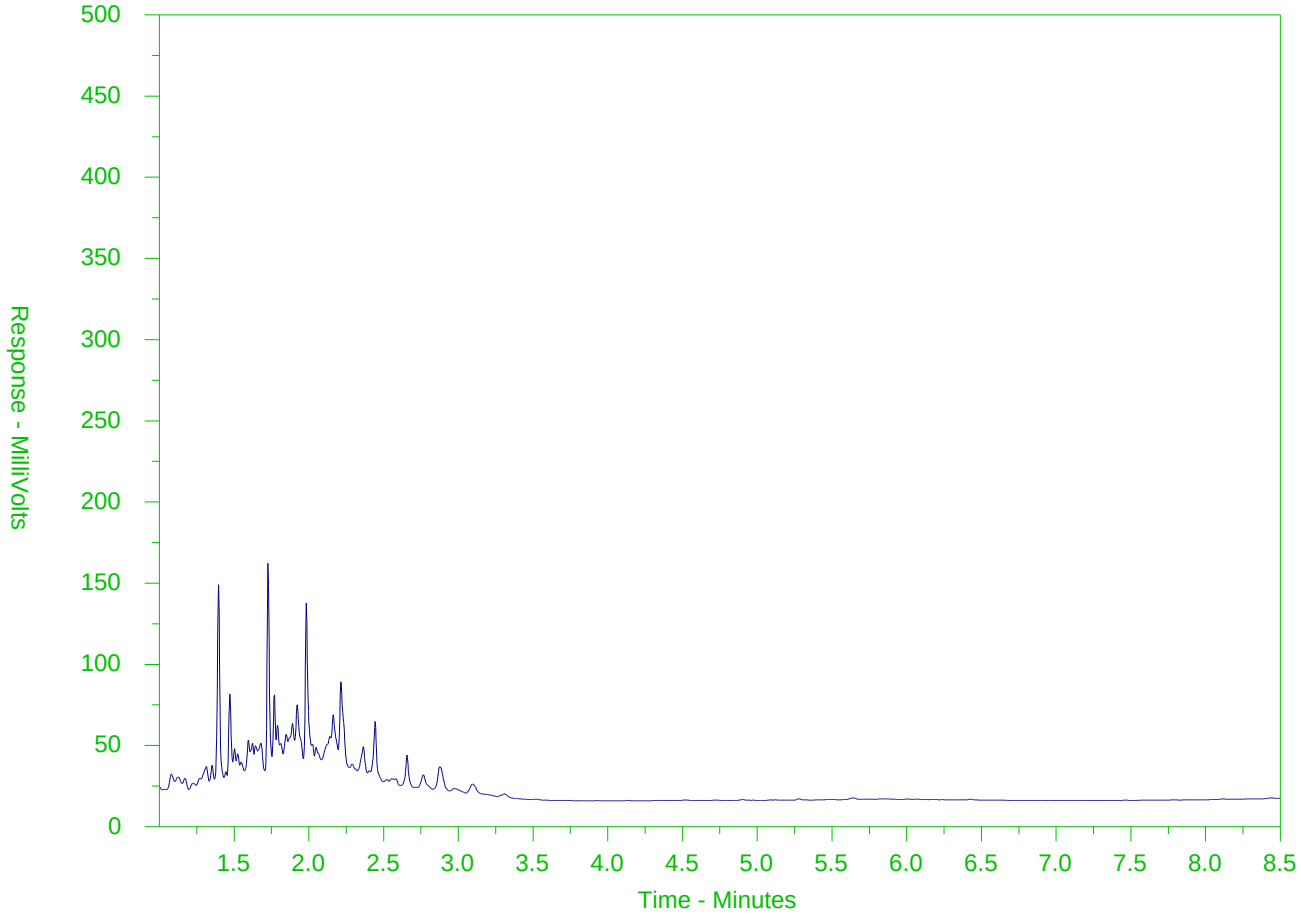
All test results reported with this submission were conducted within ALS recommended hold times.

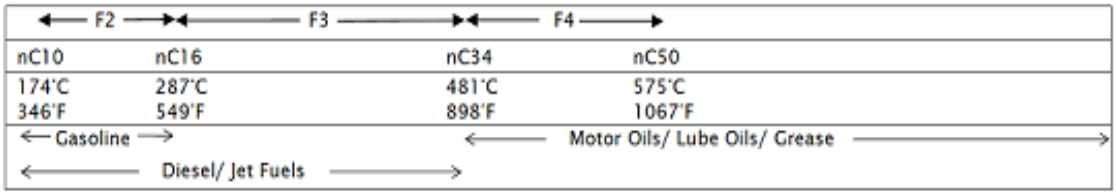
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

ALS Sample ID: L2630059-1
Client Sample ID: EX09-21-126





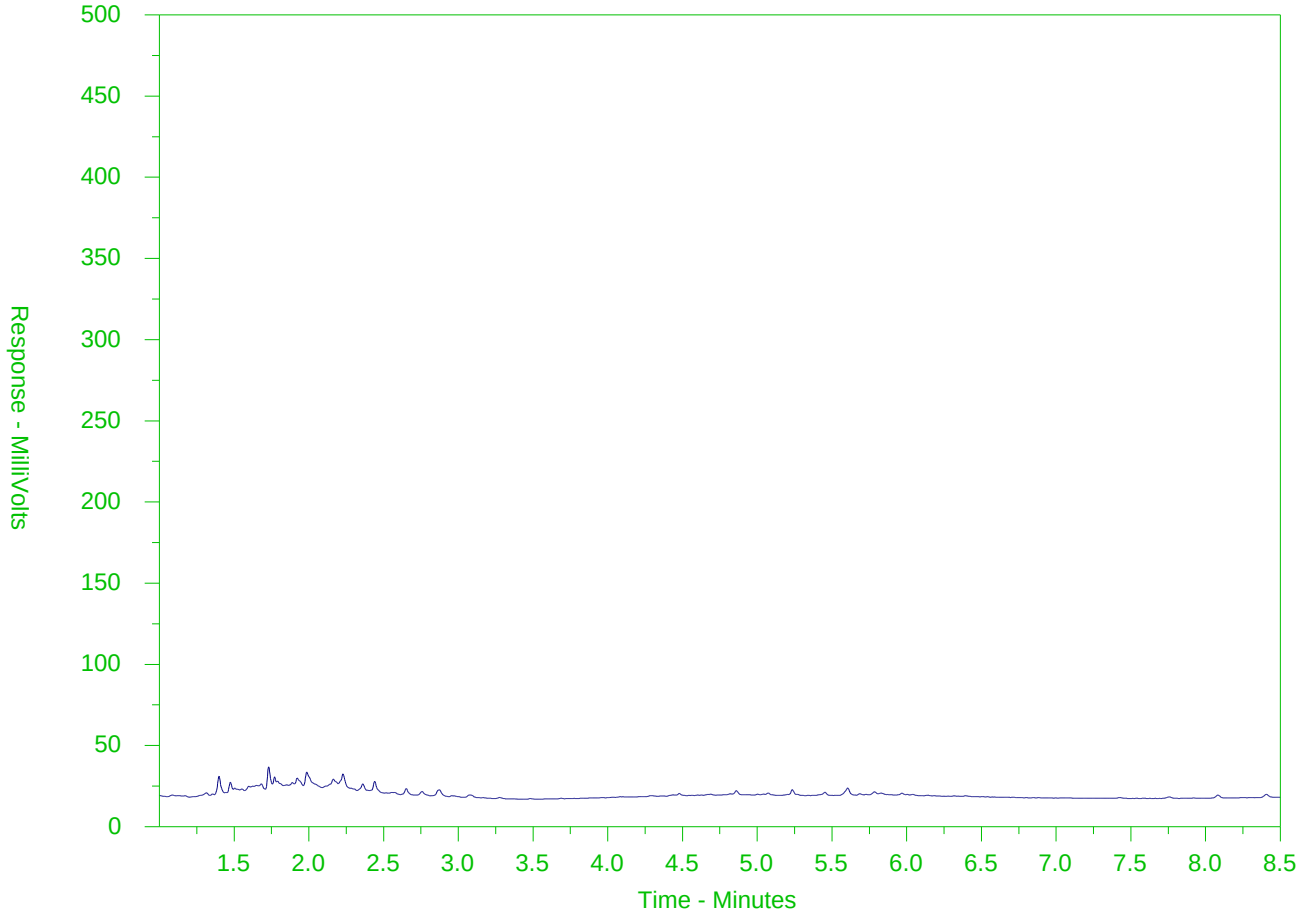
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

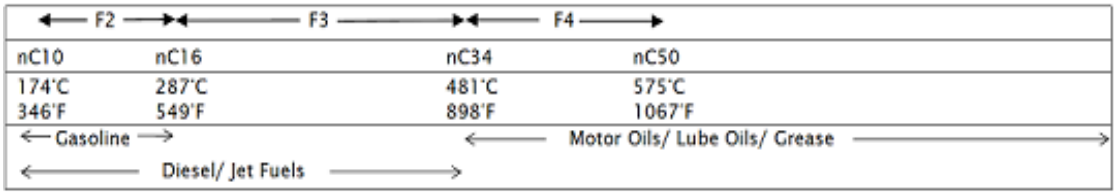
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2630059-2
Client Sample ID: EX09-21-127





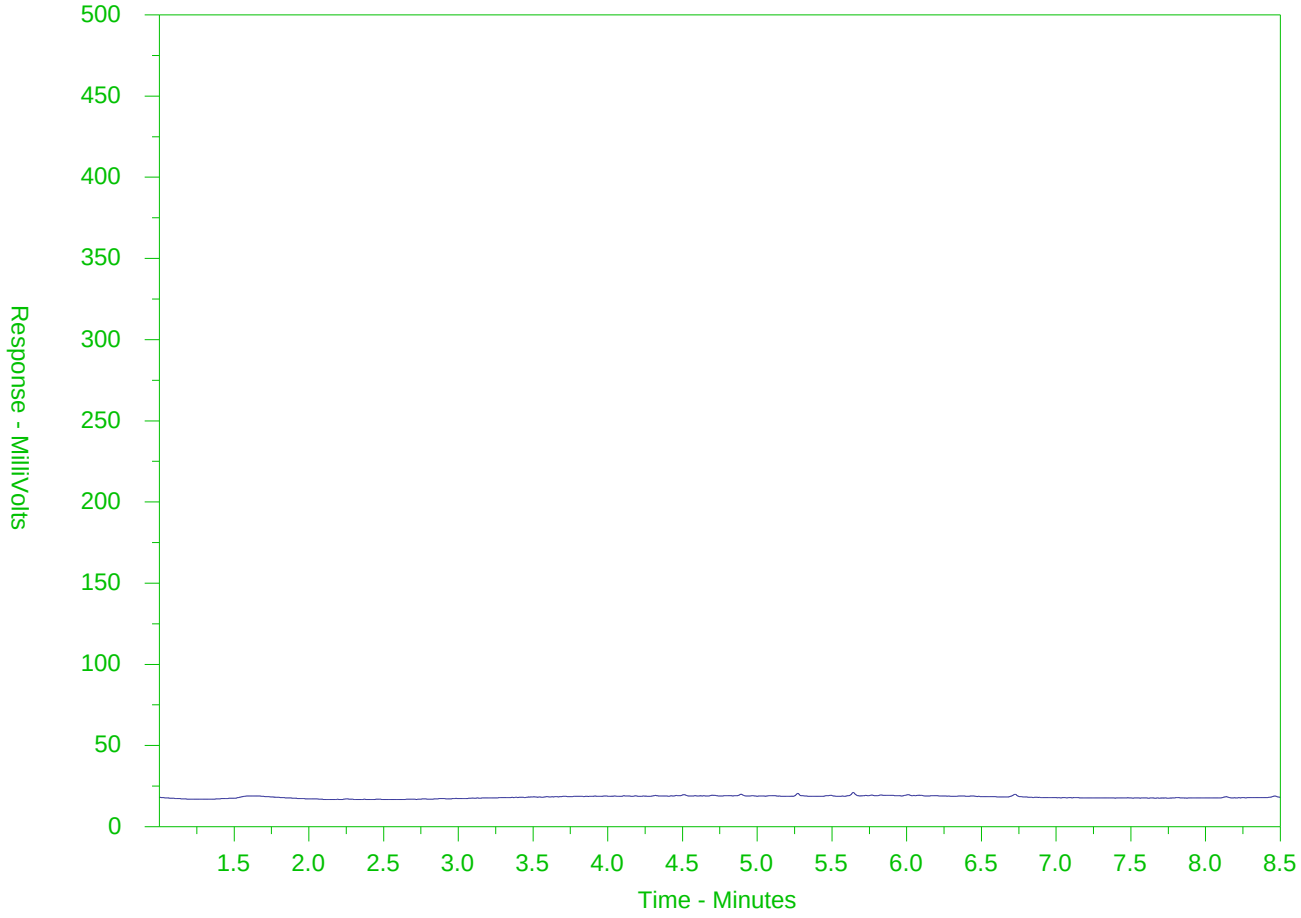
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

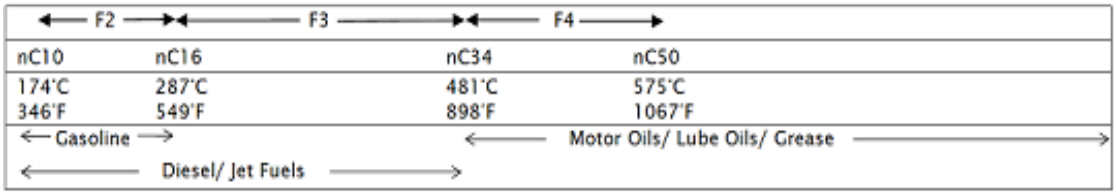
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2630059-3
Client Sample ID: EX20-21-06





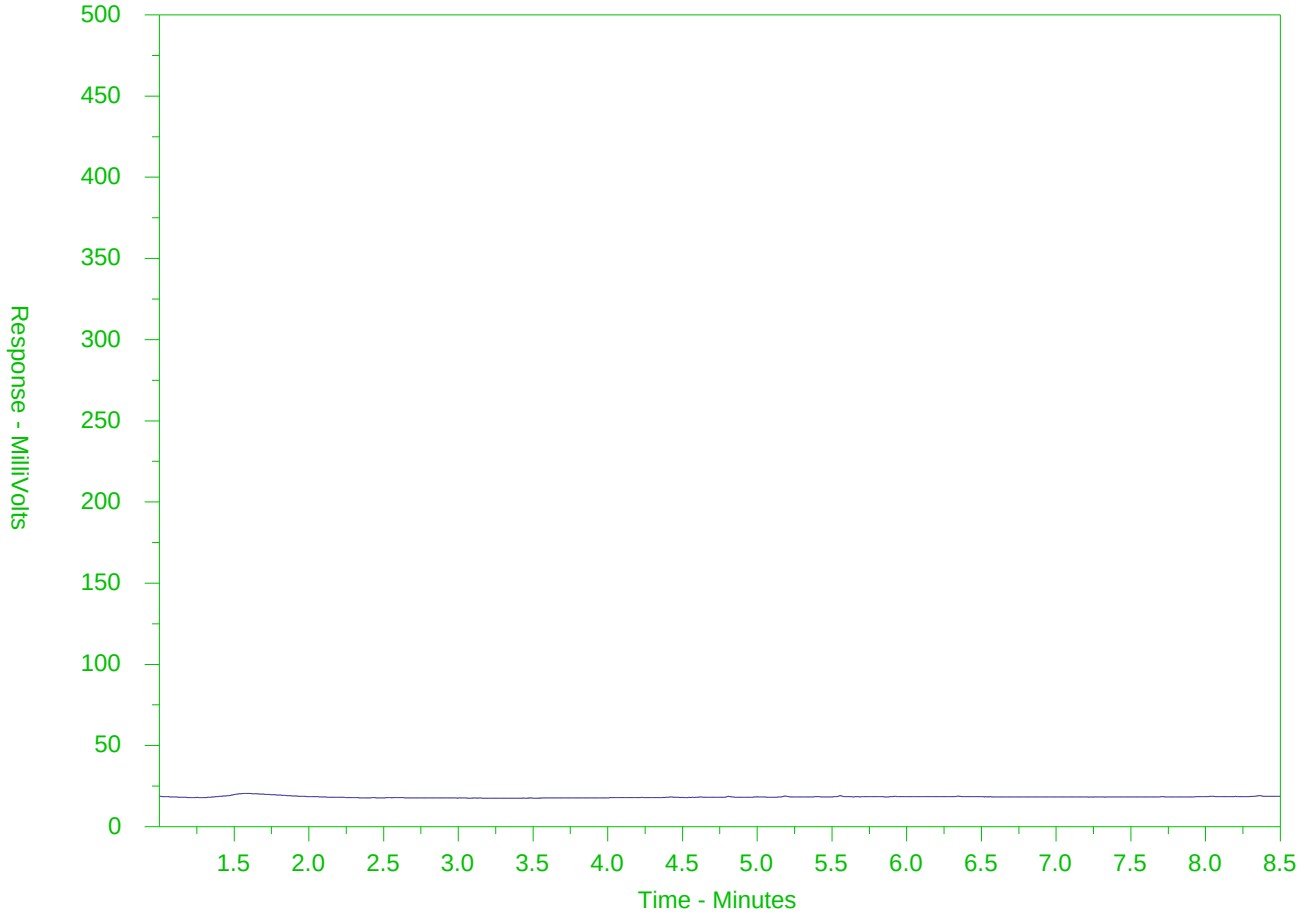
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

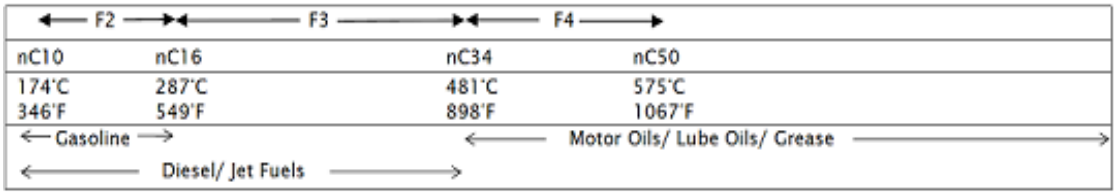
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2630059-4
Client Sample ID: EX20-21-08





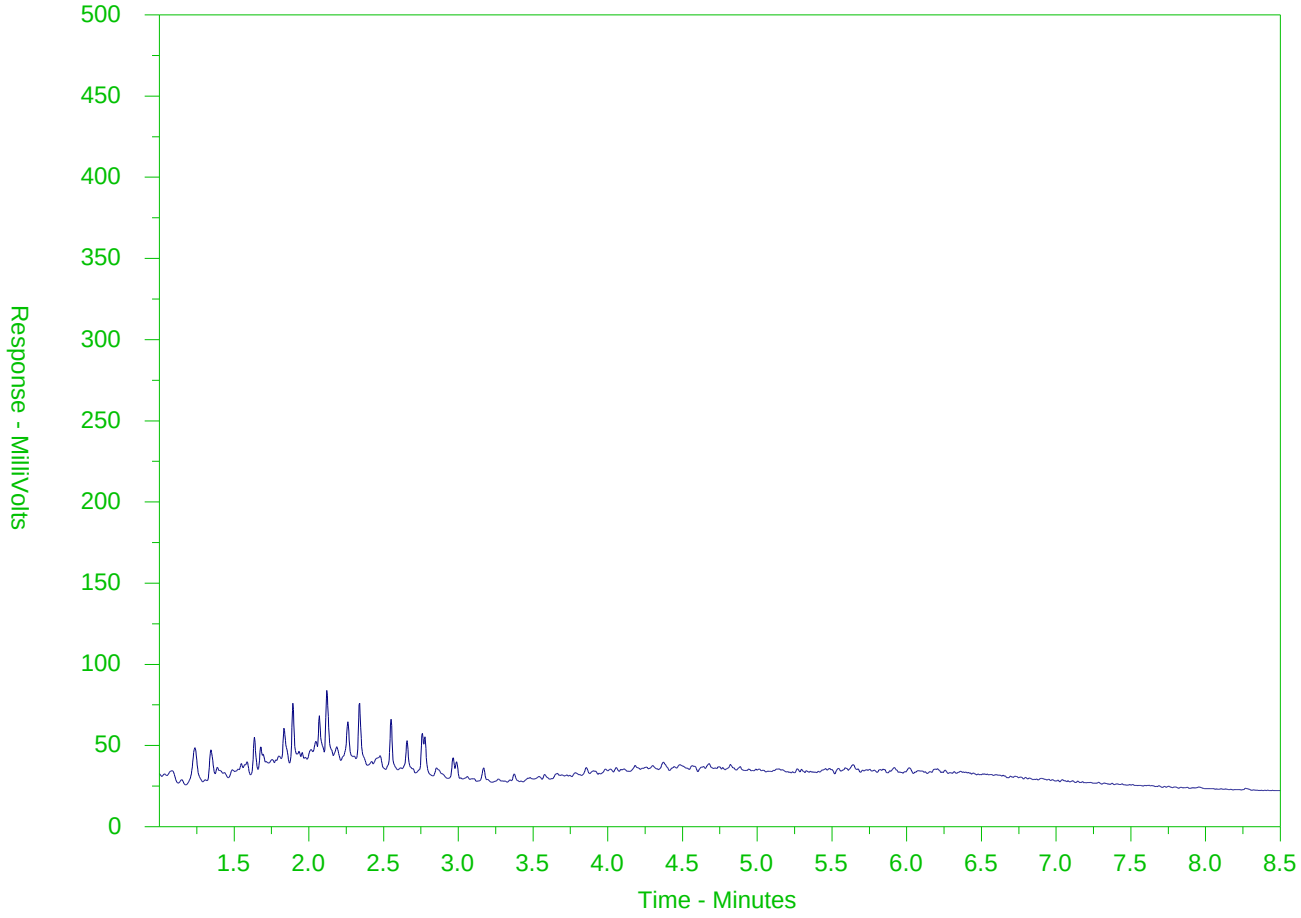
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

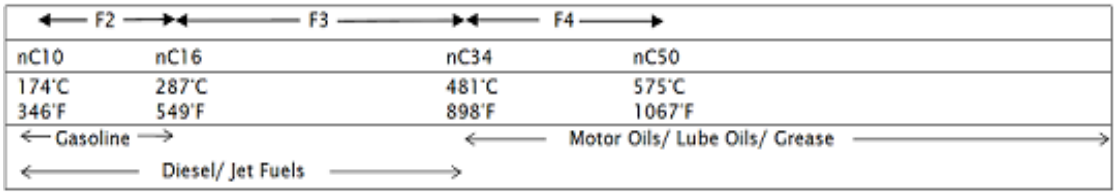
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2630059-5
Client Sample ID: EX20-21-10





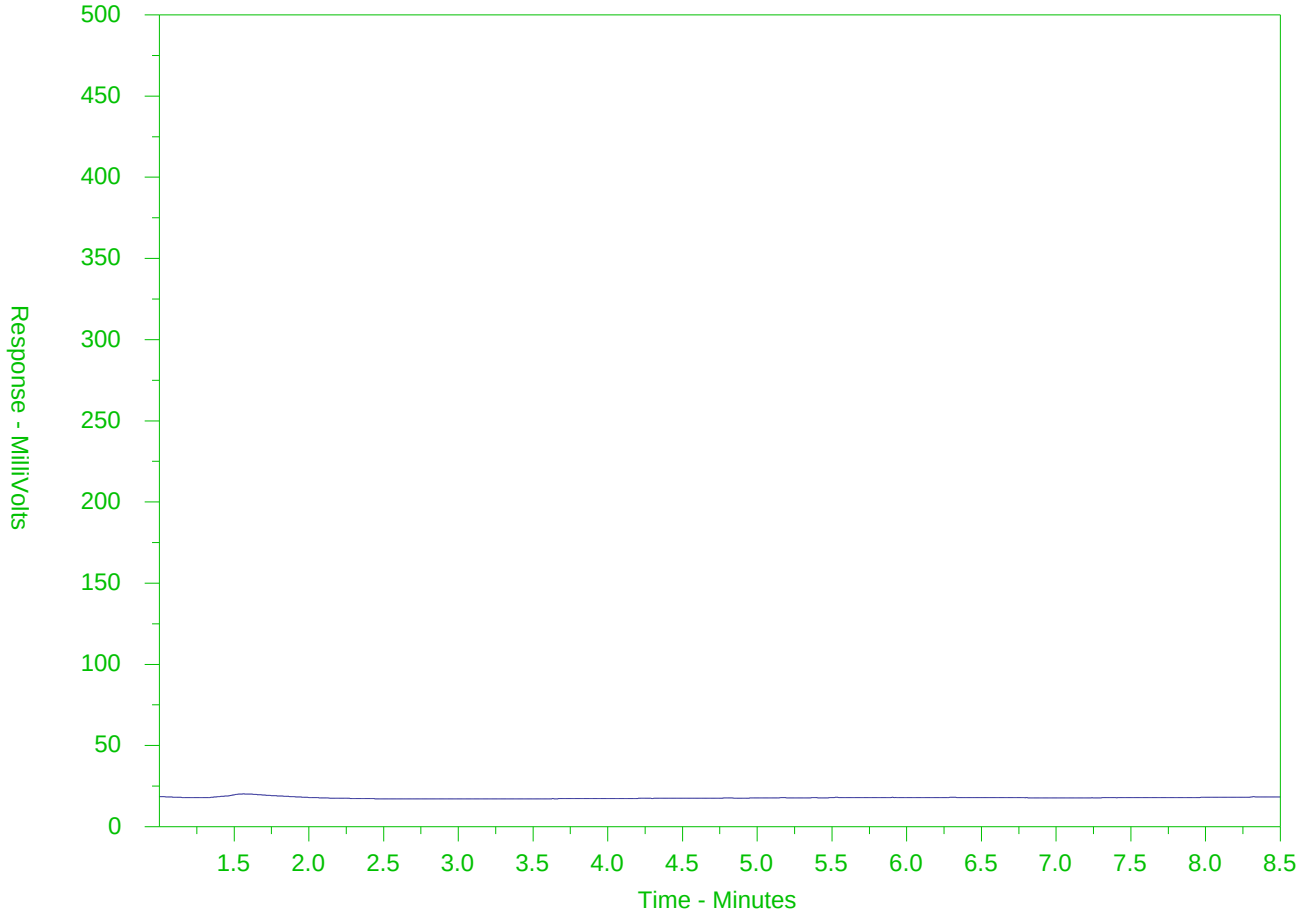
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

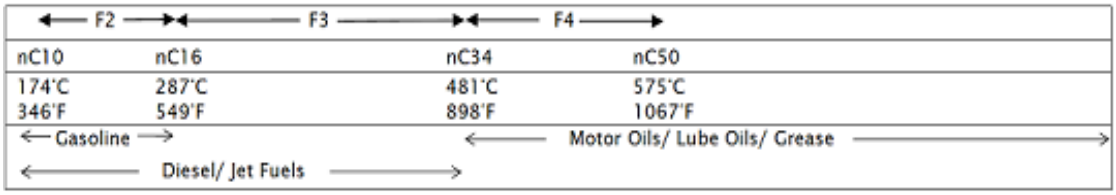
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2630059-6
Client Sample ID: EX20-21-12





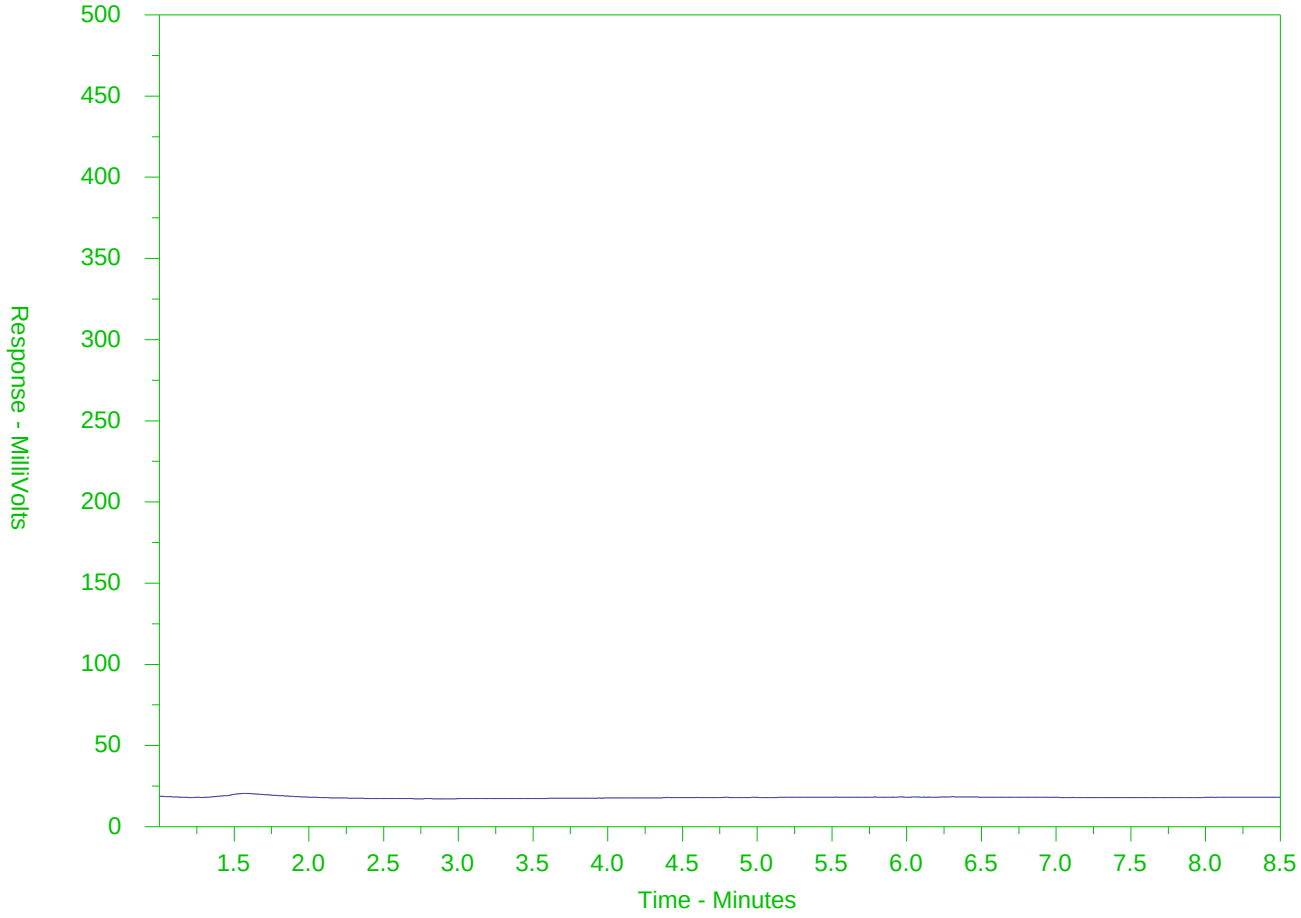
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

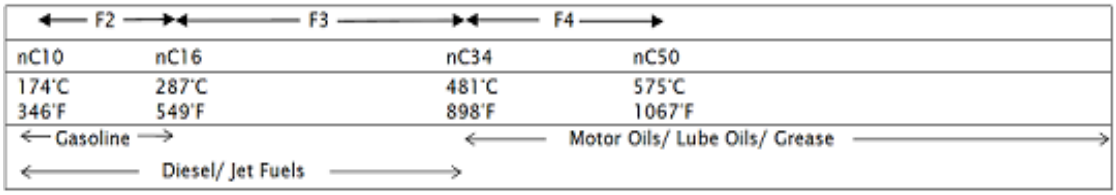
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2630059-7
Client Sample ID: EX20-21-14





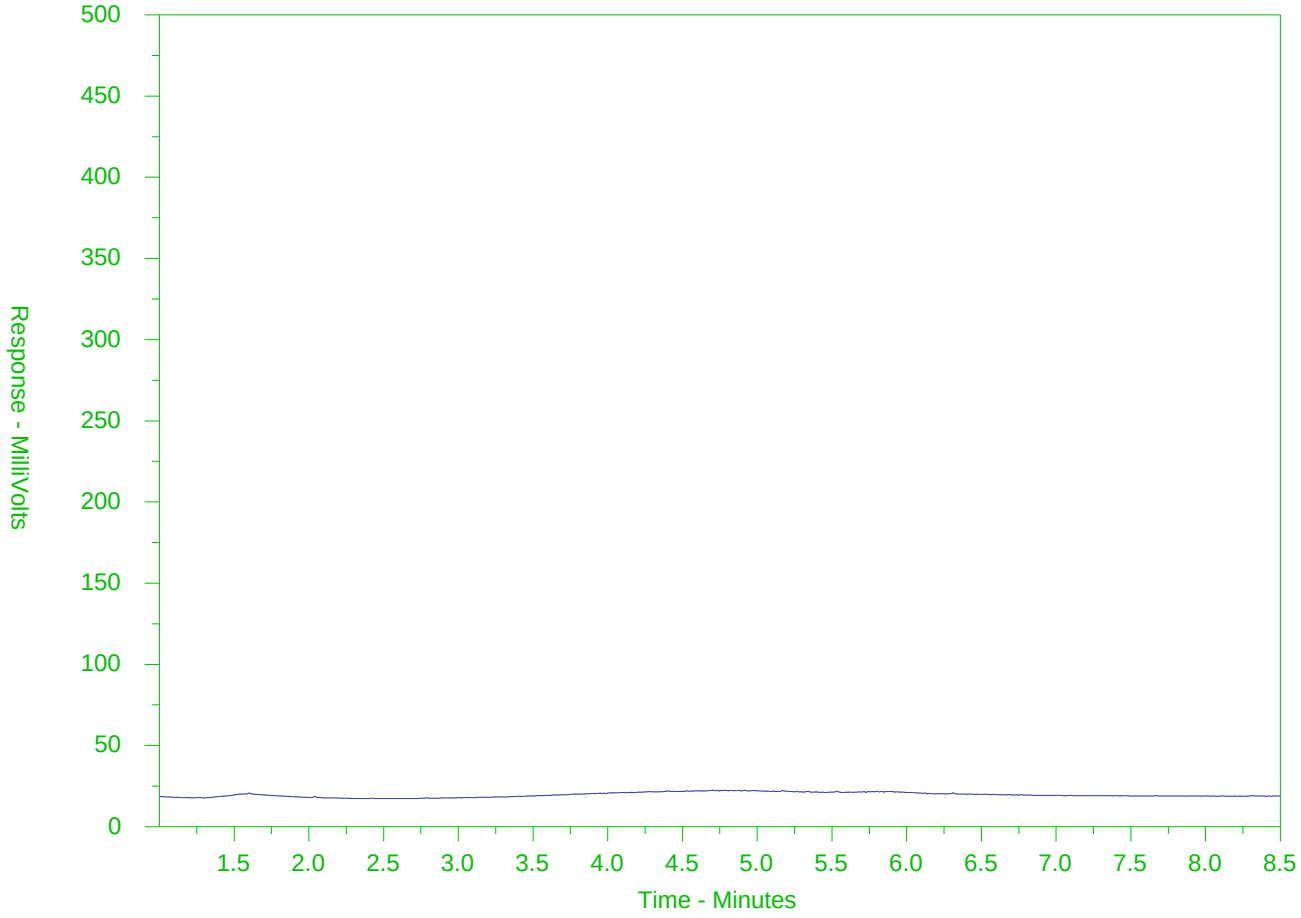
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

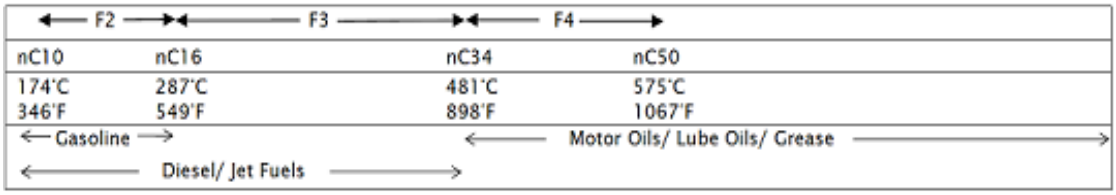
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2630059-8
Client Sample ID: EX22-21-01





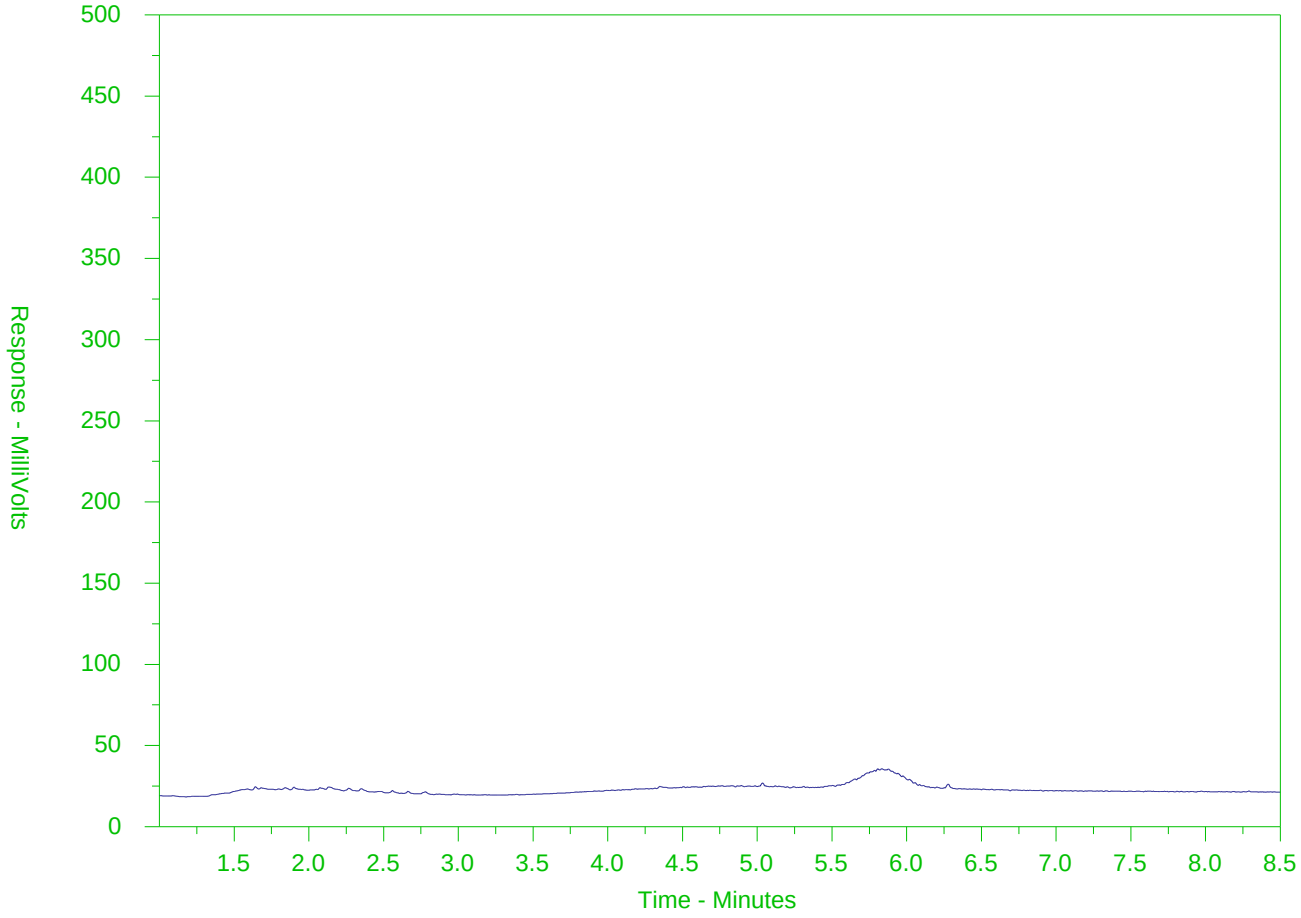
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

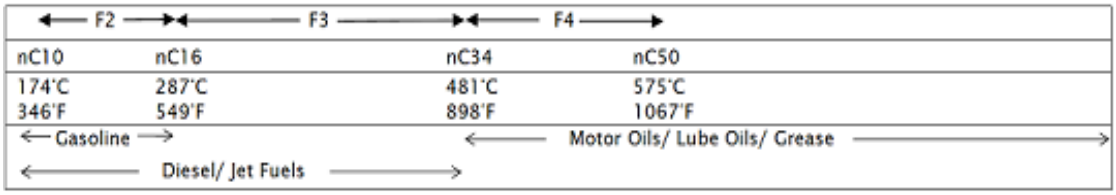
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2630059-9
Client Sample ID: EX22-21-04





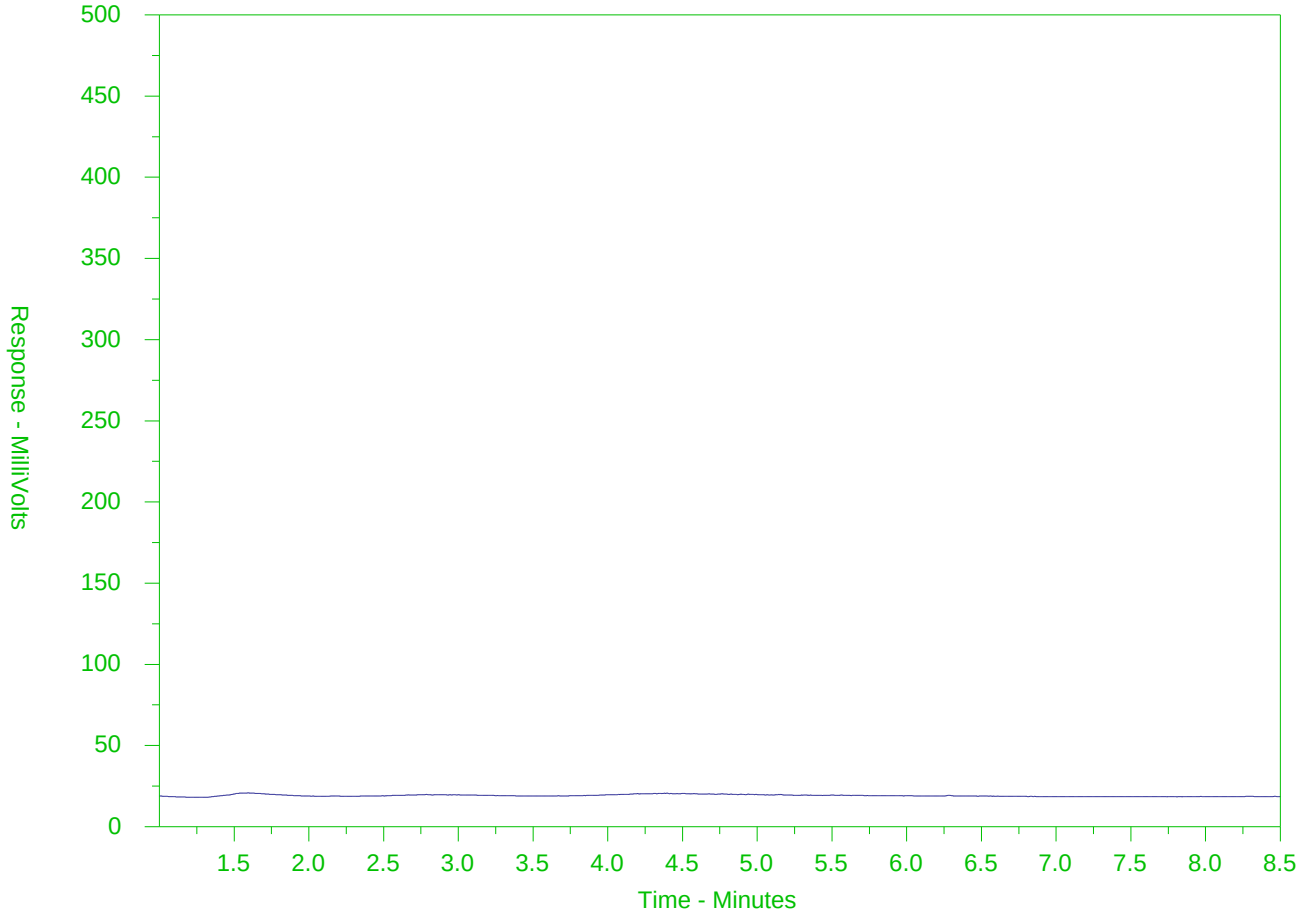
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

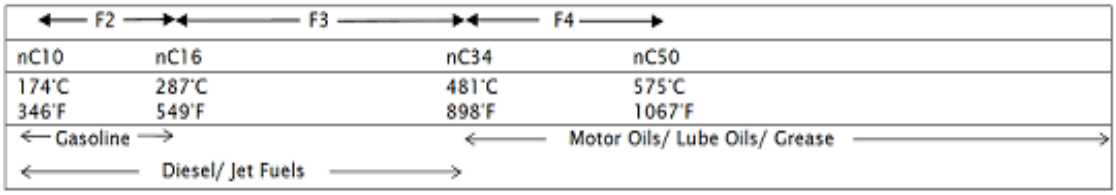
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2630059-10
Client Sample ID: EX22-21-07





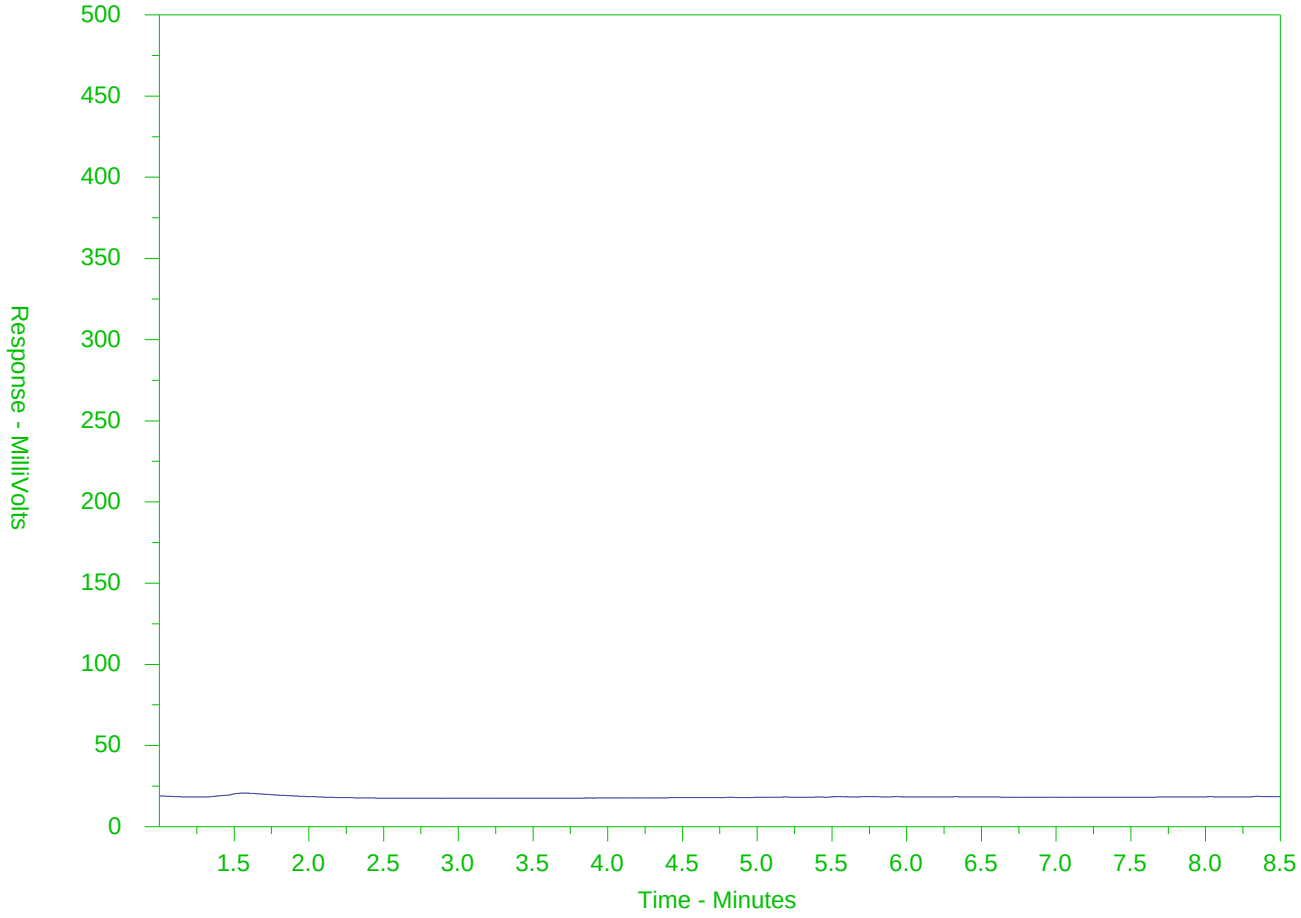
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

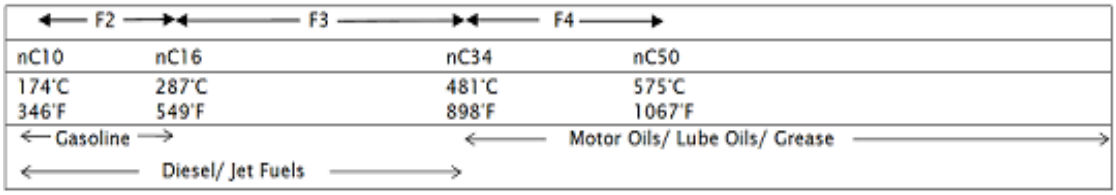
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2630059-11
Client Sample ID: EX22-21-09





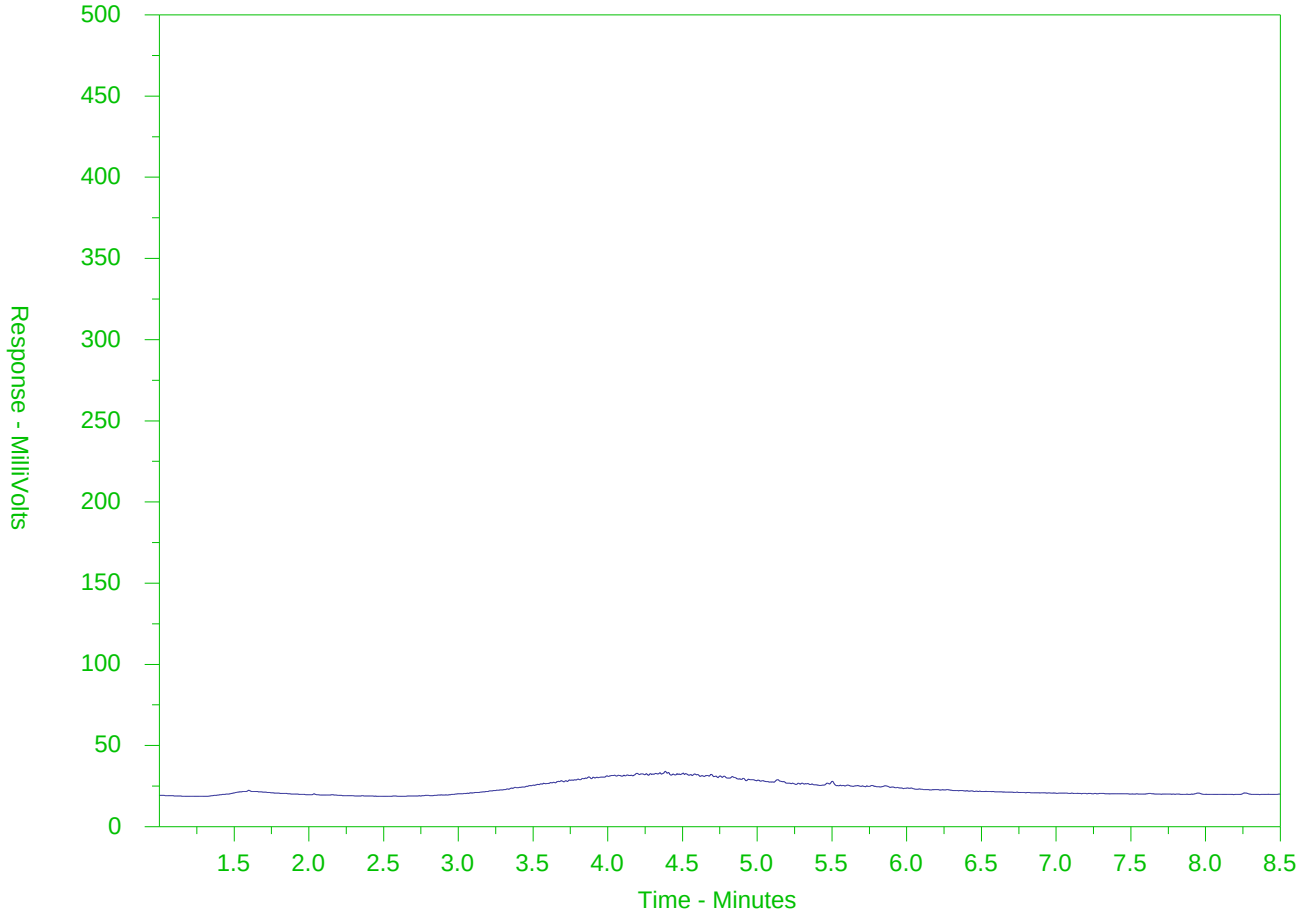
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

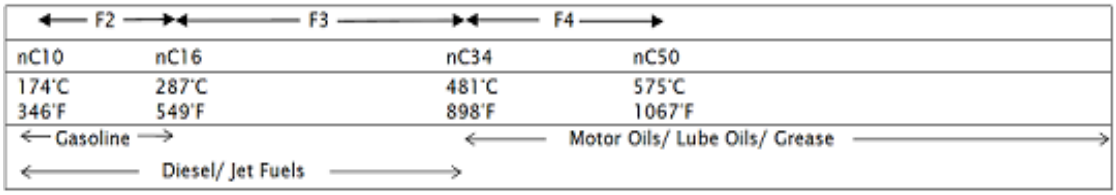
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2630059-12
Client Sample ID: EX22-21-10





The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number:

Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report ☑ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax: k.lewis@mandalayresources.com
Email 2: sfiddler@golder.com
Email 3: jmusijowski@golder.com

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax:
Email 2:

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☑
EMERGENCY: 1 Business day [E - 100%] ☐ | Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #: Q80711
Job #:
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only): L2630059

ALS Contact: Oliver Gregg **Sampler:**

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	Lead	Arsenic	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	EX09-21-126	19-Aug-21		Soil	3	/				
	EX09-21-127	19-Aug-21		Soil	3	/				
	EX20-21-06				3	/				
	EX20-21-08				3	/				
	EX20-21-10				3	/				
	EX20-21-12				3	/				
	EX20-21-14				3	/				
	EX22-21-01	Aug 2021			3	/				
	EX22-21-04				3	/				
	EX22-21-07				3	/				
	EX22-21-09				3	/				
	EX22-21-10				3	/				

L2630059-COFC

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO
Are samples for human consumption/ use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☑ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
8.1							

SHIPMENT RELEASE (client use)

Released by:	Date:	Time:
Janelle Tkach Janelle Tkach	Aug 22/21	1200

INITIAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:
	AUG 25/21	0830

FINAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

OCT 2016 FRONT

GOLDER ASSOCIATES LTD
ATTN: Karyn Lewis
76 Richmond Street, Suite 330
Toronto ON M5C 1P1

Date Received: 25-AUG-21
Report Date: 28-AUG-21 19:48 (MT)
Version: FINAL

Client Phone: --

Certificate of Analysis

Lab Work Order #: L2631648

Project P.O. #: NOT SUBMITTED
Job Reference: LUPIN 10402
C of C Numbers:
Legal Site Desc:

Harman Bhullar
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2631648-1 EX21-21-80							
Sampled By: JT/BR on 24-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	28-AUG-21	28-AUG-21	R5571636
Ethylbenzene	<0.015		0.015	mg/kg	28-AUG-21	28-AUG-21	R5571636
Toluene	<0.014		0.014	mg/kg	28-AUG-21	28-AUG-21	R5571636
o-Xylene	<0.050		0.050	mg/kg	28-AUG-21	28-AUG-21	R5571636
m+p-Xylene	<0.050		0.050	mg/kg	28-AUG-21	28-AUG-21	R5571636
Surrogate: 1,4-Difluorobenzene	119.0		70-130	%	28-AUG-21	28-AUG-21	R5571636
Surrogate: 4-Bromofluorobenzene	114.8		70-130	%	28-AUG-21	28-AUG-21	R5571636
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	28-AUG-21	28-AUG-21	R5571652
Prep/Analysis Dates					28-AUG-21	28-AUG-21	R5571652
Surrogate: 2-Bromobenzotrifluoride	80.9		70-130	%	28-AUG-21	28-AUG-21	R5571652
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		28-AUG-21	
F1-BTEX	<10		10	mg/kg		28-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		28-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		28-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		28-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		28-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	115.1		70-130	%	28-AUG-21	28-AUG-21	R5571638
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		28-AUG-21	
Miscellaneous Parameters							
Moisture	10.2		0.25	%		28-AUG-21	R5571596
L2631648-2 EX21-21-79							
Sampled By: JT/BR on 24-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	28-AUG-21	28-AUG-21	R5571636
Ethylbenzene	<0.015		0.015	mg/kg	28-AUG-21	28-AUG-21	R5571636
Toluene	<0.014		0.014	mg/kg	28-AUG-21	28-AUG-21	R5571636
o-Xylene	<0.050		0.050	mg/kg	28-AUG-21	28-AUG-21	R5571636
m+p-Xylene	<0.050		0.050	mg/kg	28-AUG-21	28-AUG-21	R5571636
Surrogate: 1,4-Difluorobenzene	105.1		70-130	%	28-AUG-21	28-AUG-21	R5571636
Surrogate: 4-Bromofluorobenzene	97.7		70-130	%	28-AUG-21	28-AUG-21	R5571636
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	28-AUG-21	28-AUG-21	R5571652
Prep/Analysis Dates					28-AUG-21	28-AUG-21	R5571652
Surrogate: 2-Bromobenzotrifluoride	78.8		70-130	%	28-AUG-21	28-AUG-21	R5571652
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		28-AUG-21	
F1-BTEX	<10		10	mg/kg		28-AUG-21	
F2 (C10-C16)	81		25	mg/kg		28-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		28-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		28-AUG-21	
Total Hydrocarbons (C6-C50)	81		50	mg/kg		28-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	128.4		70-130	%	28-AUG-21	28-AUG-21	R5571638
Sum of Xylene Isomer Concentrations							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2631648-2 EX21-21-79							
Sampled By: JT/BR on 24-AUG-21							
Matrix: SOIL							
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		28-AUG-21	
Miscellaneous Parameters							
Moisture	18.9		0.25	%		28-AUG-21	R5571596
L2631648-3 EX21-21-78							
Sampled By: JT/BR on 24-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	28-AUG-21	28-AUG-21	R5571636
Ethylbenzene	<0.015		0.015	mg/kg	28-AUG-21	28-AUG-21	R5571636
Toluene	0.412		0.014	mg/kg	28-AUG-21	28-AUG-21	R5571636
o-Xylene	<0.050		0.050	mg/kg	28-AUG-21	28-AUG-21	R5571636
m+p-Xylene	<0.050		0.050	mg/kg	28-AUG-21	28-AUG-21	R5571636
Surrogate: 1,4-Difluorobenzene	111.5		70-130	%	28-AUG-21	28-AUG-21	R5571636
Surrogate: 4-Bromofluorobenzene	93.5		70-130	%	28-AUG-21	28-AUG-21	R5571636
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	28-AUG-21	28-AUG-21	R5571652
Prep/Analysis Dates					28-AUG-21	28-AUG-21	R5571652
Surrogate: 2-Bromobenzotrifluoride	79.8		70-130	%	28-AUG-21	28-AUG-21	R5571652
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		28-AUG-21	
F1-BTEX	<10		10	mg/kg		28-AUG-21	
F2 (C10-C16)	156		25	mg/kg		28-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		28-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		28-AUG-21	
Total Hydrocarbons (C6-C50)	156		50	mg/kg		28-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	117.8		70-130	%	28-AUG-21	28-AUG-21	R5571638
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		28-AUG-21	
Miscellaneous Parameters							
Moisture	8.08		0.25	%		28-AUG-21	R5571596
L2631648-4 EX21-21-77							
Sampled By: JT/BR on 24-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	28-AUG-21	28-AUG-21	R5571636
Ethylbenzene	<0.015		0.015	mg/kg	28-AUG-21	28-AUG-21	R5571636
Toluene	0.019		0.014	mg/kg	28-AUG-21	28-AUG-21	R5571636
o-Xylene	<0.050		0.050	mg/kg	28-AUG-21	28-AUG-21	R5571636
m+p-Xylene	<0.050		0.050	mg/kg	28-AUG-21	28-AUG-21	R5571636
Surrogate: 1,4-Difluorobenzene	125.6		70-130	%	28-AUG-21	28-AUG-21	R5571636
Surrogate: 4-Bromofluorobenzene	107.0		70-130	%	28-AUG-21	28-AUG-21	R5571636
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	28-AUG-21	28-AUG-21	R5571652
Prep/Analysis Dates					28-AUG-21	28-AUG-21	R5571652
Surrogate: 2-Bromobenzotrifluoride	96.6		70-130	%	28-AUG-21	28-AUG-21	R5571652
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		28-AUG-21	
F1-BTEX	<10		10	mg/kg		28-AUG-21	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2631648-4 EX21-21-77							
Sampled By: JT/BR on 24-AUG-21							
Matrix: SOIL							
CCME Total Hydrocarbons							
F2 (C10-C16)	49		25	mg/kg		28-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		28-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		28-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		28-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	108.1		70-130	%	28-AUG-21	28-AUG-21	R5571638
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		28-AUG-21	
Miscellaneous Parameters							
Moisture	12.2		0.25	%		28-AUG-21	R5571596
L2631648-5 EX21-21-77-D							
Sampled By: JT/BR on 24-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	28-AUG-21	28-AUG-21	R5571636
Ethylbenzene	<0.015		0.015	mg/kg	28-AUG-21	28-AUG-21	R5571636
Toluene	0.021		0.014	mg/kg	28-AUG-21	28-AUG-21	R5571636
o-Xylene	<0.050		0.050	mg/kg	28-AUG-21	28-AUG-21	R5571636
m+p-Xylene	<0.050		0.050	mg/kg	28-AUG-21	28-AUG-21	R5571636
Surrogate: 1,4-Difluorobenzene	116.9		70-130	%	28-AUG-21	28-AUG-21	R5571636
Surrogate: 4-Bromofluorobenzene	109.0		70-130	%	28-AUG-21	28-AUG-21	R5571636
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	28-AUG-21	28-AUG-21	R5571652
Prep/Analysis Dates					28-AUG-21	28-AUG-21	R5571652
Surrogate: 2-Bromobenzotrifluoride	96.7		70-130	%	28-AUG-21	28-AUG-21	R5571652
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		28-AUG-21	
F1-BTEX	<10		10	mg/kg		28-AUG-21	
F2 (C10-C16)	58		25	mg/kg		28-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		28-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		28-AUG-21	
Total Hydrocarbons (C6-C50)	58		50	mg/kg		28-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	104.4		70-130	%	28-AUG-21	28-AUG-21	R5571638
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		28-AUG-21	
Miscellaneous Parameters							
Moisture	11.4		0.25	%		28-AUG-21	R5571596
L2631648-6 EX21-21-71							
Sampled By: JT/BR on 24-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	28-AUG-21	28-AUG-21	R5571636
Ethylbenzene	<0.015		0.015	mg/kg	28-AUG-21	28-AUG-21	R5571636
Toluene	1.24		0.014	mg/kg	28-AUG-21	28-AUG-21	R5571636
o-Xylene	<0.050		0.050	mg/kg	28-AUG-21	28-AUG-21	R5571636
m+p-Xylene	<0.050		0.050	mg/kg	28-AUG-21	28-AUG-21	R5571636
Surrogate: 1,4-Difluorobenzene	126.8		70-130	%	28-AUG-21	28-AUG-21	R5571636
Surrogate: 4-Bromofluorobenzene	124.8		70-130	%	28-AUG-21	28-AUG-21	R5571636

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2631648-6 EX21-21-71							
Sampled By: JT/BR on 24-AUG-21							
Matrix: SOIL							
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	28-AUG-21	28-AUG-21	R5571652
Prep/Analysis Dates					28-AUG-21	28-AUG-21	R5571652
Surrogate: 2-Bromobenzotrifluoride	95.7		70-130	%	28-AUG-21	28-AUG-21	R5571652
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		28-AUG-21	
F1-BTEX	<10		10	mg/kg		28-AUG-21	
F2 (C10-C16)	35		25	mg/kg		28-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		28-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		28-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		28-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	87.7		70-130	%	28-AUG-21	28-AUG-21	R5571638
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		28-AUG-21	
Miscellaneous Parameters							
Moisture	12.2		0.25	%		28-AUG-21	R5571596
L2631648-7 EX21-21-72							
Sampled By: JT/BR on 24-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	28-AUG-21	28-AUG-21	R5571636
Ethylbenzene	0.084		0.015	mg/kg	28-AUG-21	28-AUG-21	R5571636
Toluene	0.047		0.014	mg/kg	28-AUG-21	28-AUG-21	R5571636
o-Xylene	0.198		0.050	mg/kg	28-AUG-21	28-AUG-21	R5571636
m+p-Xylene	0.274		0.050	mg/kg	28-AUG-21	28-AUG-21	R5571636
Surrogate: 1,4-Difluorobenzene	124.4		70-130	%	28-AUG-21	28-AUG-21	R5571636
Surrogate: 4-Bromofluorobenzene	101.7		70-130	%	28-AUG-21	28-AUG-21	R5571636
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	28-AUG-21	28-AUG-21	R5571652
Prep/Analysis Dates					28-AUG-21	28-AUG-21	R5571652
Surrogate: 2-Bromobenzotrifluoride	100.7		70-130	%	28-AUG-21	28-AUG-21	R5571652
CCME Total Hydrocarbons							
F1 (C6-C10)	21		10	mg/kg		28-AUG-21	
F1-BTEX	20		10	mg/kg		28-AUG-21	
F2 (C10-C16)	402		25	mg/kg		28-AUG-21	
F3 (C16-C34)	92		50	mg/kg		28-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		28-AUG-21	
Total Hydrocarbons (C6-C50)	515		50	mg/kg		28-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	91.7		70-130	%	28-AUG-21	28-AUG-21	R5571638
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	0.472		0.071	mg/kg		28-AUG-21	
Miscellaneous Parameters							
Moisture	7.17		0.25	%		28-AUG-21	R5571596
L2631648-8 EX21-21-73							
Sampled By: JT/BR on 24-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	28-AUG-21	28-AUG-21	R5571636

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2631648-8 EX21-21-73							
Sampled By: JT/BR on 24-AUG-21							
Matrix: SOIL							
BTEX and Styrene							
Ethylbenzene	0.058		0.015	mg/kg	28-AUG-21	28-AUG-21	R5571636
Toluene	0.046		0.014	mg/kg	28-AUG-21	28-AUG-21	R5571636
o-Xylene	0.152		0.050	mg/kg	28-AUG-21	28-AUG-21	R5571636
m+p-Xylene	0.236		0.050	mg/kg	28-AUG-21	28-AUG-21	R5571636
Surrogate: 1,4-Difluorobenzene	125.1		70-130	%	28-AUG-21	28-AUG-21	R5571636
Surrogate: 4-Bromofluorobenzene	108.7		70-130	%	28-AUG-21	28-AUG-21	R5571636
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	28-AUG-21	28-AUG-21	R5571652
Prep/Analysis Dates					28-AUG-21	28-AUG-21	R5571652
Surrogate: 2-Bromobenzotrifluoride	95.8		70-130	%	28-AUG-21	28-AUG-21	R5571652
CCME Total Hydrocarbons							
F1 (C6-C10)	19		10	mg/kg		28-AUG-21	
F1-BTEX	19		10	mg/kg		28-AUG-21	
F2 (C10-C16)	265		25	mg/kg		28-AUG-21	
F3 (C16-C34)	91		50	mg/kg		28-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		28-AUG-21	
Total Hydrocarbons (C6-C50)	375		50	mg/kg		28-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	92.1		70-130	%	28-AUG-21	28-AUG-21	R5571638
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	0.388		0.071	mg/kg		28-AUG-21	
Miscellaneous Parameters							
Moisture	13.9		0.25	%		28-AUG-21	R5571596
L2631648-9 EX21-21-74							
Sampled By: JT/BR on 24-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	28-AUG-21	28-AUG-21	R5571636
Ethylbenzene	<0.015		0.015	mg/kg	28-AUG-21	28-AUG-21	R5571636
Toluene	0.025		0.014	mg/kg	28-AUG-21	28-AUG-21	R5571636
o-Xylene	<0.050		0.050	mg/kg	28-AUG-21	28-AUG-21	R5571636
m+p-Xylene	<0.050		0.050	mg/kg	28-AUG-21	28-AUG-21	R5571636
Surrogate: 1,4-Difluorobenzene	83.7		70-130	%	28-AUG-21	28-AUG-21	R5571636
Surrogate: 4-Bromofluorobenzene	84.4		70-130	%	28-AUG-21	28-AUG-21	R5571636
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	28-AUG-21	28-AUG-21	R5571652
Prep/Analysis Dates					28-AUG-21	28-AUG-21	R5571652
Surrogate: 2-Bromobenzotrifluoride	107.2		70-130	%	28-AUG-21	28-AUG-21	R5571652
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		28-AUG-21	
F1-BTEX	<10		10	mg/kg		28-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		28-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		28-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		28-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		28-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	85.0		70-130	%	28-AUG-21	28-AUG-21	R5571638
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		28-AUG-21	
Miscellaneous Parameters							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2631648-9 EX21-21-74							
Sampled By: JT/BR on 24-AUG-21							
Matrix: SOIL							
Moisture	8.09		0.25	%		28-AUG-21	R5571596
L2631648-10 EX21-21-75							
Sampled By: JT/BR on 24-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	28-AUG-21	28-AUG-21	R5571636
Ethylbenzene	<0.015		0.015	mg/kg	28-AUG-21	28-AUG-21	R5571636
Toluene	0.085		0.014	mg/kg	28-AUG-21	28-AUG-21	R5571636
o-Xylene	<0.050		0.050	mg/kg	28-AUG-21	28-AUG-21	R5571636
m+p-Xylene	<0.050		0.050	mg/kg	28-AUG-21	28-AUG-21	R5571636
Surrogate: 1,4-Difluorobenzene	112.1		70-130	%	28-AUG-21	28-AUG-21	R5571636
Surrogate: 4-Bromofluorobenzene	120.0		70-130	%	28-AUG-21	28-AUG-21	R5571636
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	28-AUG-21	28-AUG-21	R5571652
Prep/Analysis Dates					28-AUG-21	28-AUG-21	R5571652
Surrogate: 2-Bromobenzotrifluoride	92.1		70-130	%	28-AUG-21	28-AUG-21	R5571652
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		28-AUG-21	
F1-BTEX	<10		10	mg/kg		28-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		28-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		28-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		28-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		28-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	90.7		70-130	%	28-AUG-21	28-AUG-21	R5571638
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		28-AUG-21	
Miscellaneous Parameters							
Moisture	7.13		0.25	%		28-AUG-21	R5571596
L2631648-11 EX21-21-76							
Sampled By: JT/BR on 24-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	28-AUG-21	28-AUG-21	R5571636
Ethylbenzene	0.057		0.015	mg/kg	28-AUG-21	28-AUG-21	R5571636
Toluene	0.084		0.014	mg/kg	28-AUG-21	28-AUG-21	R5571636
o-Xylene	0.421		0.050	mg/kg	28-AUG-21	28-AUG-21	R5571636
m+p-Xylene	0.581		0.050	mg/kg	28-AUG-21	28-AUG-21	R5571636
Surrogate: 1,4-Difluorobenzene	102.3		70-130	%	28-AUG-21	28-AUG-21	R5571636
Surrogate: 4-Bromofluorobenzene	128.7		70-130	%	28-AUG-21	28-AUG-21	R5571636
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	28-AUG-21	28-AUG-21	R5571652
Prep/Analysis Dates					28-AUG-21	28-AUG-21	R5571652
Surrogate: 2-Bromobenzotrifluoride	103.3		70-130	%	28-AUG-21	28-AUG-21	R5571652
CCME Total Hydrocarbons							
F1 (C6-C10)	30		10	mg/kg		28-AUG-21	
F1-BTEX	29		10	mg/kg		28-AUG-21	
F2 (C10-C16)	615		25	mg/kg		28-AUG-21	
F3 (C16-C34)	205		50	mg/kg		28-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		28-AUG-21	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2631648-11 EX21-21-76							
Sampled By: JT/BR on 24-AUG-21							
Matrix: SOIL							
CCME Total Hydrocarbons							
Total Hydrocarbons (C6-C50)	850		50	mg/kg		28-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	92.1		70-130	%	28-AUG-21	28-AUG-21	R5571638
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	1.00		0.071	mg/kg		28-AUG-21	
Miscellaneous Parameters							
Moisture	10.1		0.25	%		28-AUG-21	R5571596
L2631648-12 EX21-21-76-D							
Sampled By: JT/BR on 24-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	0.0063		0.0050	mg/kg	28-AUG-21	28-AUG-21	R5571636
Ethylbenzene	0.171		0.015	mg/kg	28-AUG-21	28-AUG-21	R5571636
Toluene	0.178		0.014	mg/kg	28-AUG-21	28-AUG-21	R5571636
o-Xylene	0.835		0.050	mg/kg	28-AUG-21	28-AUG-21	R5571636
m+p-Xylene	1.23		0.050	mg/kg	28-AUG-21	28-AUG-21	R5571636
Surrogate: 1,4-Difluorobenzene	102.6		70-130	%	28-AUG-21	28-AUG-21	R5571636
Surrogate: 4-Bromofluorobenzene	112.4		70-130	%	28-AUG-21	28-AUG-21	R5571636
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	28-AUG-21	28-AUG-21	R5571652
Prep/Analysis Dates					28-AUG-21	28-AUG-21	R5571652
Surrogate: 2-Bromobenzotrifluoride	108.9		70-130	%	28-AUG-21	28-AUG-21	R5571652
CCME Total Hydrocarbons							
F1 (C6-C10)	58		10	mg/kg		28-AUG-21	
F1-BTEX	56		10	mg/kg		28-AUG-21	
F2 (C10-C16)	1190		25	mg/kg		28-AUG-21	
F3 (C16-C34)	385		50	mg/kg		28-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		28-AUG-21	
Total Hydrocarbons (C6-C50)	1630		50	mg/kg		28-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	N/A	SMI	-	%	28-AUG-21	28-AUG-21	R5571638
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	2.07		0.071	mg/kg		28-AUG-21	
Miscellaneous Parameters							
Moisture	14.7		0.25	%		28-AUG-21	R5571596
L2631648-13 EX21-21-17							
Sampled By: JT/BR on 24-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	28-AUG-21	28-AUG-21	R5571636
Ethylbenzene	<0.015		0.015	mg/kg	28-AUG-21	28-AUG-21	R5571636
Toluene	0.036		0.014	mg/kg	28-AUG-21	28-AUG-21	R5571636
o-Xylene	<0.050		0.050	mg/kg	28-AUG-21	28-AUG-21	R5571636
m+p-Xylene	<0.050		0.050	mg/kg	28-AUG-21	28-AUG-21	R5571636
Surrogate: 1,4-Difluorobenzene	112.1		70-130	%	28-AUG-21	28-AUG-21	R5571636
Surrogate: 4-Bromofluorobenzene	114.7		70-130	%	28-AUG-21	28-AUG-21	R5571636
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	28-AUG-21	28-AUG-21	R5571652
Prep/Analysis Dates					28-AUG-21	28-AUG-21	R5571652

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2631648-13 EX21-21-17							
Sampled By: JT/BR on 24-AUG-21							
Matrix: SOIL							
CCME F2-4 Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	76.9		70-130	%	28-AUG-21	28-AUG-21	R5571652
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		28-AUG-21	
F1-BTEX	<10		10	mg/kg		28-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		28-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		28-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		28-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		28-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	79.7		70-130	%	28-AUG-21	28-AUG-21	R5571638
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		28-AUG-21	
Miscellaneous Parameters							
Moisture	5.09		0.25	%		28-AUG-21	R5571596
L2631648-14 EX21-21-15							
Sampled By: JT/BR on 24-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	28-AUG-21	28-AUG-21	R5571636
Ethylbenzene	<0.015		0.015	mg/kg	28-AUG-21	28-AUG-21	R5571636
Toluene	0.048		0.014	mg/kg	28-AUG-21	28-AUG-21	R5571636
o-Xylene	<0.050		0.050	mg/kg	28-AUG-21	28-AUG-21	R5571636
m+p-Xylene	<0.050		0.050	mg/kg	28-AUG-21	28-AUG-21	R5571636
Surrogate: 1,4-Difluorobenzene	120.5		70-130	%	28-AUG-21	28-AUG-21	R5571636
Surrogate: 4-Bromofluorobenzene	113.8		70-130	%	28-AUG-21	28-AUG-21	R5571636
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	28-AUG-21	28-AUG-21	R5571652
Prep/Analysis Dates					28-AUG-21	28-AUG-21	R5571652
Surrogate: 2-Bromobenzotrifluoride	83.4		70-130	%	28-AUG-21	28-AUG-21	R5571652
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		28-AUG-21	
F1-BTEX	<10		10	mg/kg		28-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		28-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		28-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		28-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		28-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	89.9		70-130	%	28-AUG-21	28-AUG-21	R5571638
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		28-AUG-21	
Miscellaneous Parameters							
Moisture	2.79		0.25	%		28-AUG-21	R5571596
L2631648-15 EX21-21-13							
Sampled By: JT/BR on 24-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	28-AUG-21	28-AUG-21	R5571636
Ethylbenzene	<0.015		0.015	mg/kg	28-AUG-21	28-AUG-21	R5571636
Toluene	0.037		0.014	mg/kg	28-AUG-21	28-AUG-21	R5571636

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2631648-15 EX21-21-13							
Sampled By: JT/BR on 24-AUG-21							
Matrix: SOIL							
BTEX and Styrene							
o-Xylene	<0.050		0.050	mg/kg	28-AUG-21	28-AUG-21	R5571636
m+p-Xylene	<0.050		0.050	mg/kg	28-AUG-21	28-AUG-21	R5571636
Surrogate: 1,4-Difluorobenzene	109.3		70-130	%	28-AUG-21	28-AUG-21	R5571636
Surrogate: 4-Bromofluorobenzene	105.5		70-130	%	28-AUG-21	28-AUG-21	R5571636
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	28-AUG-21	28-AUG-21	R5571652
Prep/Analysis Dates					28-AUG-21	28-AUG-21	R5571652
Surrogate: 2-Bromobenzotrifluoride	84.4		70-130	%	28-AUG-21	28-AUG-21	R5571652
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		28-AUG-21	
F1-BTEX	<10		10	mg/kg		28-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		28-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		28-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		28-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		28-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	83.4		70-130	%	28-AUG-21	28-AUG-21	R5571638
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		28-AUG-21	
Miscellaneous Parameters							
Moisture	2.24		0.25	%		28-AUG-21	R5571596
L2631648-16 EX21-21-11							
Sampled By: JT/BR on 24-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	28-AUG-21	28-AUG-21	R5571636
Ethylbenzene	<0.015		0.015	mg/kg	28-AUG-21	28-AUG-21	R5571636
Toluene	0.046		0.014	mg/kg	28-AUG-21	28-AUG-21	R5571636
o-Xylene	<0.050		0.050	mg/kg	28-AUG-21	28-AUG-21	R5571636
m+p-Xylene	<0.050		0.050	mg/kg	28-AUG-21	28-AUG-21	R5571636
Surrogate: 1,4-Difluorobenzene	103.0		70-130	%	28-AUG-21	28-AUG-21	R5571636
Surrogate: 4-Bromofluorobenzene	108.3		70-130	%	28-AUG-21	28-AUG-21	R5571636
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	28-AUG-21	28-AUG-21	R5571652
Prep/Analysis Dates					28-AUG-21	28-AUG-21	R5571652
Surrogate: 2-Bromobenzotrifluoride	88.9		70-130	%	28-AUG-21	28-AUG-21	R5571652
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		28-AUG-21	
F1-BTEX	<10		10	mg/kg		28-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		28-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		28-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		28-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		28-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	74.0		70-130	%	28-AUG-21	28-AUG-21	R5571638
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		28-AUG-21	
Miscellaneous Parameters							
Moisture	10.0		0.25	%		28-AUG-21	R5571596

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2631648-17 EX21-21-09							
Sampled By: JT/BR on 24-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	28-AUG-21	28-AUG-21	R5571636
Ethylbenzene	<0.015		0.015	mg/kg	28-AUG-21	28-AUG-21	R5571636
Toluene	0.047		0.014	mg/kg	28-AUG-21	28-AUG-21	R5571636
o-Xylene	<0.050		0.050	mg/kg	28-AUG-21	28-AUG-21	R5571636
m+p-Xylene	<0.050		0.050	mg/kg	28-AUG-21	28-AUG-21	R5571636
Surrogate: 1,4-Difluorobenzene	91.4		70-130	%	28-AUG-21	28-AUG-21	R5571636
Surrogate: 4-Bromofluorobenzene	96.9		70-130	%	28-AUG-21	28-AUG-21	R5571636
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	28-AUG-21	28-AUG-21	R5571652
Prep/Analysis Dates					28-AUG-21	28-AUG-21	R5571652
Surrogate: 2-Bromobenzotrifluoride	87.1		70-130	%	28-AUG-21	28-AUG-21	R5571652
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		28-AUG-21	
F1-BTEX	<10		10	mg/kg		28-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		28-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		28-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		28-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		28-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	89.4		70-130	%	28-AUG-21	28-AUG-21	R5571638
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		28-AUG-21	
Miscellaneous Parameters							
Moisture	11.6		0.25	%		28-AUG-21	R5571596
L2631648-18 EX21-21-38							
Sampled By: JT/BR on 24-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	28-AUG-21	28-AUG-21	R5571636
Ethylbenzene	<0.015		0.015	mg/kg	28-AUG-21	28-AUG-21	R5571636
Toluene	0.029		0.014	mg/kg	28-AUG-21	28-AUG-21	R5571636
o-Xylene	<0.050		0.050	mg/kg	28-AUG-21	28-AUG-21	R5571636
m+p-Xylene	<0.050		0.050	mg/kg	28-AUG-21	28-AUG-21	R5571636
Surrogate: 1,4-Difluorobenzene	89.7		70-130	%	28-AUG-21	28-AUG-21	R5571636
Surrogate: 4-Bromofluorobenzene	84.4		70-130	%	28-AUG-21	28-AUG-21	R5571636
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	28-AUG-21	28-AUG-21	R5571652
Prep/Analysis Dates					28-AUG-21	28-AUG-21	R5571652
Surrogate: 2-Bromobenzotrifluoride	86.9		70-130	%	28-AUG-21	28-AUG-21	R5571652
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		28-AUG-21	
F1-BTEX	<10		10	mg/kg		28-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		28-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		28-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		28-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		28-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	79.5		70-130	%	28-AUG-21	28-AUG-21	R5571638
Sum of Xylene Isomer Concentrations							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2631648-18 EX21-21-38							
Sampled By: JT/BR on 24-AUG-21							
Matrix: SOIL							
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		28-AUG-21	
Miscellaneous Parameters							
Moisture	8.74		0.25	%		28-AUG-21	R5571596
L2631648-19 EX21-21-38-D							
Sampled By: JT/BR on 24-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	28-AUG-21	28-AUG-21	R5571636
Ethylbenzene	<0.015		0.015	mg/kg	28-AUG-21	28-AUG-21	R5571636
Toluene	0.041		0.014	mg/kg	28-AUG-21	28-AUG-21	R5571636
o-Xylene	<0.050		0.050	mg/kg	28-AUG-21	28-AUG-21	R5571636
m+p-Xylene	<0.050		0.050	mg/kg	28-AUG-21	28-AUG-21	R5571636
Surrogate: 1,4-Difluorobenzene	88.4		70-130	%	28-AUG-21	28-AUG-21	R5571636
Surrogate: 4-Bromofluorobenzene	80.5		70-130	%	28-AUG-21	28-AUG-21	R5571636
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	28-AUG-21	28-AUG-21	R5571652
Prep/Analysis Dates					28-AUG-21	28-AUG-21	R5571652
Surrogate: 2-Bromobenzotrifluoride	80.6		70-130	%	28-AUG-21	28-AUG-21	R5571652
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		28-AUG-21	
F1-BTEX	<10		10	mg/kg		28-AUG-21	
F2 (C10-C16)	<25		25	mg/kg		28-AUG-21	
F3 (C16-C34)	<50		50	mg/kg		28-AUG-21	
F4 (C34-C50)	<50		50	mg/kg		28-AUG-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		28-AUG-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	76.4		70-130	%	28-AUG-21	28-AUG-21	R5571638
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		28-AUG-21	
Miscellaneous Parameters							
Moisture	8.21		0.25	%		28-AUG-21	R5571596

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
SMI	Surrogate recovery could not be measured due to sample matrix interference.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BTXS-MEOH-HS-MS-CL	Soil	BTEX and Styrene	EPA 8260C/5021A

The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. Target compound concentrations are measured using mass spectrometry detection.

F1-4-CALC-CL	Soil	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-MEOH-HS-FID-CL	Soil	F1(C6-C10)	CWS PHC Tier 1

The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. The F1 fraction concentration is measured using flame ionization detection.

F2-4-TMB-H/A-FID-CL	Soil	CCME F2-4 Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

This analysis is carried out in accordance with the "Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method, Canadian Council of Ministers of the Environment, December 2001." For C10 to C50 hydrocarbons (F2, F3, F4) and gravimetric heavy hydrocarbons (F4G-sg), a subsample of the sediment/soil is extracted with 1:1 hexane:acetone using a rotary extractor. The extract undergoes a silica-gel clean-up to remove polar compounds. F2, F3 & F4 are analyzed by on-column GC/FID, and F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where F4 (C34-C50) and F4G-sg results are reported for a sample, the larger of the reported values is used for comparison against the relevant CCME standard for F4.
7. The gravimetric heavy hydrocarbon results (F4G-sg), cannot be added to the C6 to C50 hydrocarbon results.
8. This method is validated for use.
9. Data from analysis of quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram.

MOISTURE-CL	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)

This analysis is carried out gravimetrically by drying the sample at 105 C

XYLENES-SUM-CALC-CL	Soil	Sum of Xylene Isomer Concentrations	CALCULATED RESULT

Total xylenes represents the sum of o-xylene and m&p-xylene.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
CL	ALS ENVIRONMENTAL - CALGARY, ALBERTA, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Client: GOLDER ASSOCIATES LTD
76 Richmond Street, Suite 330
Toronto ON M5C 1P1
Contact: Karyn Lewis

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTXS-MEOH-HS-MS-CL	**Soil**							
Batch R5571636								
WG3606845-3 DUP		**L2631648-1**						
Benzene		<0.0050	<0.0050	RPD-NA	mg/kg	N/A	30	28-AUG-21
Ethylbenzene		<0.015	<0.015	RPD-NA	mg/kg	N/A	30	28-AUG-21
Toluene		<0.014	<0.014	RPD-NA	mg/kg	N/A	30	28-AUG-21
o-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	28-AUG-21
m+p-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	28-AUG-21
WG3606845-2 LCS								
Benzene			86.9		%		70-130	28-AUG-21
Ethylbenzene			92.1		%		70-130	28-AUG-21
Toluene			83.9		%		70-130	28-AUG-21
o-Xylene			91.5		%		70-130	28-AUG-21
m+p-Xylene			96.9		%		70-130	28-AUG-21
WG3606845-1 MB								
Benzene			<0.0050		mg/kg		0.005	28-AUG-21
Ethylbenzene			<0.015		mg/kg		0.015	28-AUG-21
Toluene			<0.014		mg/kg		0.014	28-AUG-21
o-Xylene			<0.050		mg/kg		0.05	28-AUG-21
m+p-Xylene			<0.050		mg/kg		0.05	28-AUG-21
Surrogate: 1,4-Difluorobenzene			94.8		%		70-130	28-AUG-21
Surrogate: 4-Bromofluorobenzene			85.5		%		70-130	28-AUG-21
F1-MEOH-HS-FID-CL	**Soil**							
Batch R5571638								
WG3606845-3 DUP		**L2631648-1**						
F1(C6-C10)		<10	<10	RPD-NA	mg/kg	N/A	30	28-AUG-21
WG3606845-2 LCS								
F1(C6-C10)			107.8		%		70-130	28-AUG-21
WG3606845-1 MB								
F1(C6-C10)			<10		mg/kg		10	28-AUG-21
Surrogate: 3,4-Dichlorotoluene			102.0		%		70-130	28-AUG-21
F2-4-TMB-H/A-FID-CL	**Soil**							
Batch R5571652								
WG3606843-4 DUP		**L2631648-1**						
F2: (C10-C16)		<25	<25	RPD-NA	mg/kg	N/A	40	28-AUG-21
F3: (C16-C34)		<50	<50	RPD-NA	mg/kg	N/A	40	28-AUG-21
F4: (C34-C50)		<50	<50	RPD-NA	mg/kg	N/A	40	28-AUG-21
WG3606843-3 IRM		**ALS PHC3 RM**						

Quality Control Report

Workorder: L2631648 Report Date: 28-AUG-21

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-4-TMB-H/A-FID-CL	**Soil**							
Batch R5571652								
WG3606843-3 IRM		**ALS PHC3 RM**						
F2: (C10-C16)			113.9		%		70-130	28-AUG-21
F3: (C16-C34)			98.7		%		70-130	28-AUG-21
F4: (C34-C50)			113.7		%		70-130	28-AUG-21
WG3606843-2 LCS								
F2: (C10-C16)			111.6		%		70-130	28-AUG-21
F3: (C16-C34)			112.1		%		70-130	28-AUG-21
F4: (C34-C50)			110.6		%		70-130	28-AUG-21
WG3606843-1 MB								
F2: (C10-C16)			<25		mg/kg		25	28-AUG-21
F3: (C16-C34)			<50		mg/kg		50	28-AUG-21
F4: (C34-C50)			<50		mg/kg		50	28-AUG-21
Surrogate: 2-Bromobenzotrifluoride			95.0		%		70-130	28-AUG-21
MOISTURE-CL	**Soil**							
Batch R5571596								
WG3606844-3 DUP		**L2631648-1**						
Moisture		10.2	10.8		%	5.8	20	28-AUG-21
WG3606844-2 LCS								
Moisture			99.7		%		90-110	28-AUG-21
WG3606844-1 MB								
Moisture			<0.25		%		0.25	28-AUG-21

Quality Control Report

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

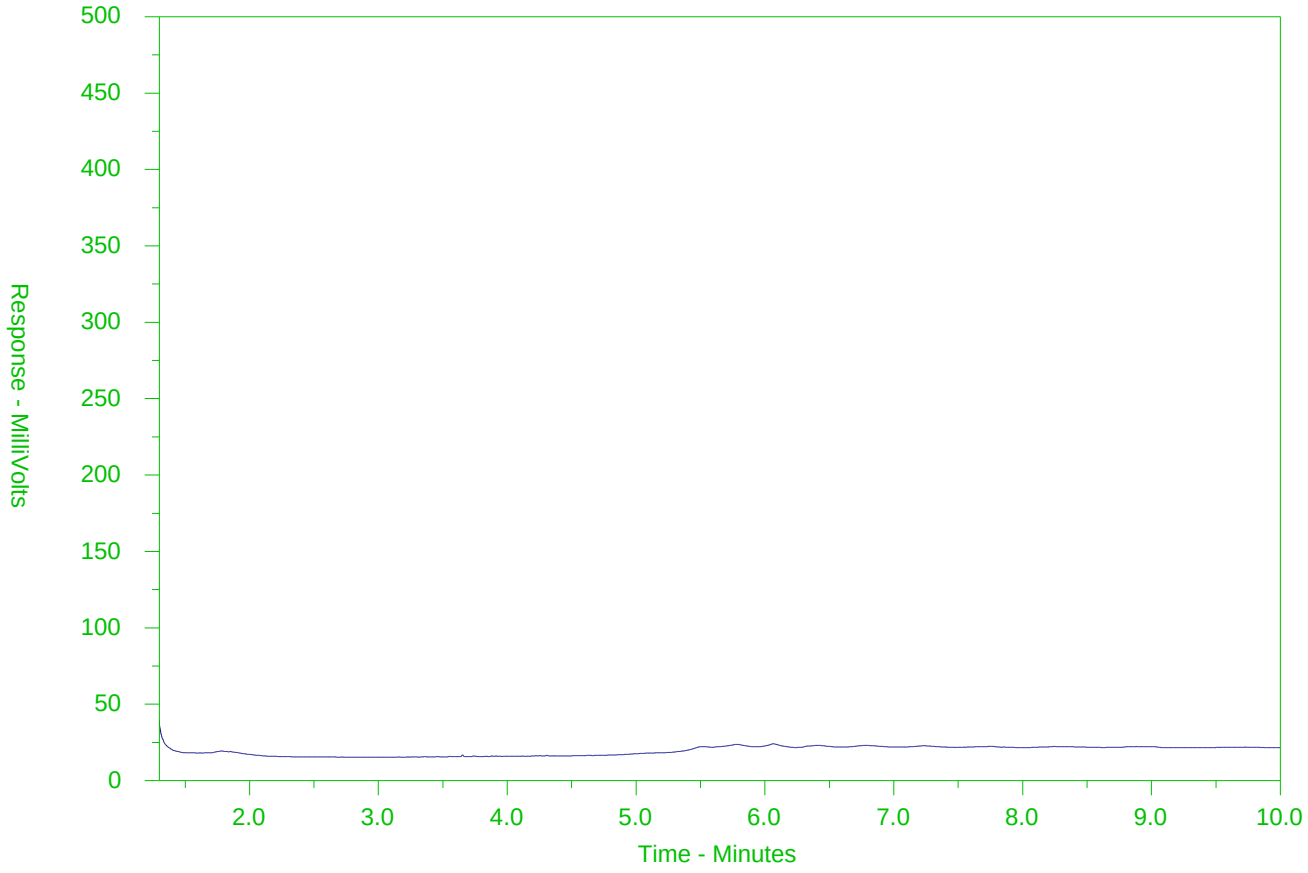
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2631648-1
Client Sample ID: EX21-21-80



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

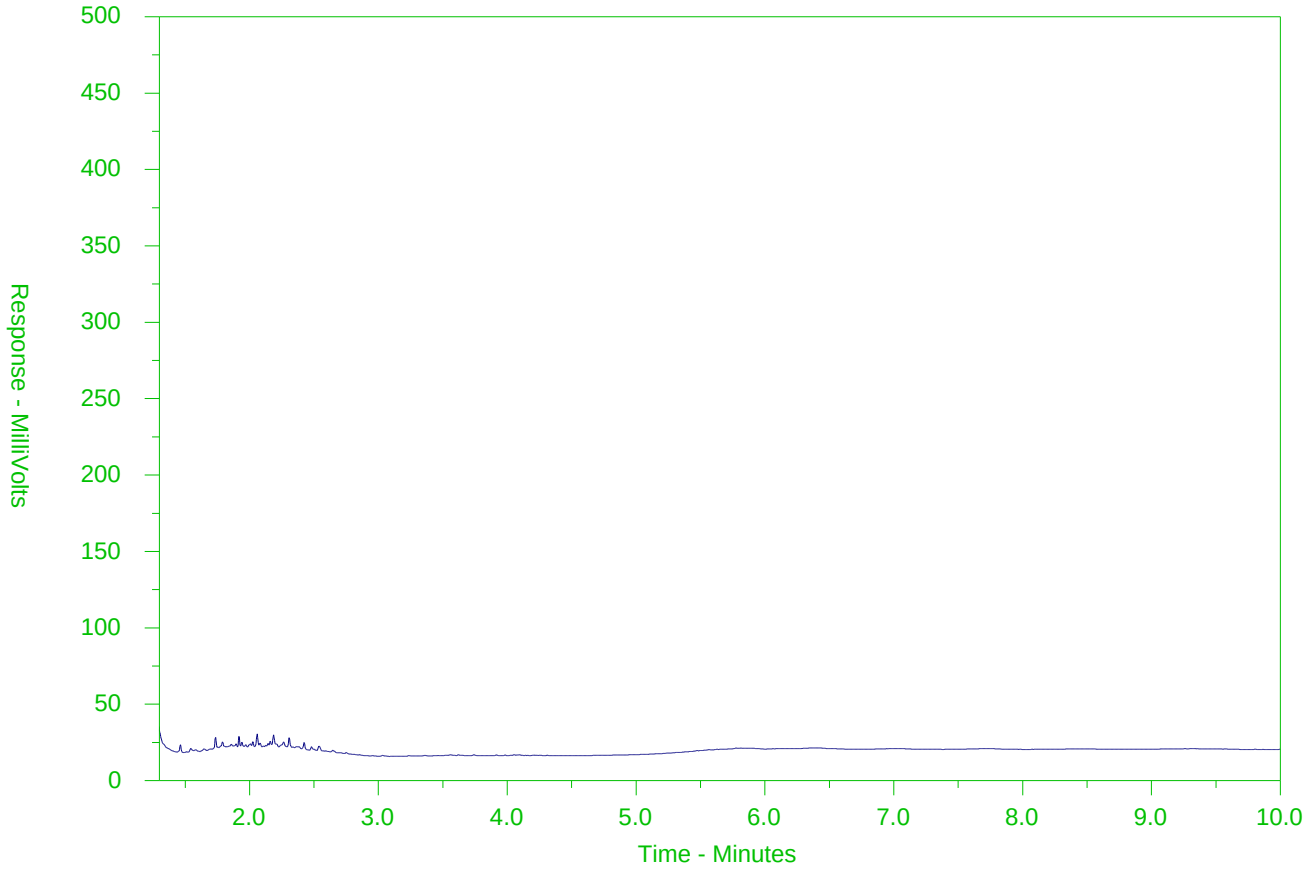
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2631648-2
Client Sample ID: EX21-21-79



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

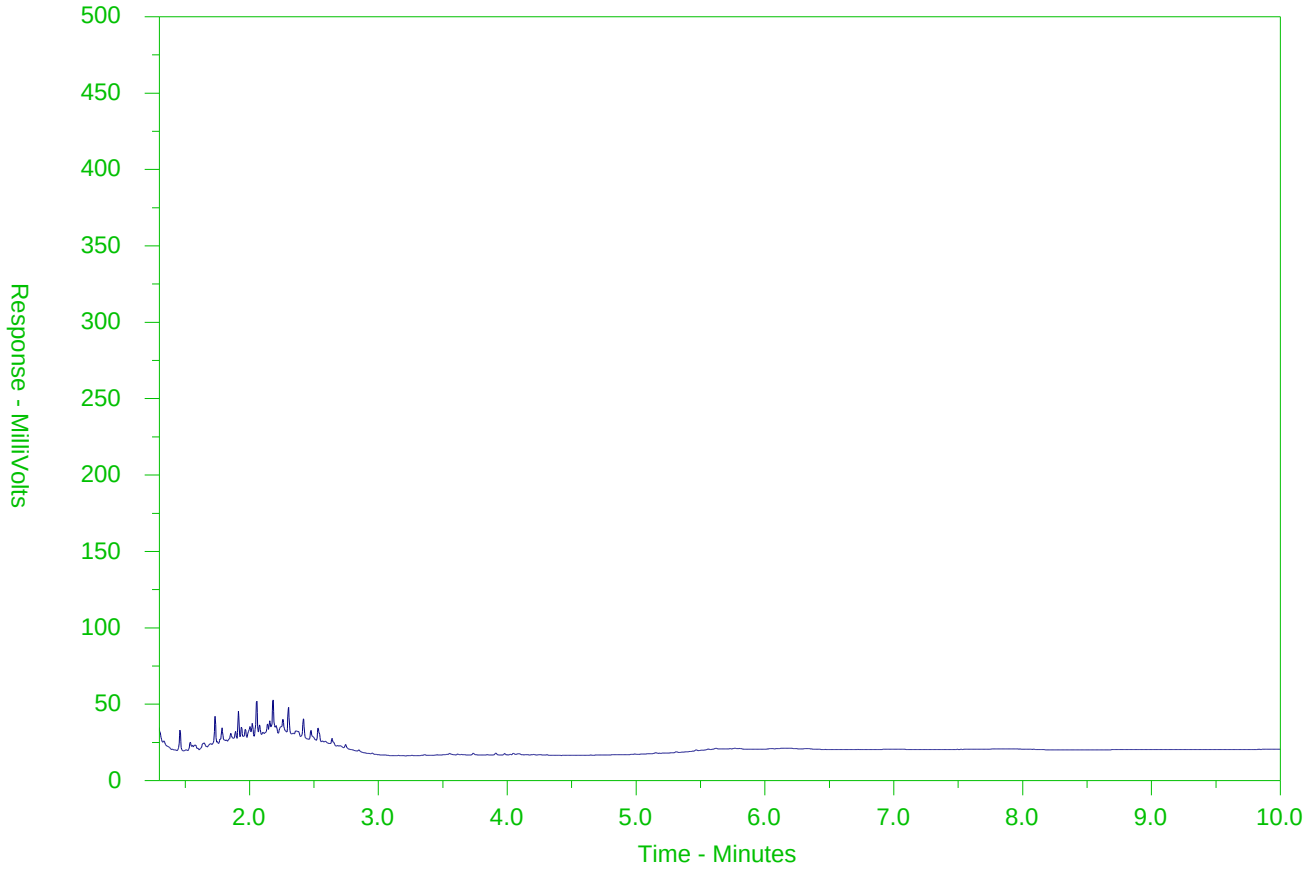
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2631648-3
Client Sample ID: EX21-21-78



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

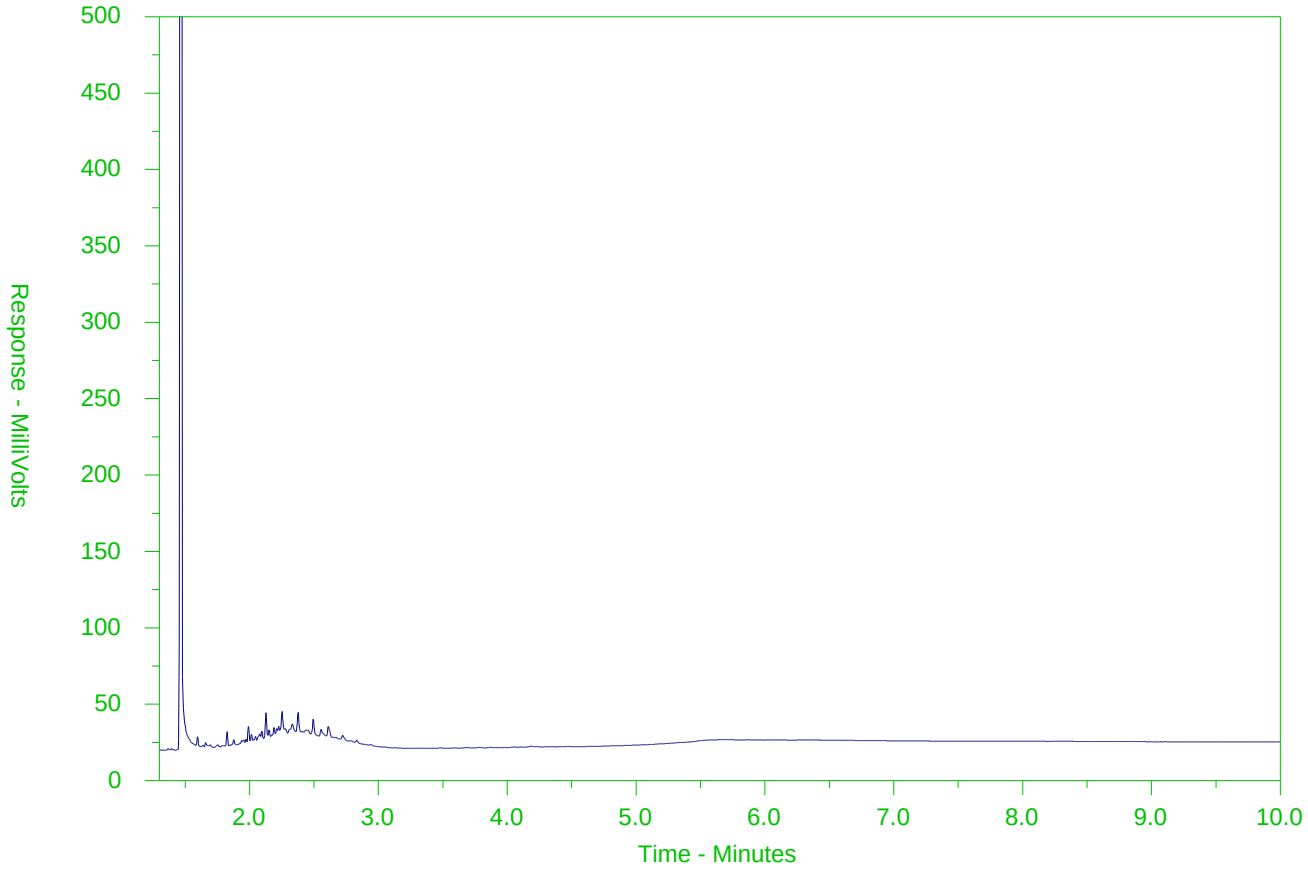
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2631648-4
Client Sample ID: EX21-21-77



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

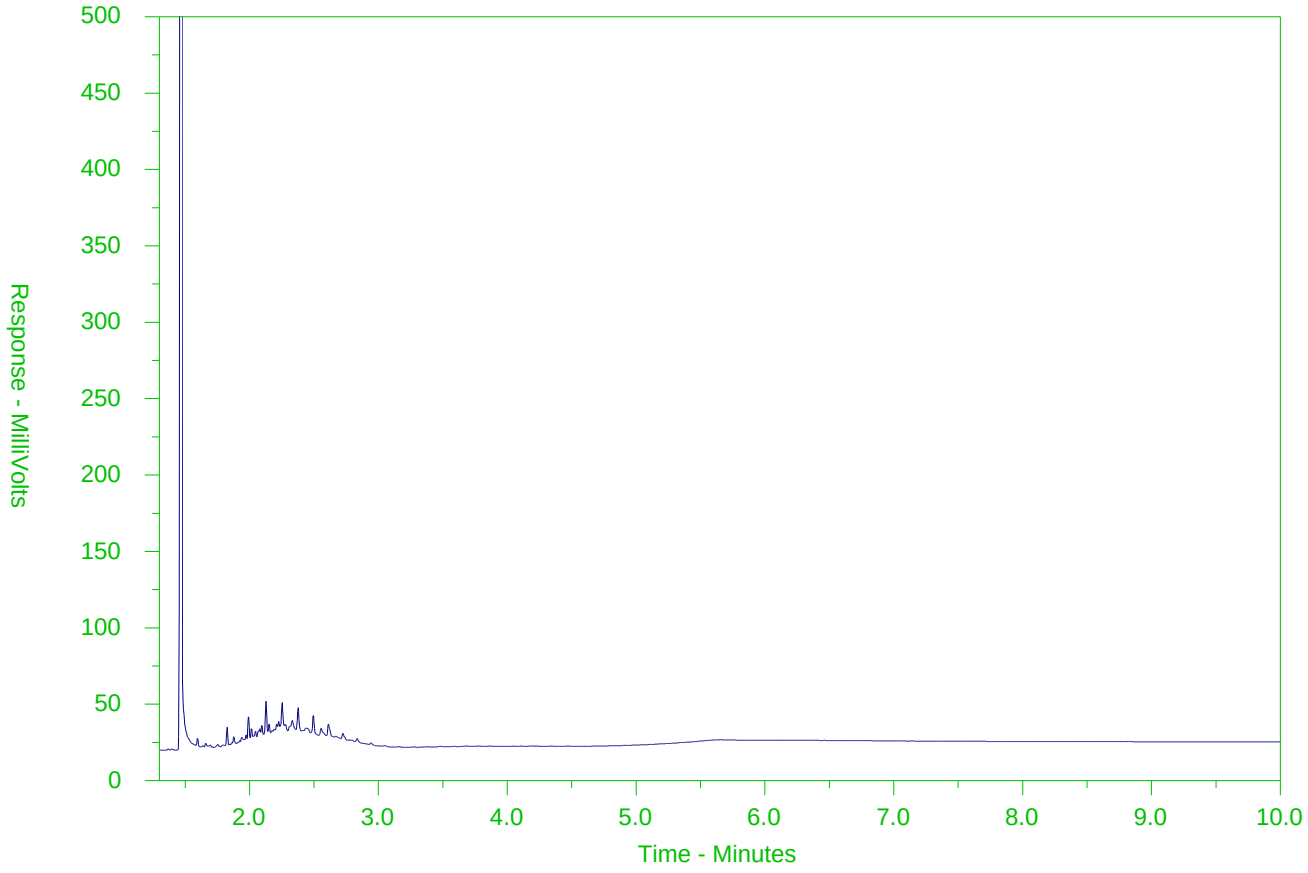
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2631648-5
Client Sample ID: EX21-21-77-D



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

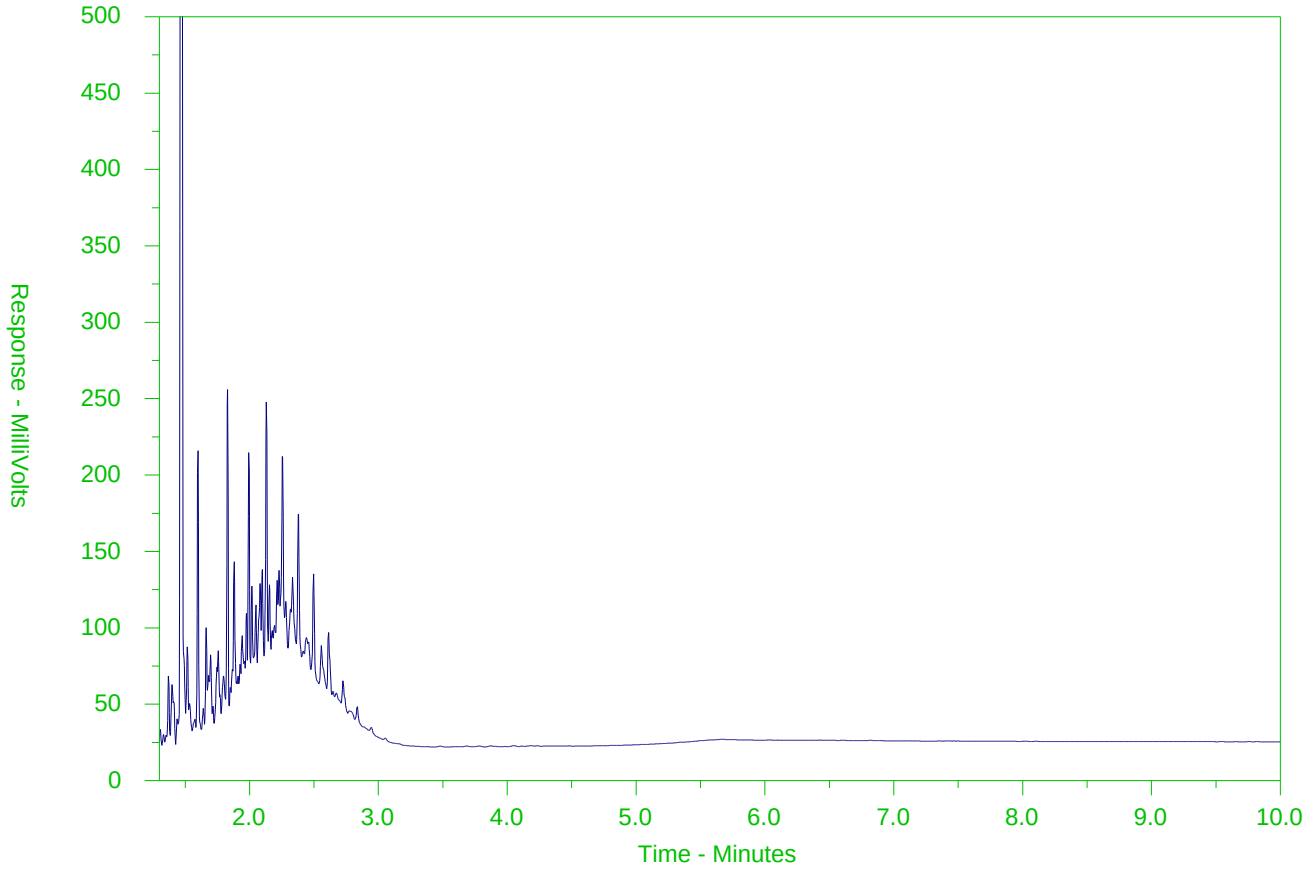
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2631648-7
Client Sample ID: EX21-21-72



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

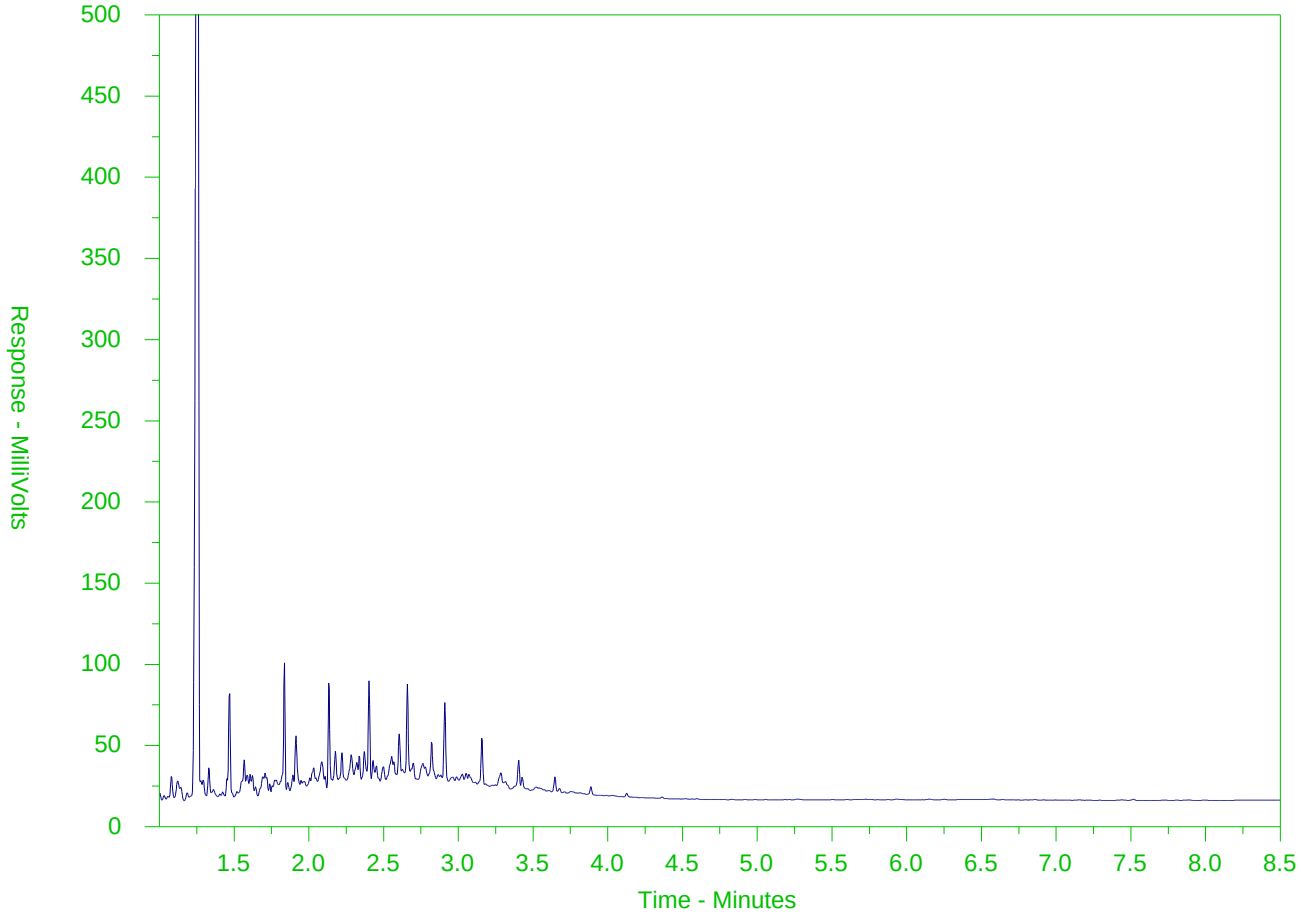
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

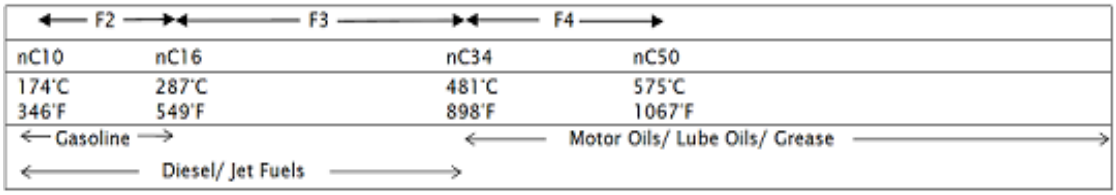
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2631648-8
Client Sample ID: EX21-21-73





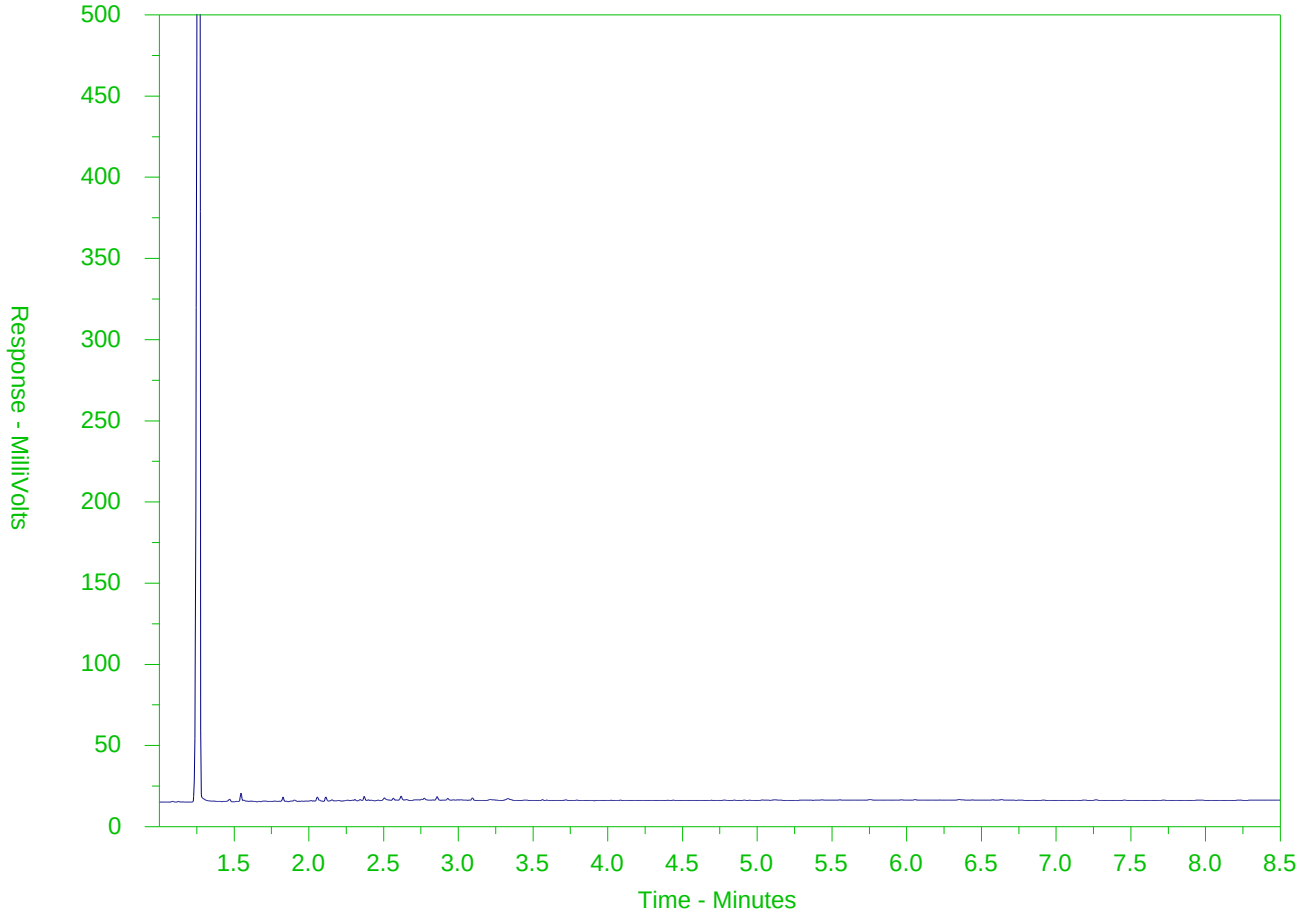
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

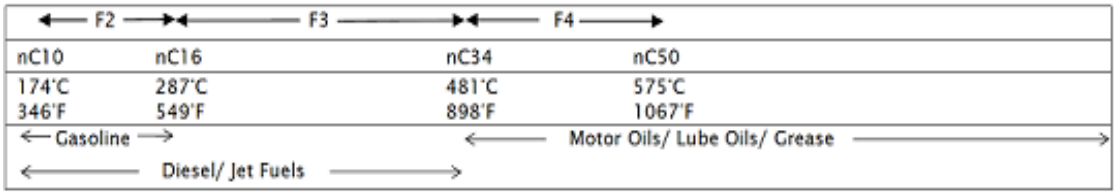
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2631648-9
Client Sample ID: EX21-21-74





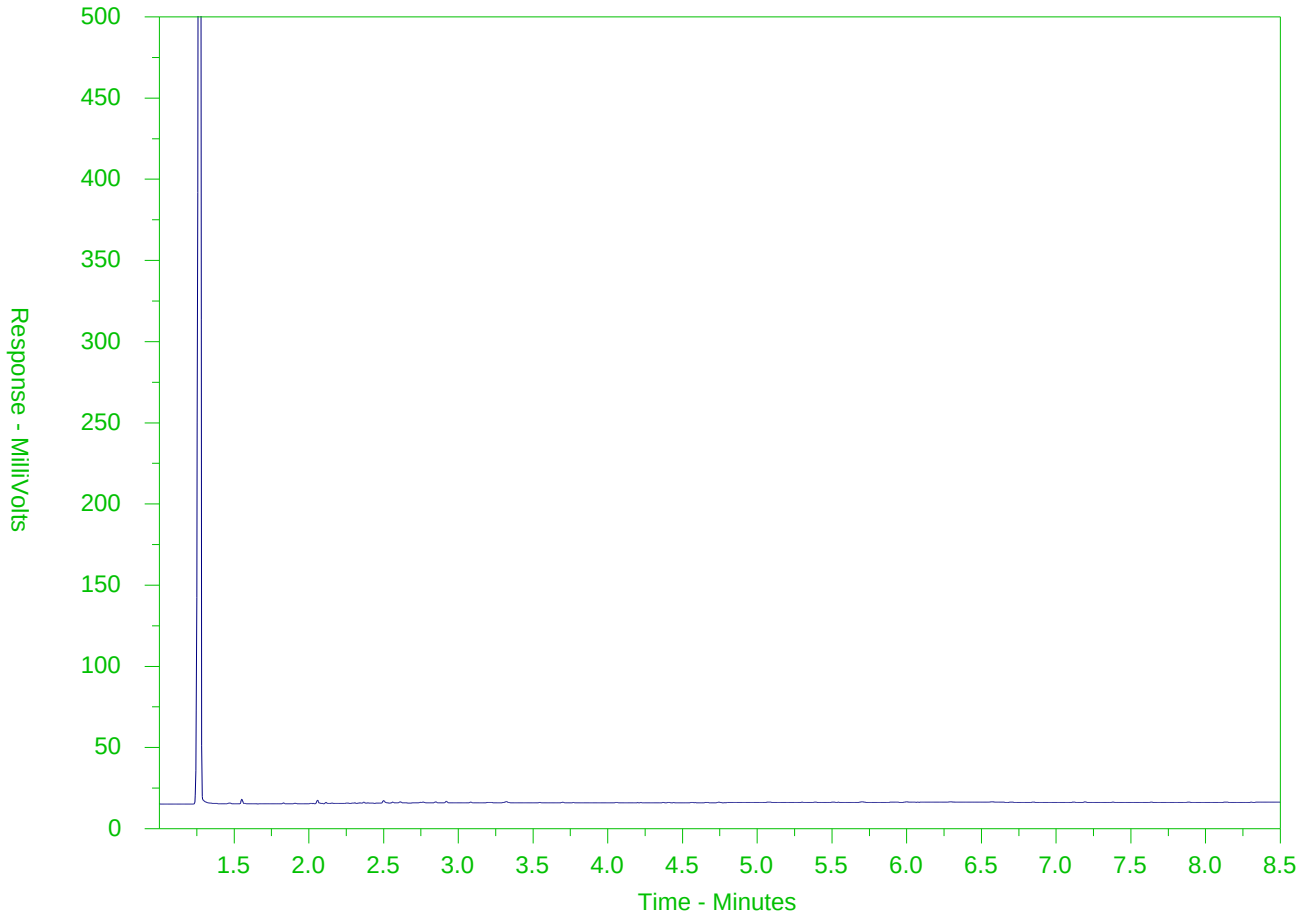
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

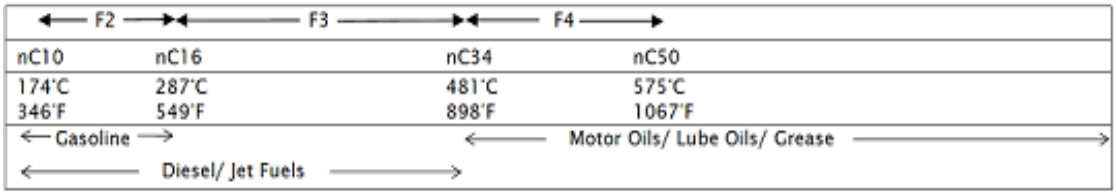
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2631648-10
Client Sample ID: EX21-21-75





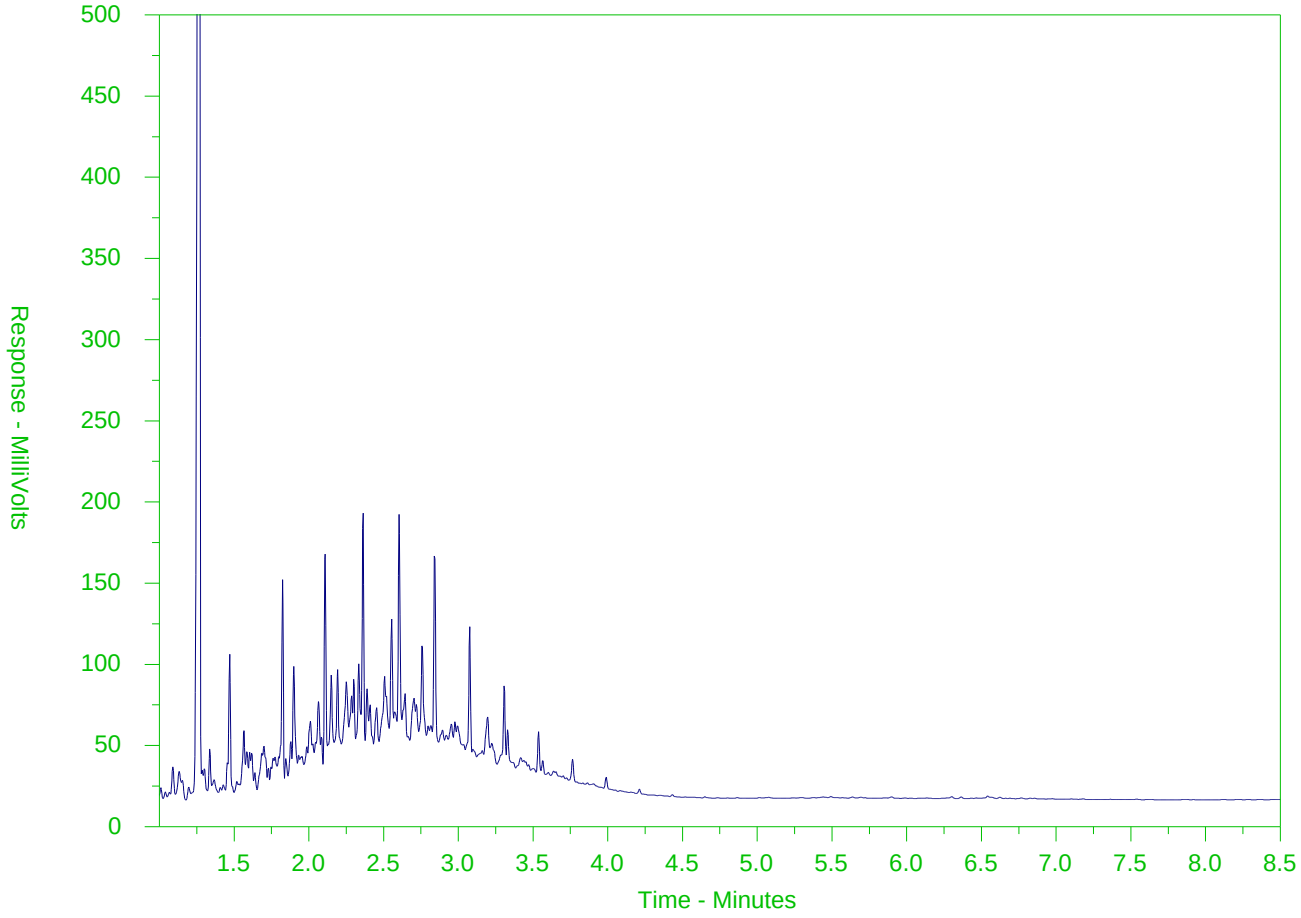
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

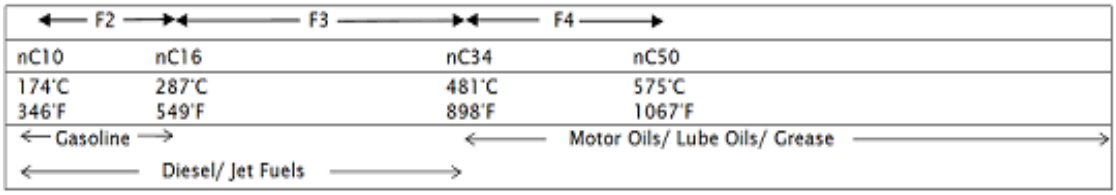
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2631648-11
Client Sample ID: EX21-21-76





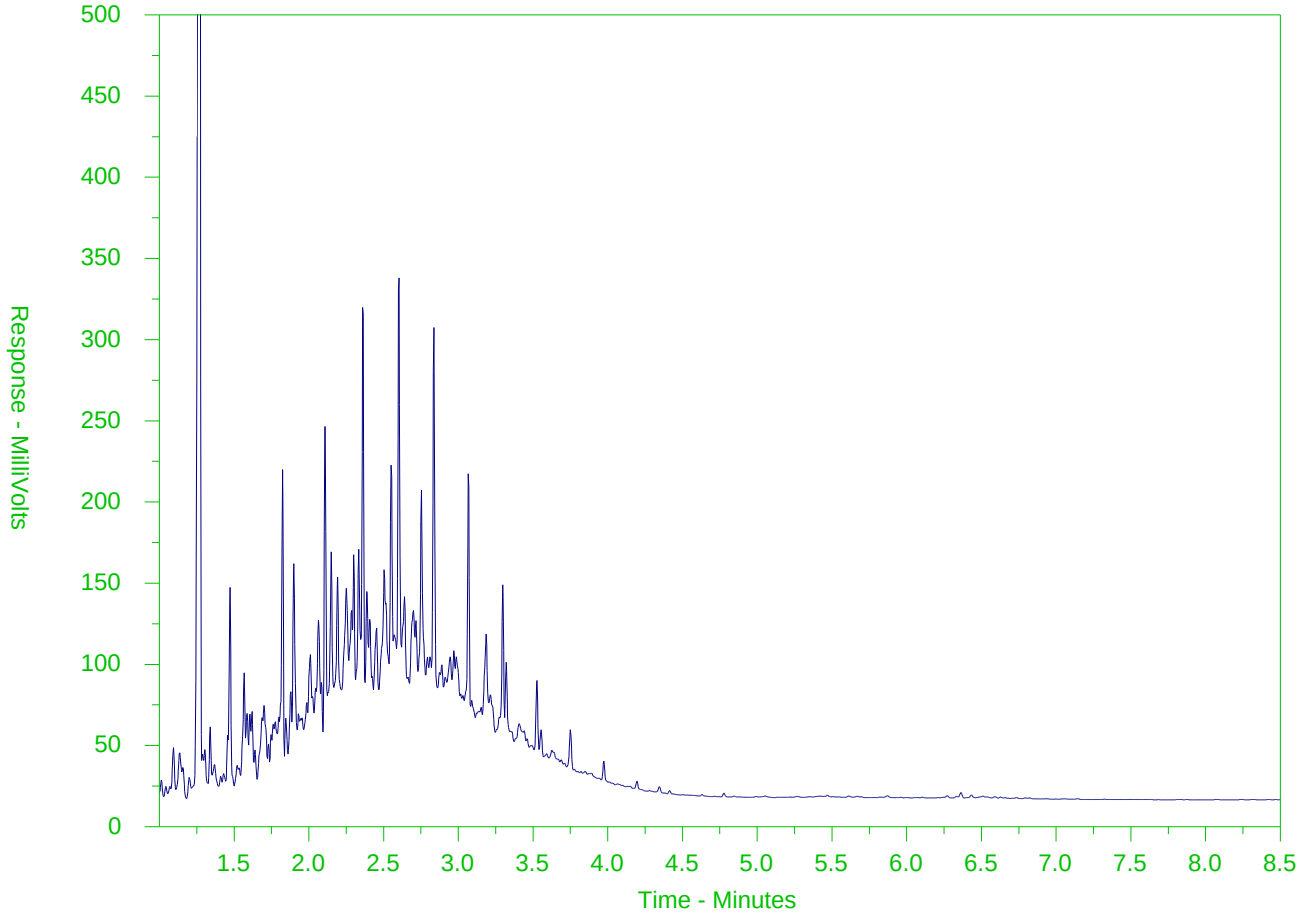
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

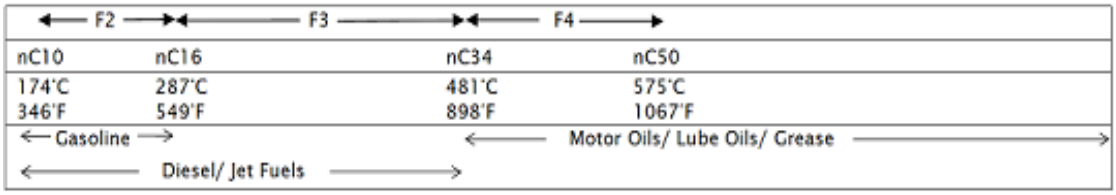
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2631648-12
Client Sample ID: EX21-21-76-D





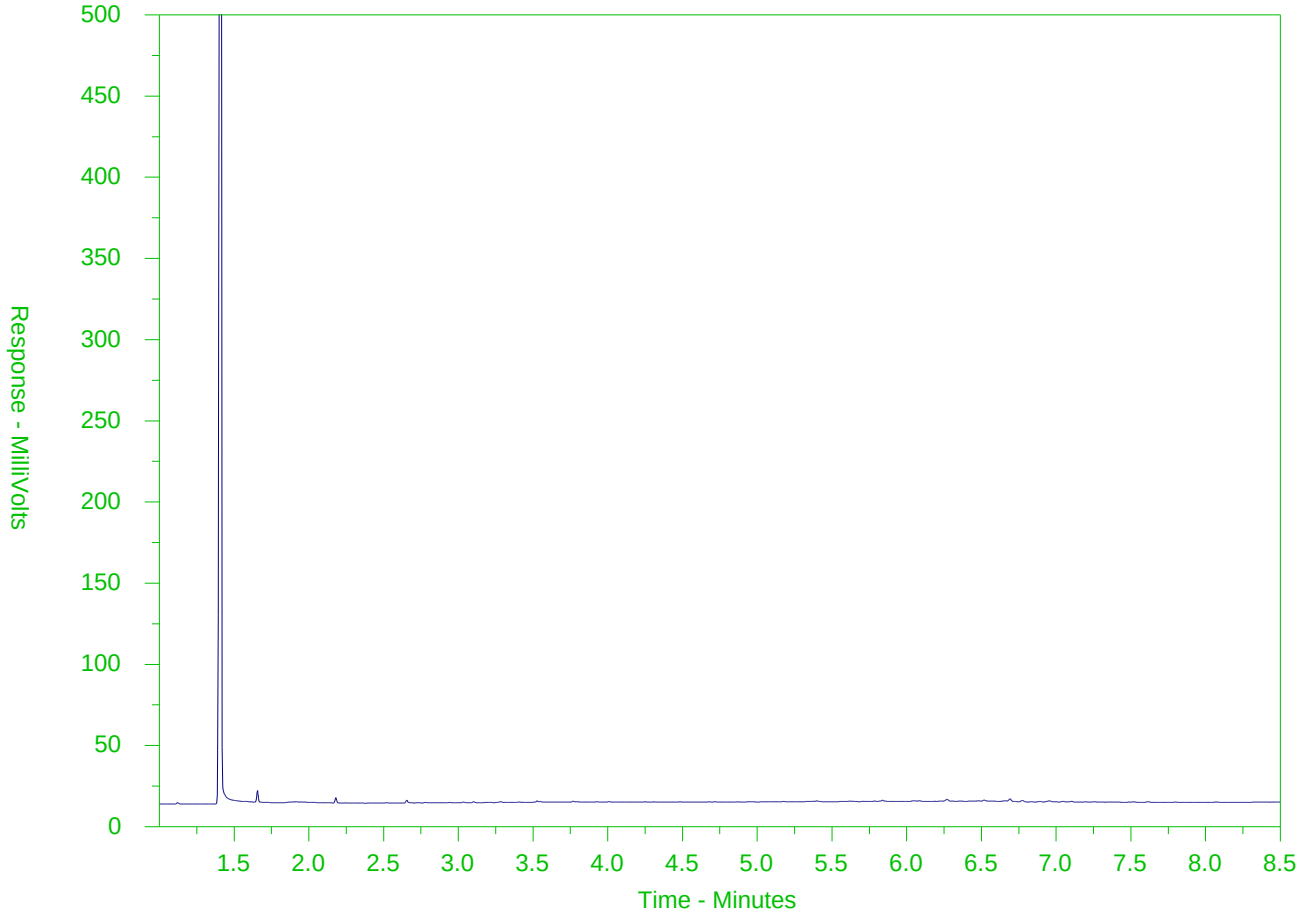
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

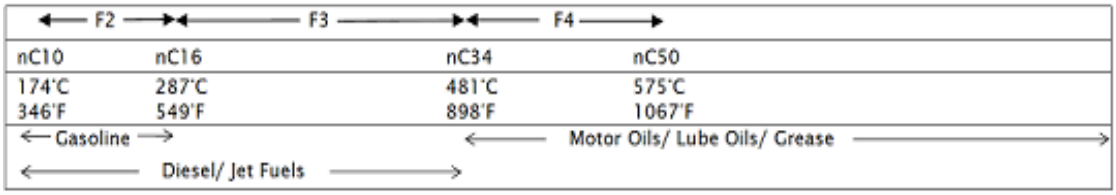
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2631648-14
Client Sample ID: EX21-21-15





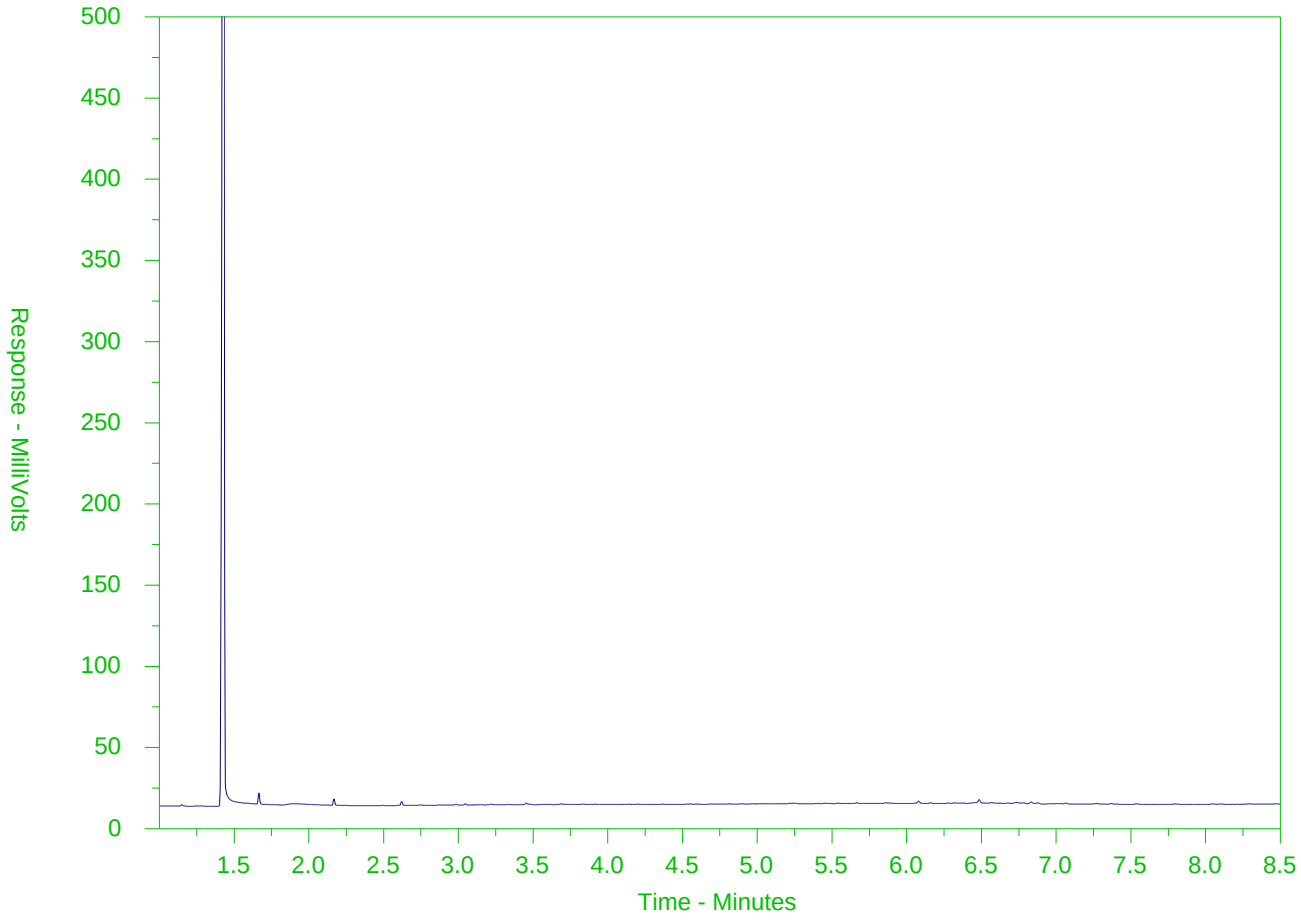
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

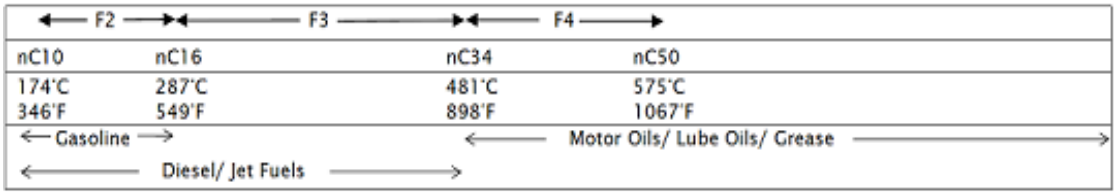
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2631648-15
Client Sample ID: EX21-21-13





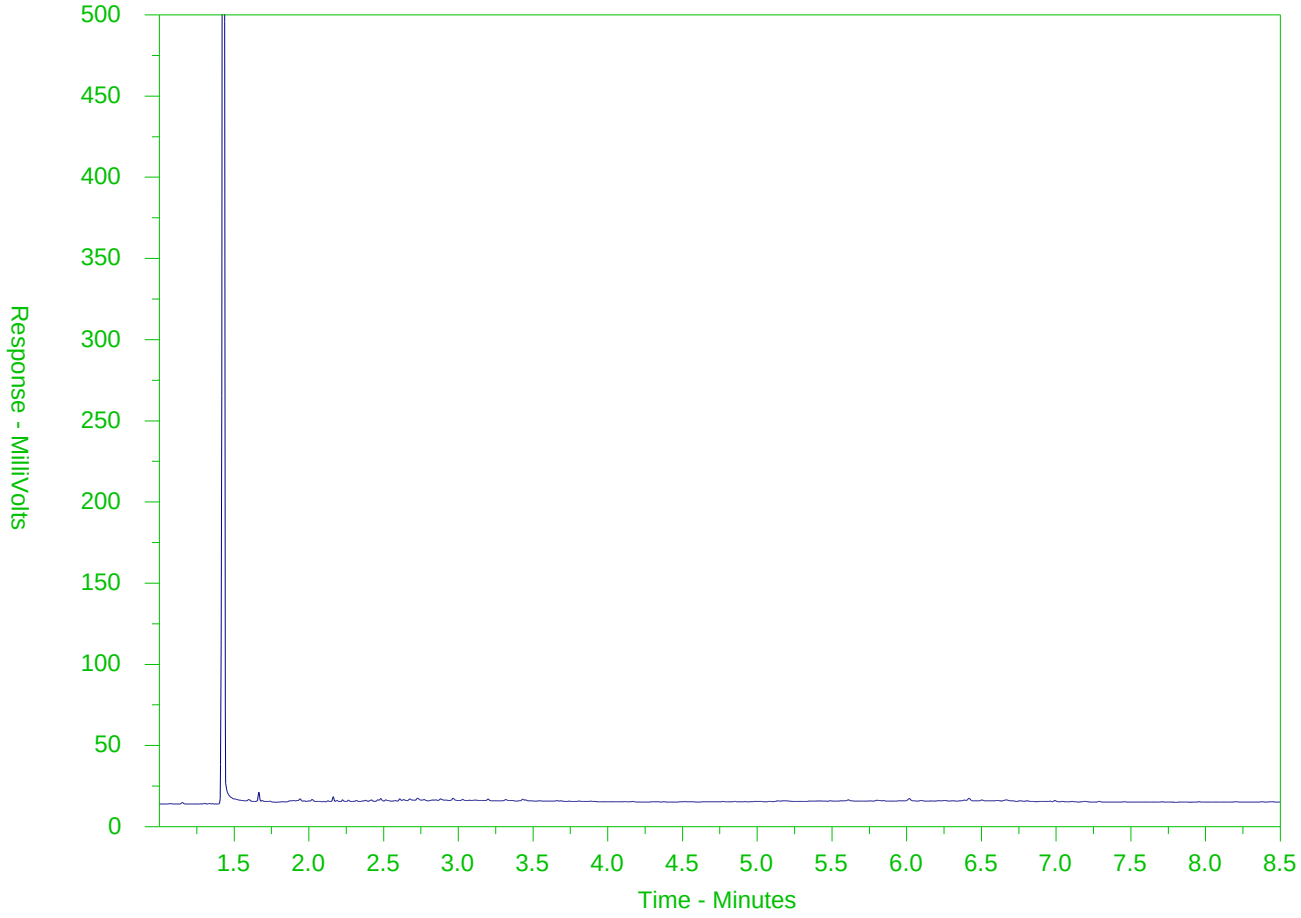
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

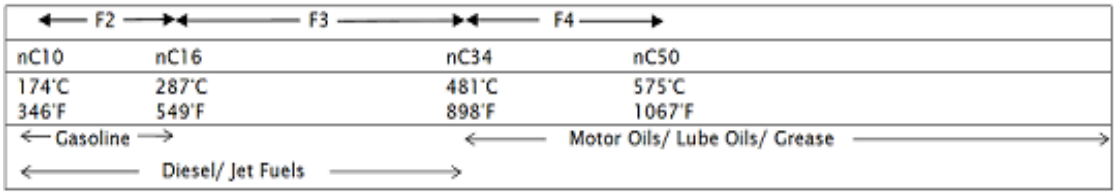
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2631648-16
Client Sample ID: EX21-21-11





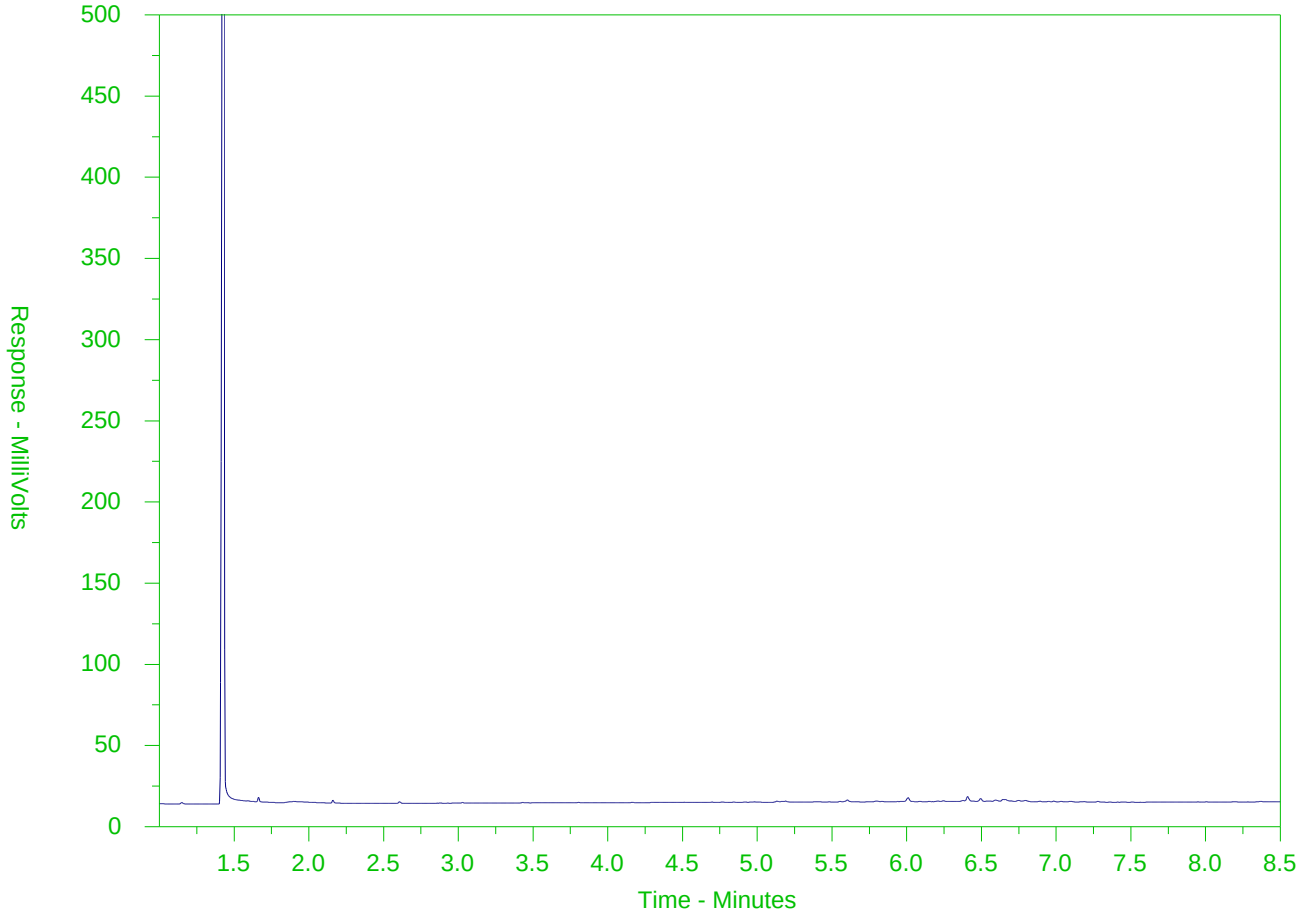
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

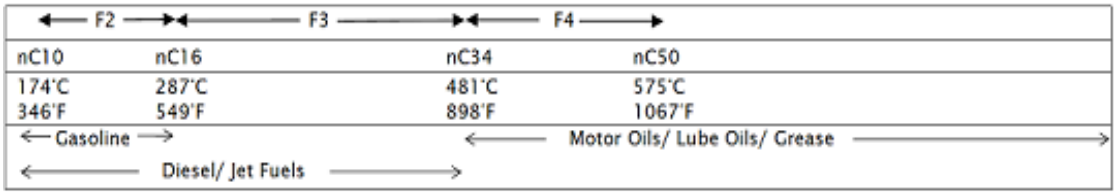
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2631648-17
Client Sample ID: EX21-21-09





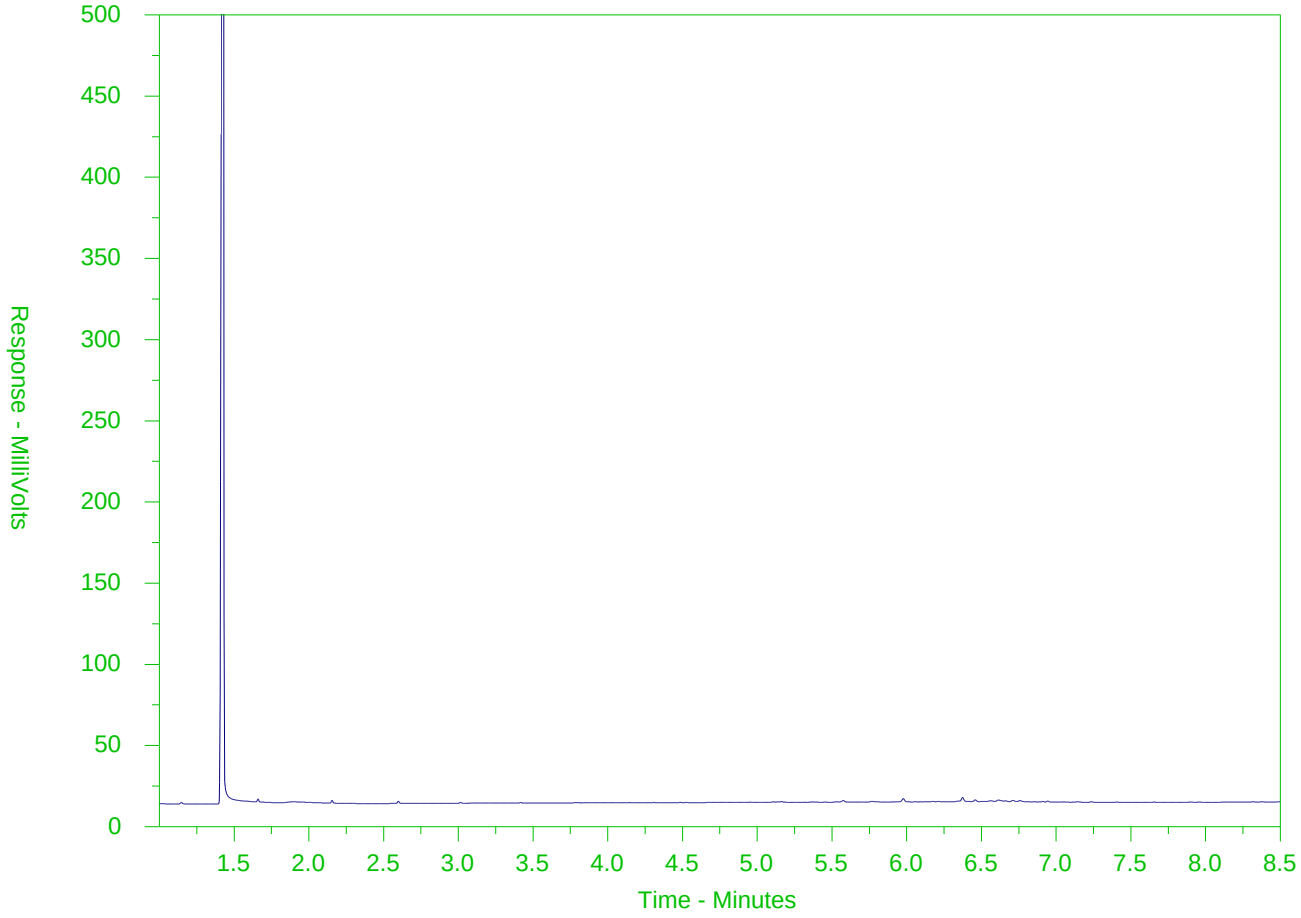
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

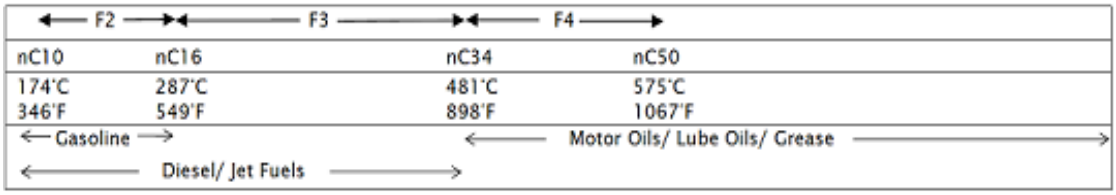
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2631648-18
Client Sample ID: EX21-21-38





The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number:

Page 1 of 2

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)

Quality Control (QC) Report with Report ☑ YES ☐ NO

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: k.lewis@mandalayresources.com

Email 2: sfiddler@golder.com

Email 3: jmusijowski@golder.com

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax:

Email 2:

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☑

Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #: Q80711

Job #:

PO / AFE:

LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: | PO#

Major/Minor Code: | Routing Code:

Requisitioner:

Location:

ALS Lab Work Order # (lab use only): L2631648

ALS Contact: Oliver Gregg

Sampler: JT IBR

Analysis Request

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	Lead	Arsenic	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
1	EX21-21-80	24-Aug-21		Soil	3	✓				
2	EX21-21-79					✓				
3	EX21-21-78					✓				
4	EX21-21-77					✓				
5	EX21-21-77-D					✓				
6	EX21-21-71					✓				
7	EX21-21-72					✓				
8	EX21-21-73					✓				
9	EX21-21-74					✓				
10	EX21-21-75					✓				
11	EX21-21-76					✓				
12	EX21-21-76-D					✓				

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

L2631648-COFC

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human consumption/ use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ | SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ | Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
11.4							

SHIPMENT RELEASE (client use)

Released by:	Date:	Time:
Janelle Trudel	Aug 25/21	1200

INITIAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:
MI	25-Aug-21	15:40

FINAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCT 2018 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number:

Page 2 of 2

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report ☑ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax k.lewis@mandalayresources.com
Email 2 sfiddler@golder.com
Email 3 jmusijowski@golder.com

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax
Email 2

Project Information

ALS Account # / Quote #: Q80711
Job #:
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only):

ALS Contact: Oliver Gregg Sampler: JT / BA

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☑ | Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	Lead	Arsenic	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
13	EX21-21-17	24-Aug-21		Soil	3	✓				
14	EX21-21-15					✓				
15	EX21-21-13					✓				
16	EX21-21-11					✓				
17	EX21-21-09					✓				
18	EX21-21-38					✓				
19	EX21-21-38-D					✓				

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human consumption/ use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			

SHIPMENT RELEASE (client use)

Released by:	Date:	Time:
Janelle Trask / Janelle Trask	Aug 25/21	1200

INITIAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:

FINAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

GOLDER ASSOCIATES LTD
ATTN: Steven Fiddler
16820 107 Ave NW
Edmonton AB T5P 4C3

Date Received: 31-AUG-21
Report Date: 07-SEP-21 10:04 (MT)
Version: FINAL REV. 2

Client Phone: 780-483-3499

Certificate of Analysis

Lab Work Order #: L2633658
Project P.O. #: NOT SUBMITTED
Job Reference: 36896427
C of C Numbers:
Legal Site Desc:

Harman Bhullar
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2633658-1 EX20-21-15							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	01-SEP-21	01-SEP-21	R5574899
Ethylbenzene	<0.015		0.015	mg/kg	01-SEP-21	01-SEP-21	R5574899
Toluene	0.088		0.014	mg/kg	01-SEP-21	01-SEP-21	R5574899
o-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5574899
m+p-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5574899
Surrogate: 1,4-Difluorobenzene	112.6		70-130	%	01-SEP-21	01-SEP-21	R5574899
Surrogate: 4-Bromofluorobenzene	101.2		70-130	%	01-SEP-21	01-SEP-21	R5574899
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	NO			ppm	01-SEP-21	02-SEP-21	R5572974
Prep/Analysis Dates					01-SEP-21	02-SEP-21	R5572974
Surrogate: 2-Bromobenzotrifluoride	93.5		70-130	%	01-SEP-21	02-SEP-21	R5572974
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		03-SEP-21	
F1-BTEX	<10		10	mg/kg		03-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		03-SEP-21	
F3 (C16-C34)	872		50	mg/kg		03-SEP-21	
F4 (C34-C50)	2250		50	mg/kg		03-SEP-21	
F4G-SG (GHH-Silica)	2630		500	mg/kg		03-SEP-21	
Total Hydrocarbons (C6-C50)	3120		50	mg/kg		03-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	85.3		70-130	%	01-SEP-21	01-SEP-21	R5574900
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		02-SEP-21	
Miscellaneous Parameters							
Moisture	4.54		0.25	%		01-SEP-21	R5574080
F4G Prep/Analysis Dates					01-SEP-21	03-SEP-21	R5578358
L2633658-2 EX9-21-128							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	01-SEP-21	01-SEP-21	R5574899
Ethylbenzene	<0.015		0.015	mg/kg	01-SEP-21	01-SEP-21	R5574899
Toluene	<0.014		0.014	mg/kg	01-SEP-21	01-SEP-21	R5574899
o-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5574899
m+p-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5574899
Surrogate: 1,4-Difluorobenzene	96.3		70-130	%	01-SEP-21	01-SEP-21	R5574899
Surrogate: 4-Bromofluorobenzene	122.8		70-130	%	01-SEP-21	01-SEP-21	R5574899
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	01-SEP-21	02-SEP-21	R5572974
Prep/Analysis Dates					01-SEP-21	02-SEP-21	R5572974
Surrogate: 2-Bromobenzotrifluoride	95.7		70-130	%	01-SEP-21	02-SEP-21	R5572974
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-21	
F1-BTEX	<10		10	mg/kg		02-SEP-21	
F2 (C10-C16)	40		25	mg/kg		02-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		02-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		02-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-SEP-21	
F1(C6-C10)							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2633658-2 EX9-21-128							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	102.8		70-130	%	01-SEP-21	01-SEP-21	R5574900
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		02-SEP-21	
Miscellaneous Parameters							
Moisture	13.1		0.25	%		01-SEP-21	R5574080
L2633658-3 EX21-21-70							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	01-SEP-21	01-SEP-21	R5574899
Ethylbenzene	<0.015		0.015	mg/kg	01-SEP-21	01-SEP-21	R5574899
Toluene	0.017		0.014	mg/kg	01-SEP-21	01-SEP-21	R5574899
o-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5574899
m+p-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5574899
Surrogate: 1,4-Difluorobenzene	92.9		70-130	%	01-SEP-21	01-SEP-21	R5574899
Surrogate: 4-Bromofluorobenzene	93.3		70-130	%	01-SEP-21	01-SEP-21	R5574899
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	01-SEP-21	02-SEP-21	R5572974
Prep/Analysis Dates					01-SEP-21	02-SEP-21	R5572974
Surrogate: 2-Bromobenzotrifluoride	95.5		70-130	%	01-SEP-21	02-SEP-21	R5572974
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-21	
F1-BTEX	<10		10	mg/kg		02-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		02-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		02-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		02-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	94.5		70-130	%	01-SEP-21	01-SEP-21	R5574900
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		02-SEP-21	
Miscellaneous Parameters							
Moisture	18.0		0.25	%		01-SEP-21	R5574080
L2633658-4 EX21-21-81							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	01-SEP-21	01-SEP-21	R5574899
Ethylbenzene	<0.015		0.015	mg/kg	01-SEP-21	01-SEP-21	R5574899
Toluene	<0.014		0.014	mg/kg	01-SEP-21	01-SEP-21	R5574899
o-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5574899
m+p-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5574899
Surrogate: 1,4-Difluorobenzene	84.0		70-130	%	01-SEP-21	01-SEP-21	R5574899
Surrogate: 4-Bromofluorobenzene	81.2		70-130	%	01-SEP-21	01-SEP-21	R5574899
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	01-SEP-21	02-SEP-21	R5572974
Prep/Analysis Dates					01-SEP-21	02-SEP-21	R5572974
Surrogate: 2-Bromobenzotrifluoride	91.4		70-130	%	01-SEP-21	02-SEP-21	R5572974
CCME Total Hydrocarbons							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2633658-4 EX21-21-81							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-21	
F1-BTEX	<10		10	mg/kg		02-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		02-SEP-21	
F3 (C16-C34)	64		50	mg/kg		02-SEP-21	
F4 (C34-C50)	50		50	mg/kg		02-SEP-21	
Total Hydrocarbons (C6-C50)	114		50	mg/kg		02-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	82.4		70-130	%	01-SEP-21	01-SEP-21	R5574900
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		02-SEP-21	
Miscellaneous Parameters							
Moisture	6.79		0.25	%		01-SEP-21	R5574080
L2633658-5 EX21-21-84							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	01-SEP-21	01-SEP-21	R5574899
Ethylbenzene	<0.015		0.015	mg/kg	01-SEP-21	01-SEP-21	R5574899
Toluene	<0.014		0.014	mg/kg	01-SEP-21	01-SEP-21	R5574899
o-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5574899
m+p-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5574899
Surrogate: 1,4-Difluorobenzene	94.0		70-130	%	01-SEP-21	01-SEP-21	R5574899
Surrogate: 4-Bromofluorobenzene	106.3		70-130	%	01-SEP-21	01-SEP-21	R5574899
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	01-SEP-21	02-SEP-21	R5572974
Prep/Analysis Dates					01-SEP-21	02-SEP-21	R5572974
Surrogate: 2-Bromobenzotrifluoride	91.4		70-130	%	01-SEP-21	02-SEP-21	R5572974
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-21	
F1-BTEX	<10		10	mg/kg		02-SEP-21	
F2 (C10-C16)	140		25	mg/kg		02-SEP-21	
F3 (C16-C34)	108		50	mg/kg		02-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		02-SEP-21	
Total Hydrocarbons (C6-C50)	248		50	mg/kg		02-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	107.2		70-130	%	01-SEP-21	01-SEP-21	R5574900
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		02-SEP-21	
Miscellaneous Parameters							
Moisture	8.85		0.25	%		01-SEP-21	R5574080
L2633658-6 EX21-21-86							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	01-SEP-21	01-SEP-21	R5574899
Ethylbenzene	<0.015		0.015	mg/kg	01-SEP-21	01-SEP-21	R5574899
Toluene	<0.014		0.014	mg/kg	01-SEP-21	01-SEP-21	R5574899
o-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5574899
m+p-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5574899

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2633658-6 EX21-21-86							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
BTEX and Styrene							
Surrogate: 1,4-Difluorobenzene	80.1		70-130	%	01-SEP-21	01-SEP-21	R5574899
Surrogate: 4-Bromofluorobenzene	92.3		70-130	%	01-SEP-21	01-SEP-21	R5574899
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	01-SEP-21	02-SEP-21	R5572974
Prep/Analysis Dates					01-SEP-21	02-SEP-21	R5572974
Surrogate: 2-Bromobenzotrifluoride	89.9		70-130	%	01-SEP-21	02-SEP-21	R5572974
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-21	
F1-BTEX	<10		10	mg/kg		02-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		02-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		02-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		02-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	86.0		70-130	%	01-SEP-21	01-SEP-21	R5574900
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		02-SEP-21	
Miscellaneous Parameters							
Moisture	8.46		0.25	%		01-SEP-21	R5574080
L2633658-7 EX21-21-87							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	01-SEP-21	01-SEP-21	R5574899
Ethylbenzene	<0.015		0.015	mg/kg	01-SEP-21	01-SEP-21	R5574899
Toluene	<0.014		0.014	mg/kg	01-SEP-21	01-SEP-21	R5574899
o-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5574899
m+p-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5574899
Surrogate: 1,4-Difluorobenzene	89.7		70-130	%	01-SEP-21	01-SEP-21	R5574899
Surrogate: 4-Bromofluorobenzene	92.5		70-130	%	01-SEP-21	01-SEP-21	R5574899
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	01-SEP-21	02-SEP-21	R5572974
Prep/Analysis Dates					01-SEP-21	02-SEP-21	R5572974
Surrogate: 2-Bromobenzotrifluoride	86.6		70-130	%	01-SEP-21	02-SEP-21	R5572974
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-21	
F1-BTEX	<10		10	mg/kg		02-SEP-21	
F2 (C10-C16)	39		25	mg/kg		02-SEP-21	
F3 (C16-C34)	88		50	mg/kg		02-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		02-SEP-21	
Total Hydrocarbons (C6-C50)	127		50	mg/kg		02-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	91.7		70-130	%	01-SEP-21	01-SEP-21	R5574900
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		02-SEP-21	
Miscellaneous Parameters							
Moisture	4.63		0.25	%		01-SEP-21	R5574080
L2633658-8 EX21-21-89							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2633658-8 EX21-21-89							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	01-SEP-21	01-SEP-21	R5574899
Ethylbenzene	<0.015		0.015	mg/kg	01-SEP-21	01-SEP-21	R5574899
Toluene	<0.014		0.014	mg/kg	01-SEP-21	01-SEP-21	R5574899
o-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5574899
m+p-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5574899
Surrogate: 1,4-Difluorobenzene	99.6		70-130	%	01-SEP-21	01-SEP-21	R5574899
Surrogate: 4-Bromofluorobenzene	105.4		70-130	%	01-SEP-21	01-SEP-21	R5574899
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	01-SEP-21	02-SEP-21	R5572974
Prep/Analysis Dates					01-SEP-21	02-SEP-21	R5572974
Surrogate: 2-Bromobenzotrifluoride	86.8		70-130	%	01-SEP-21	02-SEP-21	R5572974
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-21	
F1-BTEX	<10		10	mg/kg		02-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		02-SEP-21	
F3 (C16-C34)	211		50	mg/kg		02-SEP-21	
F4 (C34-C50)	57		50	mg/kg		02-SEP-21	
Total Hydrocarbons (C6-C50)	268		50	mg/kg		02-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	96.6		70-130	%	01-SEP-21	01-SEP-21	R5574900
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		02-SEP-21	
Miscellaneous Parameters							
Moisture	6.67		0.25	%		01-SEP-21	R5574080
L2633658-9 EX21-21-91							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	01-SEP-21	01-SEP-21	R5574899
Ethylbenzene	<0.015		0.015	mg/kg	01-SEP-21	01-SEP-21	R5574899
Toluene	<0.014		0.014	mg/kg	01-SEP-21	01-SEP-21	R5574899
o-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5574899
m+p-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5574899
Surrogate: 1,4-Difluorobenzene	79.6		70-130	%	01-SEP-21	01-SEP-21	R5574899
Surrogate: 4-Bromofluorobenzene	94.2		70-130	%	01-SEP-21	01-SEP-21	R5574899
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	01-SEP-21	02-SEP-21	R5572974
Prep/Analysis Dates					01-SEP-21	02-SEP-21	R5572974
Surrogate: 2-Bromobenzotrifluoride	91.9		70-130	%	01-SEP-21	02-SEP-21	R5572974
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-21	
F1-BTEX	<10		10	mg/kg		02-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		02-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		02-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		02-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	108.0		70-130	%	01-SEP-21	01-SEP-21	R5574900
Sum of Xylene Isomer Concentrations							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2633658-9 EX21-21-91							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		02-SEP-21	
Miscellaneous Parameters							
Moisture	10.9		0.25	%		01-SEP-21	R5574080
L2633658-10 EX21-21-93							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	01-SEP-21	01-SEP-21	R5574899
Ethylbenzene	<0.015		0.015	mg/kg	01-SEP-21	01-SEP-21	R5574899
Toluene	0.018		0.014	mg/kg	01-SEP-21	01-SEP-21	R5574899
o-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5574899
m+p-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5574899
Surrogate: 1,4-Difluorobenzene	101.4		70-130	%	01-SEP-21	01-SEP-21	R5574899
Surrogate: 4-Bromofluorobenzene	99.5		70-130	%	01-SEP-21	01-SEP-21	R5574899
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	01-SEP-21	02-SEP-21	R5572974
Prep/Analysis Dates					01-SEP-21	02-SEP-21	R5572974
Surrogate: 2-Bromobenzotrifluoride	86.6		70-130	%	01-SEP-21	02-SEP-21	R5572974
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-21	
F1-BTEX	<10		10	mg/kg		02-SEP-21	
F2 (C10-C16)	37		25	mg/kg		02-SEP-21	
F3 (C16-C34)	157		50	mg/kg		02-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		02-SEP-21	
Total Hydrocarbons (C6-C50)	194		50	mg/kg		02-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	97.2		70-130	%	01-SEP-21	01-SEP-21	R5574900
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		02-SEP-21	
Miscellaneous Parameters							
Moisture	6.97		0.25	%		01-SEP-21	R5574080
L2633658-11 EX21-21-95							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	01-SEP-21	01-SEP-21	R5574899
Ethylbenzene	<0.015		0.015	mg/kg	01-SEP-21	01-SEP-21	R5574899
Toluene	0.016		0.014	mg/kg	01-SEP-21	01-SEP-21	R5574899
o-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5574899
m+p-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5574899
Surrogate: 1,4-Difluorobenzene	91.2		70-130	%	01-SEP-21	01-SEP-21	R5574899
Surrogate: 4-Bromofluorobenzene	92.1		70-130	%	01-SEP-21	01-SEP-21	R5574899
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	01-SEP-21	02-SEP-21	R5572974
Prep/Analysis Dates					01-SEP-21	02-SEP-21	R5572974
Surrogate: 2-Bromobenzotrifluoride	76.4		70-130	%	01-SEP-21	02-SEP-21	R5572974
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-21	
F1-BTEX	<10		10	mg/kg		02-SEP-21	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2633658-11 EX21-21-95							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
CCME Total Hydrocarbons							
F2 (C10-C16)	<25		25	mg/kg		02-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		02-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		02-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	77.9		70-130	%	01-SEP-21	01-SEP-21	R5574900
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		02-SEP-21	
Miscellaneous Parameters							
Moisture	11.6		0.25	%		01-SEP-21	R5574080
L2633658-12 EX21-21-98							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	01-SEP-21	01-SEP-21	R5574899
Ethylbenzene	<0.015		0.015	mg/kg	01-SEP-21	01-SEP-21	R5574899
Toluene	<0.014		0.014	mg/kg	01-SEP-21	01-SEP-21	R5574899
o-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5574899
m+p-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5574899
Surrogate: 1,4-Difluorobenzene	90.5		70-130	%	01-SEP-21	01-SEP-21	R5574899
Surrogate: 4-Bromofluorobenzene	93.6		70-130	%	01-SEP-21	01-SEP-21	R5574899
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	01-SEP-21	02-SEP-21	R5572974
Prep/Analysis Dates					01-SEP-21	02-SEP-21	R5572974
Surrogate: 2-Bromobenzotrifluoride	84.2		70-130	%	01-SEP-21	02-SEP-21	R5572974
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-21	
F1-BTEX	<10		10	mg/kg		02-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		02-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		02-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		02-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	88.6		70-130	%	01-SEP-21	01-SEP-21	R5574900
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		02-SEP-21	
Miscellaneous Parameters							
Moisture	7.79		0.25	%		01-SEP-21	R5574080
L2633658-13 EX21-21-102							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	01-SEP-21	01-SEP-21	R5574899
Ethylbenzene	<0.015		0.015	mg/kg	01-SEP-21	01-SEP-21	R5574899
Toluene	<0.014		0.014	mg/kg	01-SEP-21	01-SEP-21	R5574899
o-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5574899
m+p-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5574899
Surrogate: 1,4-Difluorobenzene	96.1		70-130	%	01-SEP-21	01-SEP-21	R5574899
Surrogate: 4-Bromofluorobenzene	91.9		70-130	%	01-SEP-21	01-SEP-21	R5574899

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2633658-13 EX21-21-102							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	01-SEP-21	02-SEP-21	R5572974
Prep/Analysis Dates					01-SEP-21	02-SEP-21	R5572974
Surrogate: 2-Bromobenzotrifluoride	83.6		70-130	%	01-SEP-21	02-SEP-21	R5572974
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-21	
F1-BTEX	<10		10	mg/kg		02-SEP-21	
F2 (C10-C16)	59		25	mg/kg		02-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		02-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		02-SEP-21	
Total Hydrocarbons (C6-C50)	59		50	mg/kg		02-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	81.4		70-130	%	01-SEP-21	01-SEP-21	R5574900
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		02-SEP-21	
Miscellaneous Parameters							
Moisture	9.14		0.25	%		01-SEP-21	R5574080
L2633658-14 EX21-21-103							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	01-SEP-21	01-SEP-21	R5574899
Ethylbenzene	<0.015		0.015	mg/kg	01-SEP-21	01-SEP-21	R5574899
Toluene	<0.014		0.014	mg/kg	01-SEP-21	01-SEP-21	R5574899
o-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5574899
m+p-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5574899
Surrogate: 1,4-Difluorobenzene	85.5		70-130	%	01-SEP-21	01-SEP-21	R5574899
Surrogate: 4-Bromofluorobenzene	82.1		70-130	%	01-SEP-21	01-SEP-21	R5574899
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	01-SEP-21	02-SEP-21	R5572974
Prep/Analysis Dates					01-SEP-21	02-SEP-21	R5572974
Surrogate: 2-Bromobenzotrifluoride	80.1		70-130	%	01-SEP-21	02-SEP-21	R5572974
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-21	
F1-BTEX	<10		10	mg/kg		02-SEP-21	
F2 (C10-C16)	35		25	mg/kg		02-SEP-21	
F3 (C16-C34)	58		50	mg/kg		02-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		02-SEP-21	
Total Hydrocarbons (C6-C50)	93		50	mg/kg		02-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	86.1		70-130	%	01-SEP-21	01-SEP-21	R5574900
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		02-SEP-21	
Miscellaneous Parameters							
Moisture	7.21		0.25	%		01-SEP-21	R5574080
L2633658-15 EX21-21-105							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	01-SEP-21	01-SEP-21	R5574899

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2633658-15 EX21-21-105							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
BTEX and Styrene							
Ethylbenzene	<0.015		0.015	mg/kg	01-SEP-21	01-SEP-21	R5574899
Toluene	0.038		0.014	mg/kg	01-SEP-21	01-SEP-21	R5574899
o-Xylene	0.089		0.050	mg/kg	01-SEP-21	01-SEP-21	R5574899
m+p-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5574899
Surrogate: 1,4-Difluorobenzene	80.8		70-130	%	01-SEP-21	01-SEP-21	R5574899
Surrogate: 4-Bromofluorobenzene	125.9		70-130	%	01-SEP-21	01-SEP-21	R5574899
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	01-SEP-21	02-SEP-21	R5572974
Prep/Analysis Dates					01-SEP-21	02-SEP-21	R5572974
Surrogate: 2-Bromobenzotrifluoride	82.5		70-130	%	01-SEP-21	02-SEP-21	R5572974
CCME Total Hydrocarbons							
F1 (C6-C10)	61		10	mg/kg		02-SEP-21	
F1-BTEX	61		10	mg/kg		02-SEP-21	
F2 (C10-C16)	89		25	mg/kg		02-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		02-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		02-SEP-21	
Total Hydrocarbons (C6-C50)	150		50	mg/kg		02-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	N/A	SMI	-	%	01-SEP-21	01-SEP-21	R5574900
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	0.089		0.071	mg/kg		02-SEP-21	
Miscellaneous Parameters							
Moisture	10.1		0.25	%		01-SEP-21	R5574080
L2633658-16 EX21-21-109							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	01-SEP-21	01-SEP-21	R5574899
Ethylbenzene	<0.015		0.015	mg/kg	01-SEP-21	01-SEP-21	R5574899
Toluene	0.203		0.014	mg/kg	01-SEP-21	01-SEP-21	R5574899
o-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5574899
m+p-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5574899
Surrogate: 1,4-Difluorobenzene	107.7		70-130	%	01-SEP-21	01-SEP-21	R5574899
Surrogate: 4-Bromofluorobenzene	120.6		70-130	%	01-SEP-21	01-SEP-21	R5574899
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	01-SEP-21	02-SEP-21	R5572974
Prep/Analysis Dates					01-SEP-21	02-SEP-21	R5572974
Surrogate: 2-Bromobenzotrifluoride	83.9		70-130	%	01-SEP-21	02-SEP-21	R5572974
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-21	
F1-BTEX	<10		10	mg/kg		02-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		02-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		02-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		02-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	80.4		70-130	%	01-SEP-21	01-SEP-21	R5574900
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		02-SEP-21	
Miscellaneous Parameters							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2633658-16 EX21-21-109							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
Moisture	8.03		0.25	%		01-SEP-21	R5574080
L2633658-17 EX21-21-110							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	01-SEP-21	01-SEP-21	R5574899
Ethylbenzene	<0.015		0.015	mg/kg	01-SEP-21	01-SEP-21	R5574899
Toluene	<0.014		0.014	mg/kg	01-SEP-21	01-SEP-21	R5574899
o-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5574899
m+p-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5574899
Surrogate: 1,4-Difluorobenzene	104.4		70-130	%	01-SEP-21	01-SEP-21	R5574899
Surrogate: 4-Bromofluorobenzene	104.2		70-130	%	01-SEP-21	01-SEP-21	R5574899
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	01-SEP-21	02-SEP-21	R5572974
Prep/Analysis Dates					01-SEP-21	02-SEP-21	R5572974
Surrogate: 2-Bromobenzotrifluoride	82.5		70-130	%	01-SEP-21	02-SEP-21	R5572974
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-21	
F1-BTEX	<10		10	mg/kg		02-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		02-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		02-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		02-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	84.9		70-130	%	01-SEP-21	01-SEP-21	R5574900
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		02-SEP-21	
Miscellaneous Parameters							
Moisture	16.8		0.25	%		01-SEP-21	R5574080
L2633658-18 EX21-21-111							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	01-SEP-21	01-SEP-21	R5574899
Ethylbenzene	<0.015		0.015	mg/kg	01-SEP-21	01-SEP-21	R5574899
Toluene	0.016		0.014	mg/kg	01-SEP-21	01-SEP-21	R5574899
o-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5574899
m+p-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5574899
Surrogate: 1,4-Difluorobenzene	94.1		70-130	%	01-SEP-21	01-SEP-21	R5574899
Surrogate: 4-Bromofluorobenzene	97.3		70-130	%	01-SEP-21	01-SEP-21	R5574899
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	01-SEP-21	02-SEP-21	R5572974
Prep/Analysis Dates					01-SEP-21	02-SEP-21	R5572974
Surrogate: 2-Bromobenzotrifluoride	84.5		70-130	%	01-SEP-21	02-SEP-21	R5572974
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-21	
F1-BTEX	<10		10	mg/kg		02-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		02-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		02-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		02-SEP-21	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2633658-18 EX21-21-111							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
CCME Total Hydrocarbons							
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	86.5		70-130	%	01-SEP-21	01-SEP-21	R5574900
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		02-SEP-21	
Miscellaneous Parameters							
Moisture	17.9		0.25	%		01-SEP-21	R5574080
L2633658-19 EX21-21-112							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	01-SEP-21	01-SEP-21	R5574899
Ethylbenzene	<0.015		0.015	mg/kg	01-SEP-21	01-SEP-21	R5574899
Toluene	<0.014		0.014	mg/kg	01-SEP-21	01-SEP-21	R5574899
o-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5574899
m+p-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5574899
Surrogate: 1,4-Difluorobenzene	82.8		70-130	%	01-SEP-21	01-SEP-21	R5574899
Surrogate: 4-Bromofluorobenzene	89.6		70-130	%	01-SEP-21	01-SEP-21	R5574899
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	01-SEP-21	02-SEP-21	R5572974
Prep/Analysis Dates					01-SEP-21	02-SEP-21	R5572974
Surrogate: 2-Bromobenzotrifluoride	77.9		70-130	%	01-SEP-21	02-SEP-21	R5572974
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-21	
F1-BTEX	<10		10	mg/kg		02-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		02-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		02-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		02-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	84.1		70-130	%	01-SEP-21	01-SEP-21	R5574900
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		02-SEP-21	
Miscellaneous Parameters							
Moisture	10.8		0.25	%		01-SEP-21	R5574080
L2633658-20 EX21-21-113							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	01-SEP-21	01-SEP-21	R5574899
Ethylbenzene	<0.015		0.015	mg/kg	01-SEP-21	01-SEP-21	R5574899
Toluene	<0.014		0.014	mg/kg	01-SEP-21	01-SEP-21	R5574899
o-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5574899
m+p-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5574899
Surrogate: 1,4-Difluorobenzene	83.0		70-130	%	01-SEP-21	01-SEP-21	R5574899
Surrogate: 4-Bromofluorobenzene	82.8		70-130	%	01-SEP-21	01-SEP-21	R5574899
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	01-SEP-21	02-SEP-21	R5572974
Prep/Analysis Dates					01-SEP-21	02-SEP-21	R5572974

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2633658-20 EX21-21-113							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
CCME F2-4 Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	83.1		70-130	%	01-SEP-21	02-SEP-21	R5572974
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-21	
F1-BTEX	<10		10	mg/kg		02-SEP-21	
F2 (C10-C16)	54		25	mg/kg		02-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		02-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		02-SEP-21	
Total Hydrocarbons (C6-C50)	54		50	mg/kg		02-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	95.0		70-130	%	01-SEP-21	01-SEP-21	R5574900
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		02-SEP-21	
Miscellaneous Parameters							
Moisture	9.16		0.25	%		01-SEP-21	R5574080
L2633658-21 EX21-21-114							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	01-SEP-21	01-SEP-21	R5575542
Ethylbenzene	<0.015		0.015	mg/kg	01-SEP-21	01-SEP-21	R5575542
Toluene	<0.014		0.014	mg/kg	01-SEP-21	01-SEP-21	R5575542
o-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5575542
m+p-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5575542
Surrogate: 1,4-Difluorobenzene	90.1		70-130	%	01-SEP-21	01-SEP-21	R5575542
Surrogate: 4-Bromofluorobenzene	81.2		70-130	%	01-SEP-21	01-SEP-21	R5575542
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	01-SEP-21	02-SEP-21	R5572974
Prep/Analysis Dates					01-SEP-21	02-SEP-21	R5572974
Surrogate: 2-Bromobenzotrifluoride	100.1		70-130	%	01-SEP-21	02-SEP-21	R5572974
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-21	
F1-BTEX	<10		10	mg/kg		02-SEP-21	
F2 (C10-C16)	61		25	mg/kg		02-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		02-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		02-SEP-21	
Total Hydrocarbons (C6-C50)	61		50	mg/kg		02-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	108.5		70-130	%	01-SEP-21	01-SEP-21	R5575557
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		02-SEP-21	
Miscellaneous Parameters							
Moisture	9.33		0.25	%		02-SEP-21	R5574917
L2633658-22 EX21-21-64							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	01-SEP-21	01-SEP-21	R5575542
Ethylbenzene	<0.015		0.015	mg/kg	01-SEP-21	01-SEP-21	R5575542
Toluene	<0.014		0.014	mg/kg	01-SEP-21	01-SEP-21	R5575542

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2633658-22 EX21-21-64							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
BTEX and Styrene							
o-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5575542
m+p-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5575542
Surrogate: 1,4-Difluorobenzene	79.8		70-130	%	01-SEP-21	01-SEP-21	R5575542
Surrogate: 4-Bromofluorobenzene	73.2		70-130	%	01-SEP-21	01-SEP-21	R5575542
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	01-SEP-21	02-SEP-21	R5572974
Prep/Analysis Dates					01-SEP-21	02-SEP-21	R5572974
Surrogate: 2-Bromobenzotrifluoride	98.6		70-130	%	01-SEP-21	02-SEP-21	R5572974
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-21	
F1-BTEX	<10		10	mg/kg		02-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		02-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		02-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		02-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	107.4		70-130	%	01-SEP-21	01-SEP-21	R5575557
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		02-SEP-21	
Miscellaneous Parameters							
Moisture	11.7		0.25	%		02-SEP-21	R5574917
L2633658-23 EX21-21-115							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	01-SEP-21	01-SEP-21	R5575542
Ethylbenzene	0.027		0.015	mg/kg	01-SEP-21	01-SEP-21	R5575542
Toluene	<0.014		0.014	mg/kg	01-SEP-21	01-SEP-21	R5575542
o-Xylene	0.060		0.050	mg/kg	01-SEP-21	01-SEP-21	R5575542
m+p-Xylene	0.112		0.050	mg/kg	01-SEP-21	01-SEP-21	R5575542
Surrogate: 1,4-Difluorobenzene	86.6		70-130	%	01-SEP-21	01-SEP-21	R5575542
Surrogate: 4-Bromofluorobenzene	83.8		70-130	%	01-SEP-21	01-SEP-21	R5575542
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	01-SEP-21	02-SEP-21	R5572974
Prep/Analysis Dates					01-SEP-21	02-SEP-21	R5572974
Surrogate: 2-Bromobenzotrifluoride	100.3		70-130	%	01-SEP-21	02-SEP-21	R5572974
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-21	
F1-BTEX	<10		10	mg/kg		02-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		02-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		02-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		02-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	98.1		70-130	%	01-SEP-21	01-SEP-21	R5575557
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	0.172		0.071	mg/kg		02-SEP-21	
Miscellaneous Parameters							
Moisture	8.02		0.25	%		02-SEP-21	R5574917

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2633658-24 EX21-21-116							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	01-SEP-21	01-SEP-21	R5575542
Ethylbenzene	<0.015		0.015	mg/kg	01-SEP-21	01-SEP-21	R5575542
Toluene	<0.014		0.014	mg/kg	01-SEP-21	01-SEP-21	R5575542
o-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5575542
m+p-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5575542
Surrogate: 1,4-Difluorobenzene	90.4		70-130	%	01-SEP-21	01-SEP-21	R5575542
Surrogate: 4-Bromofluorobenzene	76.9		70-130	%	01-SEP-21	01-SEP-21	R5575542
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	01-SEP-21	02-SEP-21	R5572974
Prep/Analysis Dates					01-SEP-21	02-SEP-21	R5572974
Surrogate: 2-Bromobenzotrifluoride	103.1		70-130	%	01-SEP-21	02-SEP-21	R5572974
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-21	
F1-BTEX	<10		10	mg/kg		02-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		02-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		02-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		02-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	102.2		70-130	%	01-SEP-21	01-SEP-21	R5575557
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		02-SEP-21	
Miscellaneous Parameters							
Moisture	8.53		0.25	%		02-SEP-21	R5574917
L2633658-25 EX21-21-117							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	01-SEP-21	01-SEP-21	R5575542
Ethylbenzene	0.109		0.015	mg/kg	01-SEP-21	01-SEP-21	R5575542
Toluene	0.042		0.014	mg/kg	01-SEP-21	01-SEP-21	R5575542
o-Xylene	0.410		0.050	mg/kg	01-SEP-21	01-SEP-21	R5575542
m+p-Xylene	0.669		0.050	mg/kg	01-SEP-21	01-SEP-21	R5575542
Surrogate: 1,4-Difluorobenzene	85.8		70-130	%	01-SEP-21	01-SEP-21	R5575542
Surrogate: 4-Bromofluorobenzene	93.0		70-130	%	01-SEP-21	01-SEP-21	R5575542
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	01-SEP-21	02-SEP-21	R5572974
Prep/Analysis Dates					01-SEP-21	02-SEP-21	R5572974
Surrogate: 2-Bromobenzotrifluoride	101.8		70-130	%	01-SEP-21	02-SEP-21	R5572974
CCME Total Hydrocarbons							
F1 (C6-C10)	29		10	mg/kg		02-SEP-21	
F1-BTEX	28		10	mg/kg		02-SEP-21	
F2 (C10-C16)	119		25	mg/kg		02-SEP-21	
F3 (C16-C34)	62		50	mg/kg		02-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		02-SEP-21	
Total Hydrocarbons (C6-C50)	210		50	mg/kg		02-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	86.2		70-130	%	01-SEP-21	01-SEP-21	R5575557
Sum of Xylene Isomer Concentrations							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2633658-25 EX21-21-117							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	1.08		0.071	mg/kg		02-SEP-21	
Miscellaneous Parameters							
Moisture	8.31		0.25	%		02-SEP-21	R5574917
L2633658-26 EX21-21-118							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	01-SEP-21	01-SEP-21	R5575542
Ethylbenzene	<0.015		0.015	mg/kg	01-SEP-21	01-SEP-21	R5575542
Toluene	<0.014		0.014	mg/kg	01-SEP-21	01-SEP-21	R5575542
o-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5575542
m+p-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5575542
Surrogate: 1,4-Difluorobenzene	90.2		70-130	%	01-SEP-21	01-SEP-21	R5575542
Surrogate: 4-Bromofluorobenzene	78.8		70-130	%	01-SEP-21	01-SEP-21	R5575542
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	01-SEP-21	02-SEP-21	R5572974
Prep/Analysis Dates					01-SEP-21	02-SEP-21	R5572974
Surrogate: 2-Bromobenzotrifluoride	100.8		70-130	%	01-SEP-21	02-SEP-21	R5572974
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-21	
F1-BTEX	<10		10	mg/kg		02-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		02-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		02-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		02-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	99.6		70-130	%	01-SEP-21	01-SEP-21	R5575557
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		02-SEP-21	
Miscellaneous Parameters							
Moisture	7.52		0.25	%		02-SEP-21	R5574917
L2633658-27 EX21-21-119							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	01-SEP-21	01-SEP-21	R5575542
Ethylbenzene	<0.015		0.015	mg/kg	01-SEP-21	01-SEP-21	R5575542
Toluene	<0.014		0.014	mg/kg	01-SEP-21	01-SEP-21	R5575542
o-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5575542
m+p-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5575542
Surrogate: 1,4-Difluorobenzene	91.7		70-130	%	01-SEP-21	01-SEP-21	R5575542
Surrogate: 4-Bromofluorobenzene	77.3		70-130	%	01-SEP-21	01-SEP-21	R5575542
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	01-SEP-21	02-SEP-21	R5572974
Prep/Analysis Dates					01-SEP-21	02-SEP-21	R5572974
Surrogate: 2-Bromobenzotrifluoride	100.7		70-130	%	01-SEP-21	02-SEP-21	R5572974
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-21	
F1-BTEX	<10		10	mg/kg		02-SEP-21	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2633658-27 EX21-21-119							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
CCME Total Hydrocarbons							
F2 (C10-C16)	<25		25	mg/kg		02-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		02-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		02-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	107.7		70-130	%	01-SEP-21	01-SEP-21	R5575557
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		02-SEP-21	
Miscellaneous Parameters							
Moisture	7.79		0.25	%		02-SEP-21	R5574917
L2633658-28 EX21-21-120							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	01-SEP-21	01-SEP-21	R5575542
Ethylbenzene	<0.015		0.015	mg/kg	01-SEP-21	01-SEP-21	R5575542
Toluene	<0.014		0.014	mg/kg	01-SEP-21	01-SEP-21	R5575542
o-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5575542
m+p-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5575542
Surrogate: 1,4-Difluorobenzene	87.0		70-130	%	01-SEP-21	01-SEP-21	R5575542
Surrogate: 4-Bromofluorobenzene	76.5		70-130	%	01-SEP-21	01-SEP-21	R5575542
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	01-SEP-21	02-SEP-21	R5572974
Prep/Analysis Dates					01-SEP-21	02-SEP-21	R5572974
Surrogate: 2-Bromobenzotrifluoride	99.4		70-130	%	01-SEP-21	02-SEP-21	R5572974
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-21	
F1-BTEX	<10		10	mg/kg		02-SEP-21	
F2 (C10-C16)	174		25	mg/kg		02-SEP-21	
F3 (C16-C34)	55		50	mg/kg		02-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		02-SEP-21	
Total Hydrocarbons (C6-C50)	229		50	mg/kg		02-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	111.9		70-130	%	01-SEP-21	01-SEP-21	R5575557
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		02-SEP-21	
Miscellaneous Parameters							
Moisture	8.73		0.25	%		02-SEP-21	R5574917
L2633658-29 EX21-21-121							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	01-SEP-21	01-SEP-21	R5575542
Ethylbenzene	0.021		0.015	mg/kg	01-SEP-21	01-SEP-21	R5575542
Toluene	<0.014		0.014	mg/kg	01-SEP-21	01-SEP-21	R5575542
o-Xylene	0.069		0.050	mg/kg	01-SEP-21	01-SEP-21	R5575542
m+p-Xylene	0.087		0.050	mg/kg	01-SEP-21	01-SEP-21	R5575542
Surrogate: 1,4-Difluorobenzene	91.7		70-130	%	01-SEP-21	01-SEP-21	R5575542
Surrogate: 4-Bromofluorobenzene	85.1		70-130	%	01-SEP-21	01-SEP-21	R5575542

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2633658-29 EX21-21-121							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	01-SEP-21	02-SEP-21	R5572974
Prep/Analysis Dates					01-SEP-21	02-SEP-21	R5572974
Surrogate: 2-Bromobenzotrifluoride	99.6		70-130	%	01-SEP-21	02-SEP-21	R5572974
CCME Total Hydrocarbons							
F1 (C6-C10)	10		10	mg/kg		02-SEP-21	
F1-BTEX	<10		10	mg/kg		02-SEP-21	
F2 (C10-C16)	177		25	mg/kg		02-SEP-21	
F3 (C16-C34)	55		50	mg/kg		02-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		02-SEP-21	
Total Hydrocarbons (C6-C50)	242		50	mg/kg		02-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	110.1		70-130	%	01-SEP-21	01-SEP-21	R5575557
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	0.156		0.071	mg/kg		02-SEP-21	
Miscellaneous Parameters							
Moisture	7.80		0.25	%		02-SEP-21	R5574917
L2633658-30 EX21-21-122							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	01-SEP-21	01-SEP-21	R5575542
Ethylbenzene	<0.015		0.015	mg/kg	01-SEP-21	01-SEP-21	R5575542
Toluene	<0.014		0.014	mg/kg	01-SEP-21	01-SEP-21	R5575542
o-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5575542
m+p-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5575542
Surrogate: 1,4-Difluorobenzene	92.8		70-130	%	01-SEP-21	01-SEP-21	R5575542
Surrogate: 4-Bromofluorobenzene	85.4		70-130	%	01-SEP-21	01-SEP-21	R5575542
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	01-SEP-21	02-SEP-21	R5572974
Prep/Analysis Dates					01-SEP-21	02-SEP-21	R5572974
Surrogate: 2-Bromobenzotrifluoride	95.7		70-130	%	01-SEP-21	02-SEP-21	R5572974
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-21	
F1-BTEX	<10		10	mg/kg		02-SEP-21	
F2 (C10-C16)	43		25	mg/kg		02-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		02-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		02-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	83.7		70-130	%	01-SEP-21	01-SEP-21	R5575557
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		02-SEP-21	
Miscellaneous Parameters							
Moisture	13.8		0.25	%		02-SEP-21	R5574917
L2633658-31 EX21-21-123							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	01-SEP-21	01-SEP-21	R5575542

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2633658-31 EX21-21-123							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
BTEX and Styrene							
Ethylbenzene	<0.015		0.015	mg/kg	01-SEP-21	01-SEP-21	R5575542
Toluene	<0.014		0.014	mg/kg	01-SEP-21	01-SEP-21	R5575542
o-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5575542
m+p-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5575542
Surrogate: 1,4-Difluorobenzene	95.3		70-130	%	01-SEP-21	01-SEP-21	R5575542
Surrogate: 4-Bromofluorobenzene	82.4		70-130	%	01-SEP-21	01-SEP-21	R5575542
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	01-SEP-21	02-SEP-21	R5572974
Prep/Analysis Dates					01-SEP-21	02-SEP-21	R5572974
Surrogate: 2-Bromobenzotrifluoride	93.4		70-130	%	01-SEP-21	02-SEP-21	R5572974
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-21	
F1-BTEX	<10		10	mg/kg		02-SEP-21	
F2 (C10-C16)	182		25	mg/kg		02-SEP-21	
F3 (C16-C34)	60		50	mg/kg		02-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		02-SEP-21	
Total Hydrocarbons (C6-C50)	242		50	mg/kg		02-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	97.2		70-130	%	01-SEP-21	01-SEP-21	R5575557
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		02-SEP-21	
Miscellaneous Parameters							
Moisture	8.95		0.25	%		02-SEP-21	R5574917
L2633658-32 EX21-21-124							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	01-SEP-21	01-SEP-21	R5575542
Ethylbenzene	<0.015		0.015	mg/kg	01-SEP-21	01-SEP-21	R5575542
Toluene	<0.014		0.014	mg/kg	01-SEP-21	01-SEP-21	R5575542
o-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5575542
m+p-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5575542
Surrogate: 1,4-Difluorobenzene	90.2		70-130	%	01-SEP-21	01-SEP-21	R5575542
Surrogate: 4-Bromofluorobenzene	84.4		70-130	%	01-SEP-21	01-SEP-21	R5575542
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	01-SEP-21	02-SEP-21	R5572974
Prep/Analysis Dates					01-SEP-21	02-SEP-21	R5572974
Surrogate: 2-Bromobenzotrifluoride	73.9		70-130	%	01-SEP-21	02-SEP-21	R5572974
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-21	
F1-BTEX	<10		10	mg/kg		02-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		02-SEP-21	
F3 (C16-C34)	109		50	mg/kg		02-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		02-SEP-21	
Total Hydrocarbons (C6-C50)	109		50	mg/kg		02-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	120.6		70-130	%	01-SEP-21	01-SEP-21	R5575557
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		02-SEP-21	
Miscellaneous Parameters							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2633658-32 EX21-21-124							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
Moisture	7.77		0.25	%		02-SEP-21	R5574917
L2633658-33 EX21-21-124D							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	01-SEP-21	01-SEP-21	R5575542
Ethylbenzene	<0.015		0.015	mg/kg	01-SEP-21	01-SEP-21	R5575542
Toluene	<0.014		0.014	mg/kg	01-SEP-21	01-SEP-21	R5575542
o-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5575542
m+p-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5575542
Surrogate: 1,4-Difluorobenzene	100.9		70-130	%	01-SEP-21	01-SEP-21	R5575542
Surrogate: 4-Bromofluorobenzene	81.3		70-130	%	01-SEP-21	01-SEP-21	R5575542
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	01-SEP-21	02-SEP-21	R5572974
Prep/Analysis Dates					01-SEP-21	02-SEP-21	R5572974
Surrogate: 2-Bromobenzotrifluoride	89.2		70-130	%	01-SEP-21	02-SEP-21	R5572974
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-21	
F1-BTEX	<10		10	mg/kg		02-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		02-SEP-21	
F3 (C16-C34)	59		50	mg/kg		02-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		02-SEP-21	
Total Hydrocarbons (C6-C50)	59		50	mg/kg		02-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	100.4		70-130	%	01-SEP-21	01-SEP-21	R5575557
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		02-SEP-21	
Miscellaneous Parameters							
Moisture	7.70		0.25	%		02-SEP-21	R5574917
L2633658-34 EX21-21-113-D							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	01-SEP-21	01-SEP-21	R5575542
Ethylbenzene	<0.015		0.015	mg/kg	01-SEP-21	01-SEP-21	R5575542
Toluene	<0.014		0.014	mg/kg	01-SEP-21	01-SEP-21	R5575542
o-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5575542
m+p-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5575542
Surrogate: 1,4-Difluorobenzene	90.6		70-130	%	01-SEP-21	01-SEP-21	R5575542
Surrogate: 4-Bromofluorobenzene	73.9		70-130	%	01-SEP-21	01-SEP-21	R5575542
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	01-SEP-21	02-SEP-21	R5572974
Prep/Analysis Dates					01-SEP-21	02-SEP-21	R5572974
Surrogate: 2-Bromobenzotrifluoride	96.4		70-130	%	01-SEP-21	02-SEP-21	R5572974
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-21	
F1-BTEX	<10		10	mg/kg		02-SEP-21	
F2 (C10-C16)	54		25	mg/kg		02-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		02-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		02-SEP-21	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2633658-34 EX21-21-113-D							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
CCME Total Hydrocarbons							
Total Hydrocarbons (C6-C50)	54		50	mg/kg		02-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	86.1		70-130	%	01-SEP-21	01-SEP-21	R5575557
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		02-SEP-21	
Miscellaneous Parameters							
Moisture	10.7		0.25	%		02-SEP-21	R5574917
L2633658-35 EX21-21-21							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	0.0098		0.0050	mg/kg	01-SEP-21	01-SEP-21	R5575542
Ethylbenzene	0.069		0.015	mg/kg	01-SEP-21	01-SEP-21	R5575542
Toluene	<0.014		0.014	mg/kg	01-SEP-21	01-SEP-21	R5575542
o-Xylene	0.070		0.050	mg/kg	01-SEP-21	01-SEP-21	R5575542
m+p-Xylene	0.119		0.050	mg/kg	01-SEP-21	01-SEP-21	R5575542
Surrogate: 1,4-Difluorobenzene	90.3		70-130	%	01-SEP-21	01-SEP-21	R5575542
Surrogate: 4-Bromofluorobenzene	82.5		70-130	%	01-SEP-21	01-SEP-21	R5575542
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	01-SEP-21	02-SEP-21	R5572974
Prep/Analysis Dates					01-SEP-21	02-SEP-21	R5572974
Surrogate: 2-Bromobenzotrifluoride	100.3		70-130	%	01-SEP-21	02-SEP-21	R5572974
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-21	
F1-BTEX	<10		10	mg/kg		02-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		02-SEP-21	
F3 (C16-C34)	96		50	mg/kg		02-SEP-21	
F4 (C34-C50)	76		50	mg/kg		02-SEP-21	
Total Hydrocarbons (C6-C50)	172		50	mg/kg		02-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	73.3		70-130	%	01-SEP-21	01-SEP-21	R5575557
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	0.189		0.071	mg/kg		02-SEP-21	
Miscellaneous Parameters							
Moisture	12.8		0.25	%		02-SEP-21	R5574917
L2633658-36 EX21-21-21-D							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	01-SEP-21	01-SEP-21	R5575542
Ethylbenzene	0.059		0.015	mg/kg	01-SEP-21	01-SEP-21	R5575542
Toluene	<0.014		0.014	mg/kg	01-SEP-21	01-SEP-21	R5575542
o-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5575542
m+p-Xylene	0.138		0.050	mg/kg	01-SEP-21	01-SEP-21	R5575542
Surrogate: 1,4-Difluorobenzene	96.9		70-130	%	01-SEP-21	01-SEP-21	R5575542
Surrogate: 4-Bromofluorobenzene	83.0		70-130	%	01-SEP-21	01-SEP-21	R5575542
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	01-SEP-21	02-SEP-21	R5572974
Prep/Analysis Dates					01-SEP-21	02-SEP-21	R5572974

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2633658-36 EX21-21-21-D							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
CCME F2-4 Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	96.2		70-130	%	01-SEP-21	02-SEP-21	R5572974
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-21	
F1-BTEX	<10		10	mg/kg		02-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		02-SEP-21	
F3 (C16-C34)	159		50	mg/kg		02-SEP-21	
F4 (C34-C50)	132		50	mg/kg		02-SEP-21	
Total Hydrocarbons (C6-C50)	291		50	mg/kg		02-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	96.1		70-130	%	01-SEP-21	01-SEP-21	R5575557
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	0.138		0.071	mg/kg		02-SEP-21	
Miscellaneous Parameters							
Moisture	15.1		0.25	%		02-SEP-21	R5574917
L2633658-37 EX21-21-20							
Sampled By: JT/BR on 27-AUG-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	01-SEP-21	01-SEP-21	R5575542
Ethylbenzene	<0.015		0.015	mg/kg	01-SEP-21	01-SEP-21	R5575542
Toluene	<0.014		0.014	mg/kg	01-SEP-21	01-SEP-21	R5575542
o-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5575542
m+p-Xylene	<0.050		0.050	mg/kg	01-SEP-21	01-SEP-21	R5575542
Surrogate: 1,4-Difluorobenzene	95.5		70-130	%	01-SEP-21	01-SEP-21	R5575542
Surrogate: 4-Bromofluorobenzene	85.8		70-130	%	01-SEP-21	01-SEP-21	R5575542
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	01-SEP-21	02-SEP-21	R5572974
Prep/Analysis Dates					01-SEP-21	02-SEP-21	R5572974
Surrogate: 2-Bromobenzotrifluoride	94.9		70-130	%	01-SEP-21	02-SEP-21	R5572974
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		02-SEP-21	
F1-BTEX	<10		10	mg/kg		02-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		02-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		02-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		02-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		02-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	87.9		70-130	%	01-SEP-21	01-SEP-21	R5575557
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		02-SEP-21	
Miscellaneous Parameters							
Moisture	9.25		0.25	%		02-SEP-21	R5574917

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
SMI	Surrogate recovery could not be measured due to sample matrix interference.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BTXS-MEOH-HS-MS-CL	Soil	BTEX and Styrene	EPA 8260C/5021A

The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. Target compound concentrations are measured using mass spectrometry detection.

F1-4-CALC-CL	Soil	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-MEOH-HS-FID-CL	Soil	F1(C6-C10)	CWS PHC Tier 1

The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. The F1 fraction concentration is measured using flame ionization detection.

F2-4-TMB-H/A-FID-CL	Soil	CCME F2-4 Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

This analysis is carried out in accordance with the "Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method, Canadian Council of Ministers of the Environment, December 2001." For C10 to C50 hydrocarbons (F2, F3, F4) and gravimetric heavy hydrocarbons (F4G-sg), a subsample of the sediment/soil is extracted with 1:1 hexane:acetone using a rotary extractor. The extract undergoes a silica-gel clean-up to remove polar compounds. F2, F3 & F4 are analyzed by on-column GC/FID, and F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where F4 (C34-C50) and F4G-sg results are reported for a sample, the larger of the reported values is used for comparison against the relevant CCME standard for F4.
7. The gravimetric heavy hydrocarbon results (F4G-sg), cannot be added to the C6 to C50 hydrocarbon results.
8. This method is validated for use.
9. Data from analysis of quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram.

F4G-TMB-CL	Soil	CCME Gravimetric Heavy Hydrocarbons (SG)	CCME CWS-PHC, Pub #1310, Dec 2001

This analysis is carried out in accordance with the "Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method, Canadian Council of Ministers of the Environment, December 2001." For gravimetric heavy hydrocarbons (F4G-sg), a subsample of the sediment/soil is extracted with 1:1 hexane:acetone using a rotary extractor. The extract undergoes a silica-gel clean-up to remove polar compounds prior to gravimetric analysis.

Notes:
1. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
2. Where F4 (C34-C50) and F4G-sg results are reported for a sample, the larger of the reported values is used for comparison against the relevant CCME standard for F4.
3. The gravimetric heavy hydrocarbon (F4G-sg) result cannot be added to the C6 to C50 hydrocarbons results.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

4. This method is validated for use.
5. Data from analysis of quality control samples is available upon request.
6. Reported results are expressed as milligrams per dry kilogram.

MOISTURE-CL	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)

This analysis is carried out gravimetrically by drying the sample at 105 C

XYLENES-SUM-CALC-CL	Soil	Sum of Xylene Isomer Concentrations	CALCULATED RESULT

Total xylenes represents the sum of o-xylene and m&p-xylene.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
CL	ALS ENVIRONMENTAL - CALGARY, ALBERTA, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Client: GOLDER ASSOCIATES LTD
16820 107 Ave NW
Edmonton AB T5P 4C3
Contact: Steven Fiddler

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTXS-MEOH-HS-MS-CL	**Soil**							
Batch R5574899								
WG3609585-3 DUP		**L2633658-1**						
Benzene		<0.0050	<0.0050	RPD-NA	mg/kg	N/A	30	01-SEP-21
Ethylbenzene		<0.015	<0.015	RPD-NA	mg/kg	N/A	30	01-SEP-21
Toluene		0.088	0.088		mg/kg	0.4	30	01-SEP-21
o-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	01-SEP-21
m+p-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	01-SEP-21
WG3609585-2 LCS								
Benzene			93.5		%		70-130	01-SEP-21
Ethylbenzene			85.3		%		70-130	01-SEP-21
Toluene			86.9		%		70-130	01-SEP-21
o-Xylene			87.2		%		70-130	01-SEP-21
m+p-Xylene			89.8		%		70-130	01-SEP-21
WG3609585-1 MB								
Benzene			<0.0050		mg/kg		0.005	01-SEP-21
Ethylbenzene			<0.015		mg/kg		0.015	01-SEP-21
Toluene			<0.014		mg/kg		0.014	01-SEP-21
o-Xylene			<0.050		mg/kg		0.05	01-SEP-21
m+p-Xylene			<0.050		mg/kg		0.05	01-SEP-21
Surrogate: 1,4-Difluorobenzene			85.9		%		70-130	01-SEP-21
Surrogate: 4-Bromofluorobenzene			77.1		%		70-130	01-SEP-21
Batch R5575542								
WG3609587-3 DUP		**L2633658-21**						
Benzene		<0.0050	<0.0050	RPD-NA	mg/kg	N/A	30	01-SEP-21
Ethylbenzene		<0.015	<0.015	RPD-NA	mg/kg	N/A	30	01-SEP-21
Toluene		<0.014	<0.014	RPD-NA	mg/kg	N/A	30	01-SEP-21
o-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	01-SEP-21
m+p-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	01-SEP-21
WG3609587-2 LCS								
Benzene			82.9		%		70-130	01-SEP-21
Ethylbenzene			89.8		%		70-130	01-SEP-21
Toluene			83.3		%		70-130	01-SEP-21
o-Xylene			86.6		%		70-130	01-SEP-21
m+p-Xylene			93.3		%		70-130	01-SEP-21
WG3609587-1 MB								
Benzene			<0.0050		mg/kg		0.005	01-SEP-21
Ethylbenzene			<0.015		mg/kg		0.015	01-SEP-21

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTXS-MEOH-HS-MS-CL	**Soil**							
Batch R5575542								
WG3609587-1 MB								
Toluene			<0.014		mg/kg		0.014	01-SEP-21
o-Xylene			<0.050		mg/kg		0.05	01-SEP-21
m+p-Xylene			<0.050		mg/kg		0.05	01-SEP-21
Surrogate: 1,4-Difluorobenzene			97.3		%		70-130	01-SEP-21
Surrogate: 4-Bromofluorobenzene			86.7		%		70-130	01-SEP-21
F1-MEOH-HS-FID-CL	**Soil**							
Batch R5574900								
WG3609585-3 DUP		**L2633658-1**						
F1(C6-C10)		<10	<10	RPD-NA	mg/kg	N/A	30	01-SEP-21
WG3609585-2 LCS								
F1(C6-C10)			99.9		%		70-130	01-SEP-21
WG3609585-1 MB								
F1(C6-C10)			<10		mg/kg		10	01-SEP-21
Surrogate: 3,4-Dichlorotoluene			91.3		%		70-130	01-SEP-21
Batch R5575557								
WG3609587-3 DUP		**L2633658-21**						
F1(C6-C10)		<10	<10	RPD-NA	mg/kg	N/A	30	01-SEP-21
WG3609587-2 LCS								
F1(C6-C10)			95.6		%		70-130	01-SEP-21
WG3609587-1 MB								
F1(C6-C10)			<10		mg/kg		10	01-SEP-21
Surrogate: 3,4-Dichlorotoluene			113.8		%		70-130	01-SEP-21
F2-4-TMB-H/A-FID-CL	**Soil**							
Batch R5572974								
WG3609572-4 DUP		**L2633658-1**						
F2: (C10-C16)		<25	<25	RPD-NA	mg/kg	N/A	40	02-SEP-21
F3: (C16-C34)		872	890		mg/kg	1.9	40	02-SEP-21
F4: (C34-C50)		2250	2240		mg/kg	0.4	40	02-SEP-21
WG3609582-4 DUP		**L2633658-21**						
F2: (C10-C16)		61	59		mg/kg	4.3	40	02-SEP-21
F3: (C16-C34)		<50	<50	RPD-NA	mg/kg	N/A	40	02-SEP-21
F4: (C34-C50)		<50	<50	RPD-NA	mg/kg	N/A	40	02-SEP-21
WG3609572-3 IRM		**ALS PHC3 RM**						
F2: (C10-C16)			101.3		%		70-130	02-SEP-21
F3: (C16-C34)			107.8		%		70-130	02-SEP-21
F4: (C34-C50)			115.6		%		70-130	02-SEP-21

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-4-TMB-H/A-FID-CL	**Soil**							
Batch R5572974								
WG3609582-3 IRM		**ALS PHC3 RM**						
F2: (C10-C16)			95.4		%		70-130	02-SEP-21
F3: (C16-C34)			124.6		%		70-130	02-SEP-21
F4: (C34-C50)			75.6		%		70-130	02-SEP-21
WG3609572-2 LCS								
F2: (C10-C16)			117.9		%		70-130	02-SEP-21
F3: (C16-C34)			102.2		%		70-130	02-SEP-21
F4: (C34-C50)			116.5		%		70-130	02-SEP-21
WG3609582-2 LCS								
F2: (C10-C16)			109.9		%		70-130	02-SEP-21
F3: (C16-C34)			113.6		%		70-130	02-SEP-21
F4: (C34-C50)			125.7		%		70-130	02-SEP-21
WG3609572-1 MB								
F2: (C10-C16)			<25		mg/kg		25	02-SEP-21
F3: (C16-C34)			<50		mg/kg		50	02-SEP-21
F4: (C34-C50)			<50		mg/kg		50	02-SEP-21
Surrogate: 2-Bromobenzotrifluoride			116.0		%		70-130	02-SEP-21
WG3609582-1 MB								
F2: (C10-C16)			<25		mg/kg		25	02-SEP-21
F3: (C16-C34)			<50		mg/kg		50	02-SEP-21
F4: (C34-C50)			<50		mg/kg		50	02-SEP-21
Surrogate: 2-Bromobenzotrifluoride			101.3		%		70-130	02-SEP-21
F4G-TMB-CL	**Soil**							
Batch R5578358								
WG3610886-4 DUP		**L2633658-1**						
Gravimetric Heavy Hydrocarbons (Silica)		2630	2880		mg/kg	9.1	40	03-SEP-21
WG3610886-3 IRM		**ALS PHC3 RM**						
Gravimetric Heavy Hydrocarbons (Silica)			87.7		%		70-130	03-SEP-21
WG3610886-2 LCS								
Gravimetric Heavy Hydrocarbons (Silica)			112.2		%		70-130	03-SEP-21
WG3610886-1 MB								
Gravimetric Heavy Hydrocarbons (Silica)			<500		mg/kg		500	03-SEP-21
MOISTURE-CL	**Soil**							
Batch R5574080								
WG3609576-3 DUP		**L2633658-1**						
Moisture		4.54	5.41		%	17	20	01-SEP-21
WG3609576-2 LCS								

Quality Control Report

Workorder: L2633658 Report Date: 07-SEP-21

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MOISTURE-CL	**Soil**							
Batch R5574080								
WG3609576-2 LCS								
Moisture			95.9		%		90-110	01-SEP-21
WG3609576-1 MB								
Moisture			<0.25		%		0.25	01-SEP-21
Batch R5574917								
WG3609584-3 DUP		**L2633658-21**						
Moisture		9.33	8.88		%	4.9	20	02-SEP-21
WG3609584-2 LCS								
Moisture			96.8		%		90-110	02-SEP-21
WG3609584-1 MB								
Moisture			<0.25		%		0.25	02-SEP-21

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

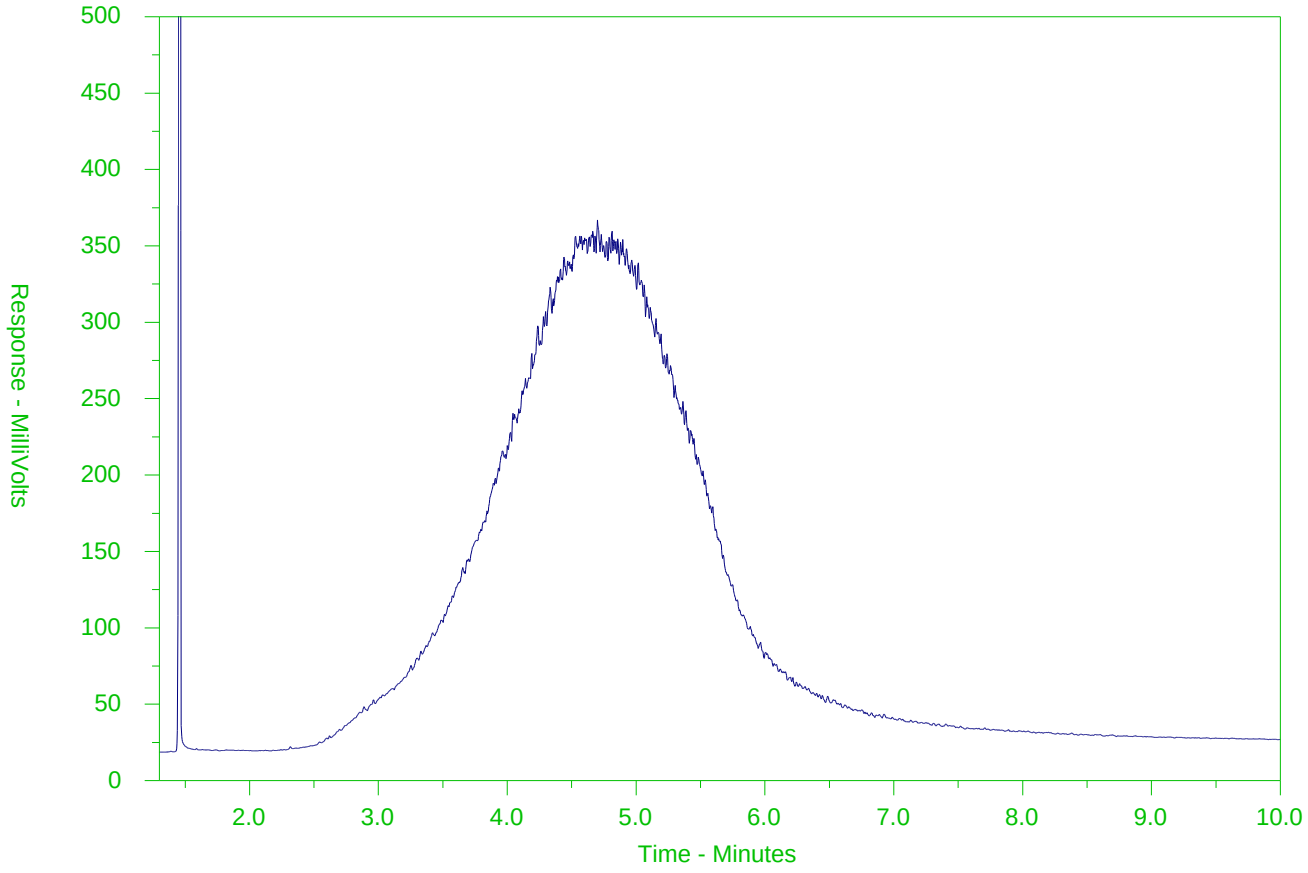
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2633658-1
Client Sample ID: EX21-21-15



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

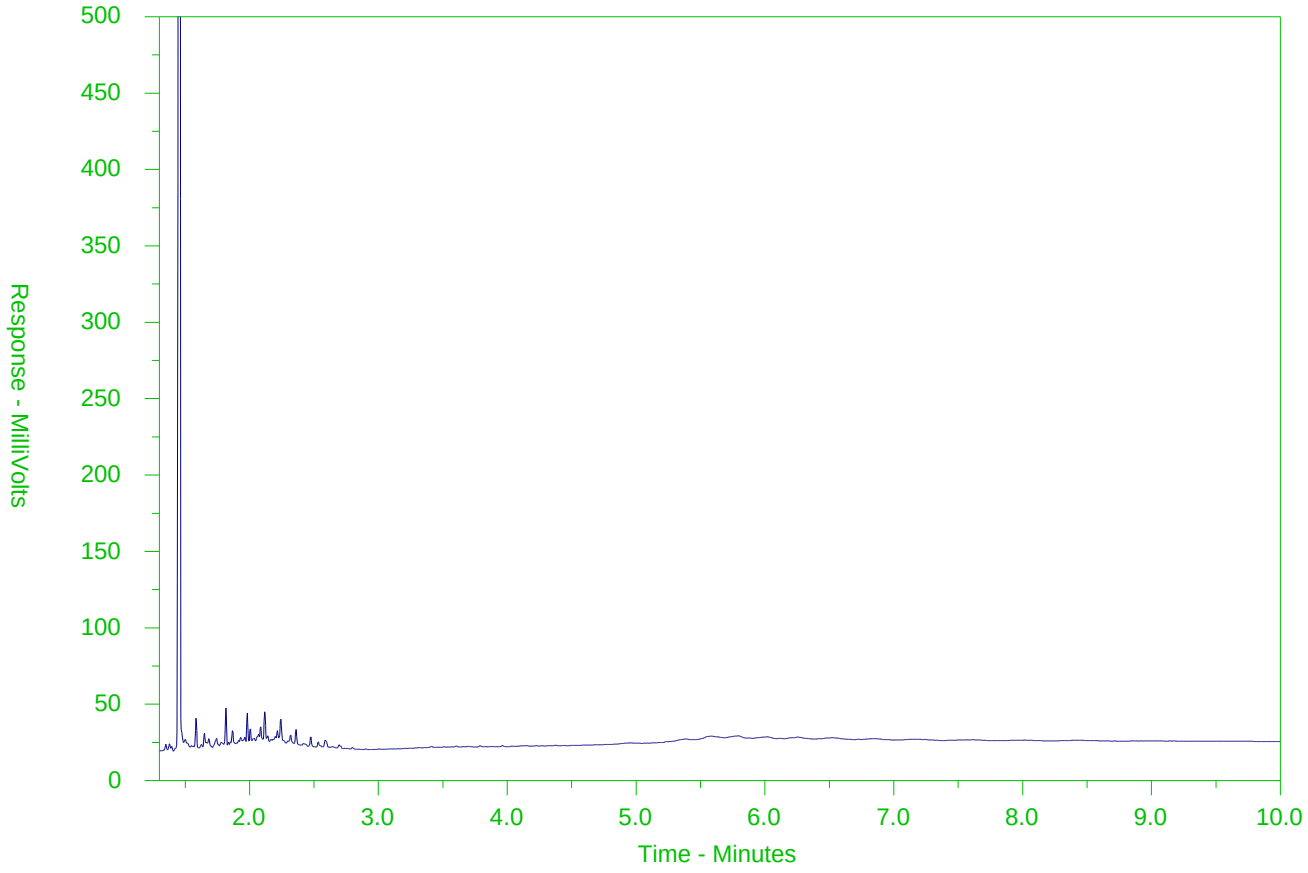
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2633658-2
Client Sample ID: EX9-21-128



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

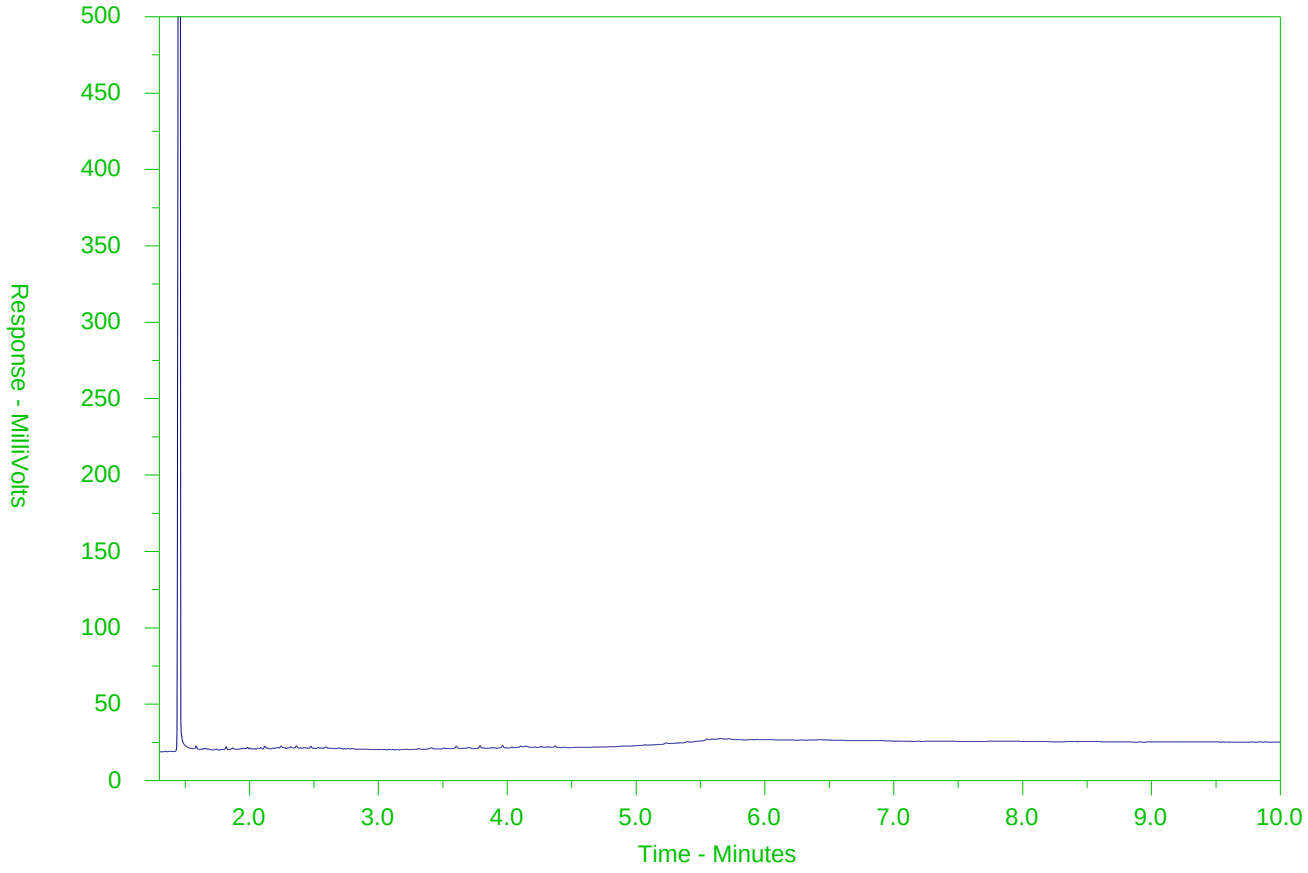
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2633658-3
Client Sample ID: EX21-21-70



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

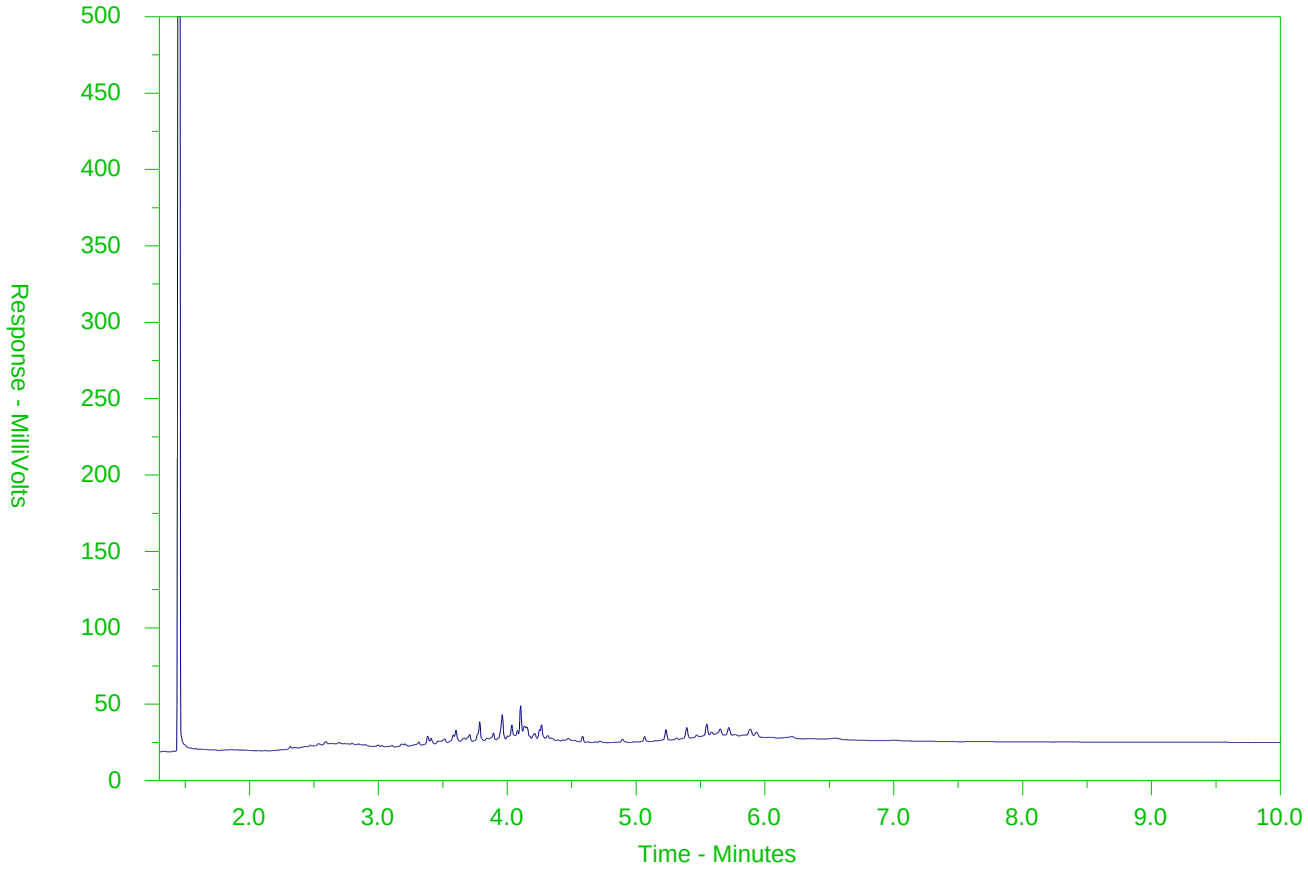
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2633658-4
Client Sample ID: EX21-21-81



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

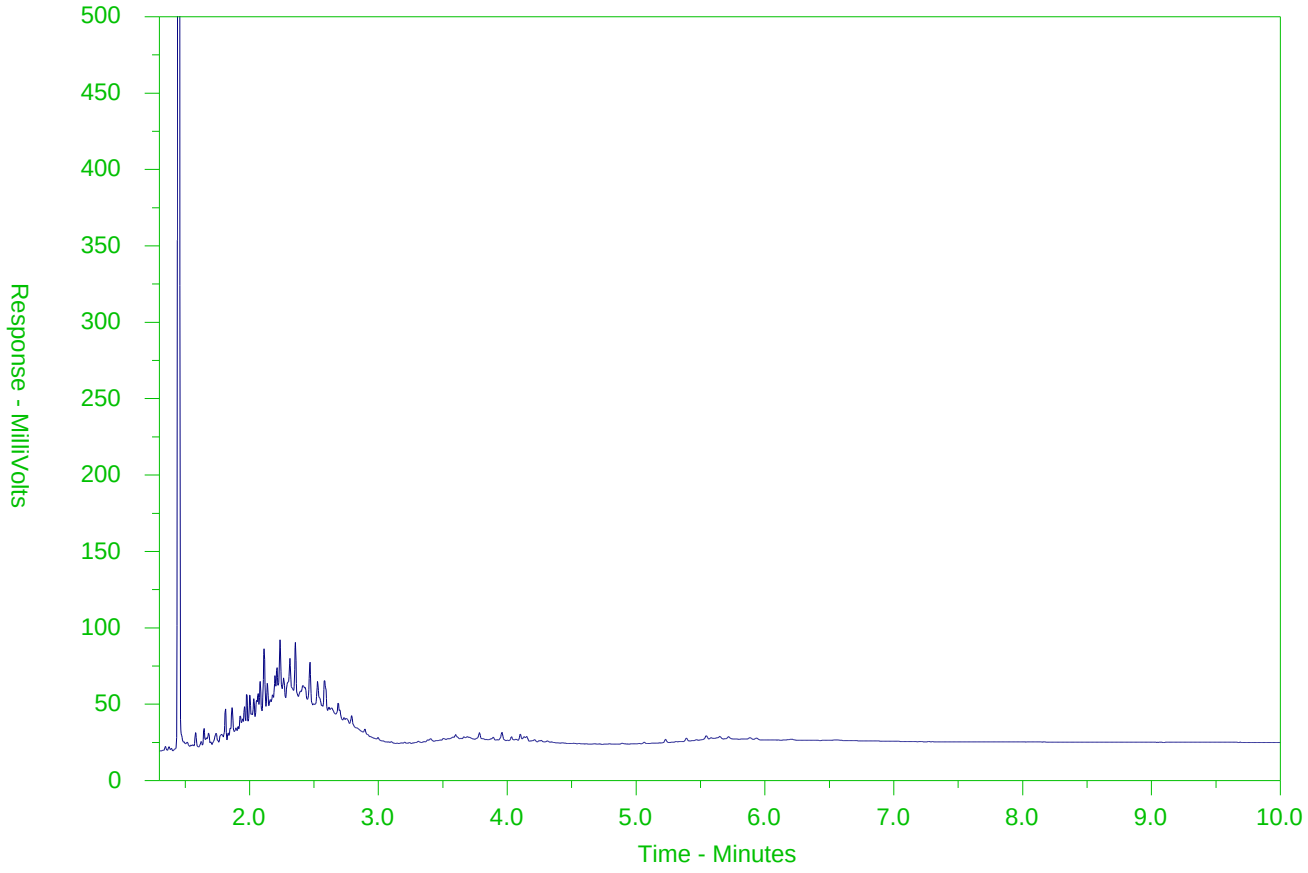
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2633658-5
Client Sample ID: EX21-21-84



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

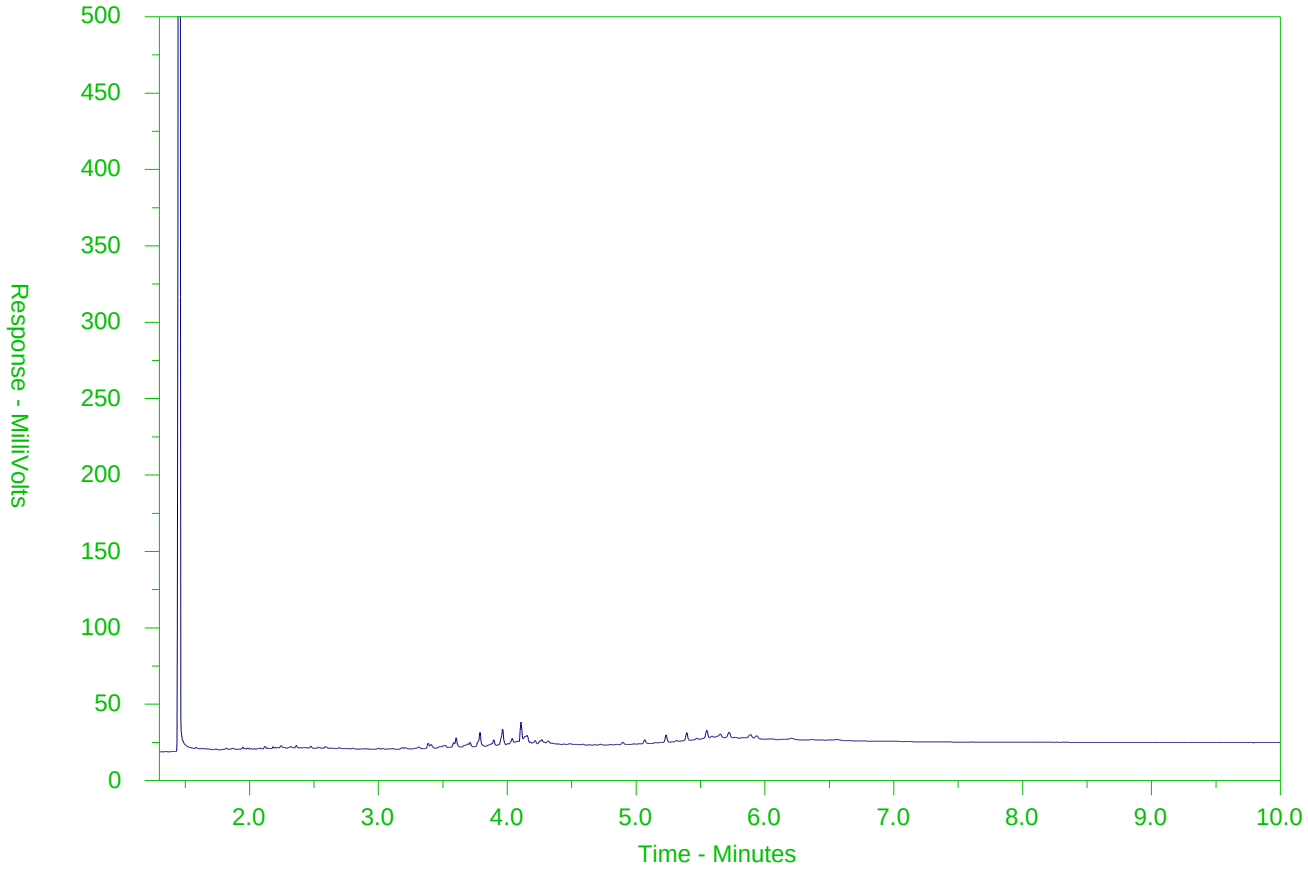
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2633658-6
Client Sample ID: EX21-21-86



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

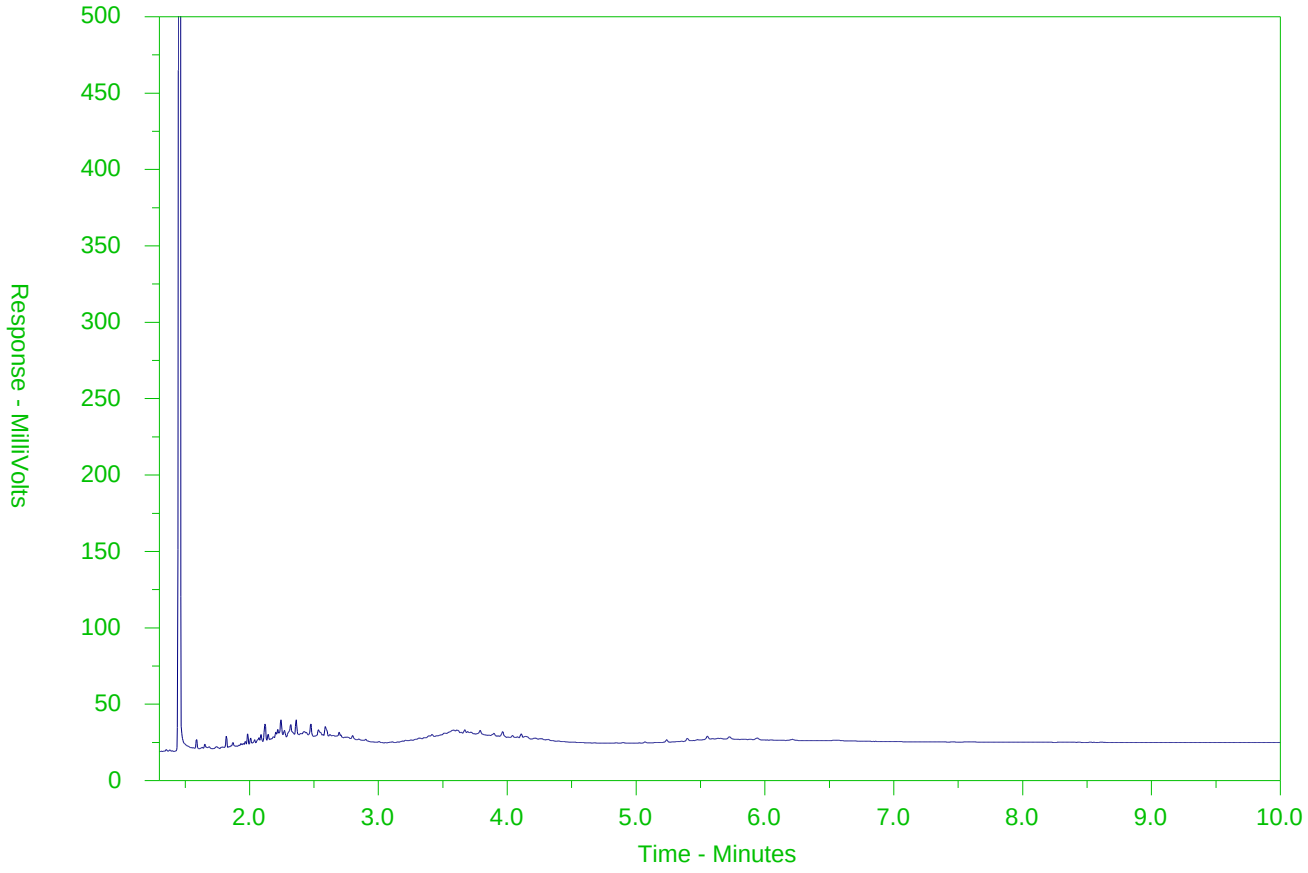
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2633658-7
Client Sample ID: EX21-21-87



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

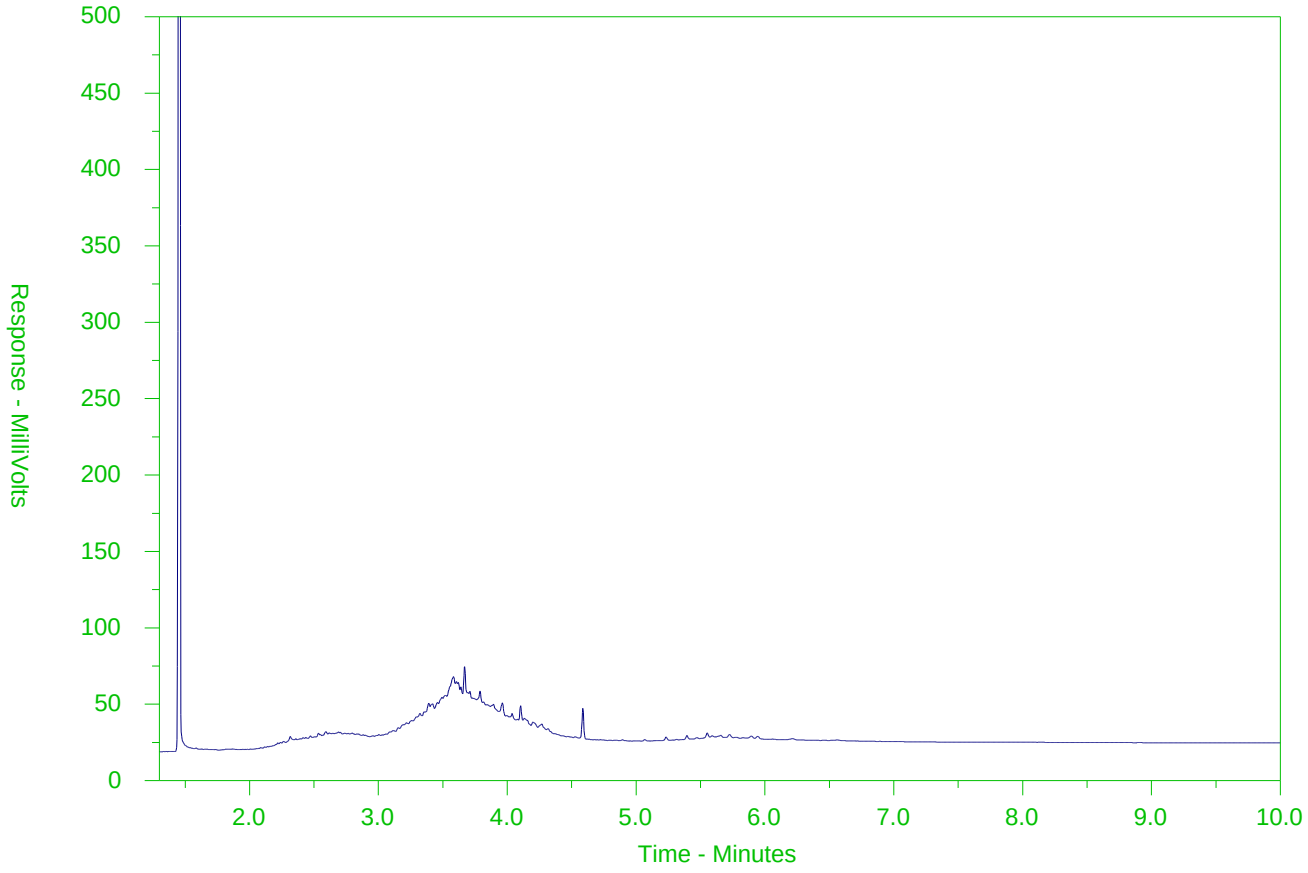
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2633658-8
Client Sample ID: EX21-21-89



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

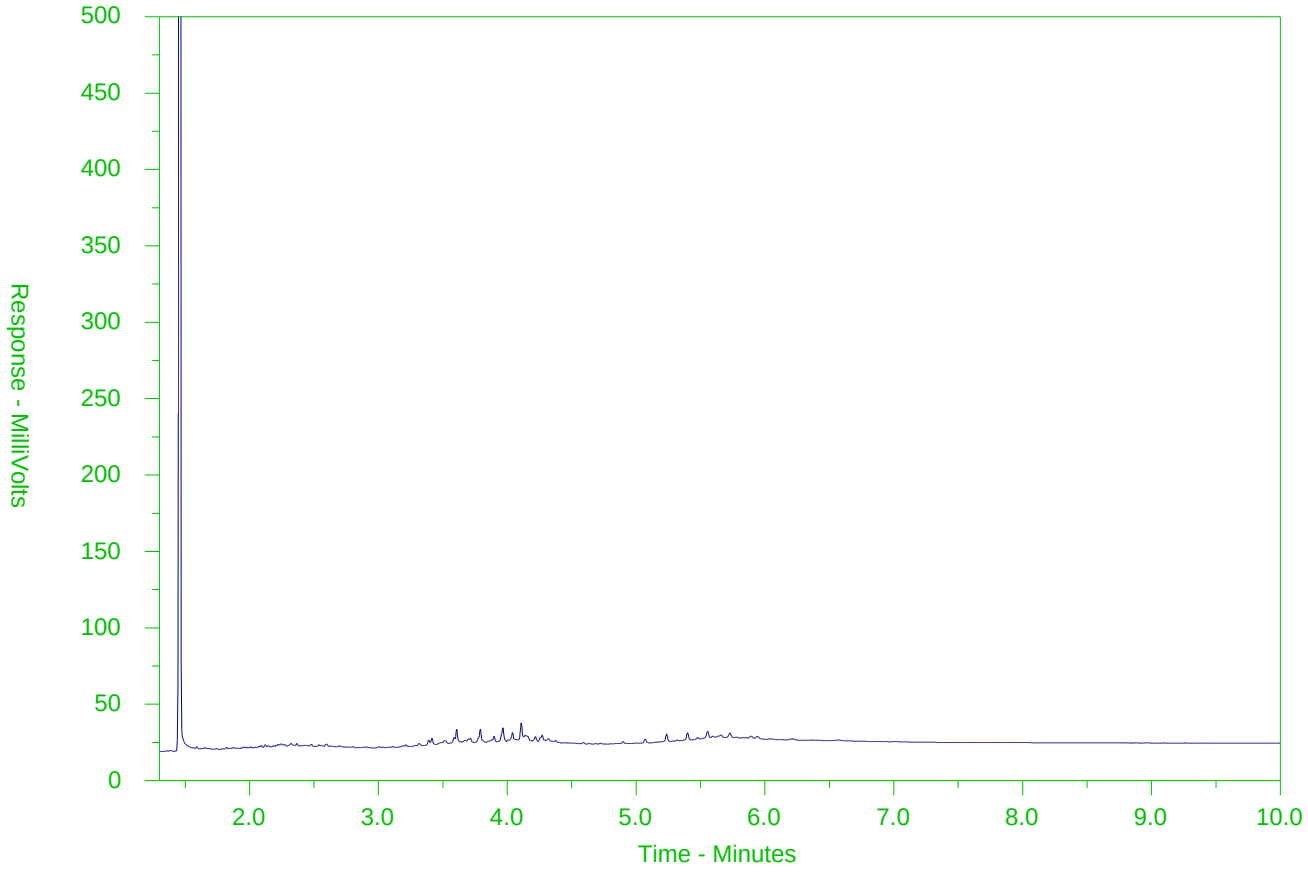
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2633658-9
Client Sample ID: EX21-21-91



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

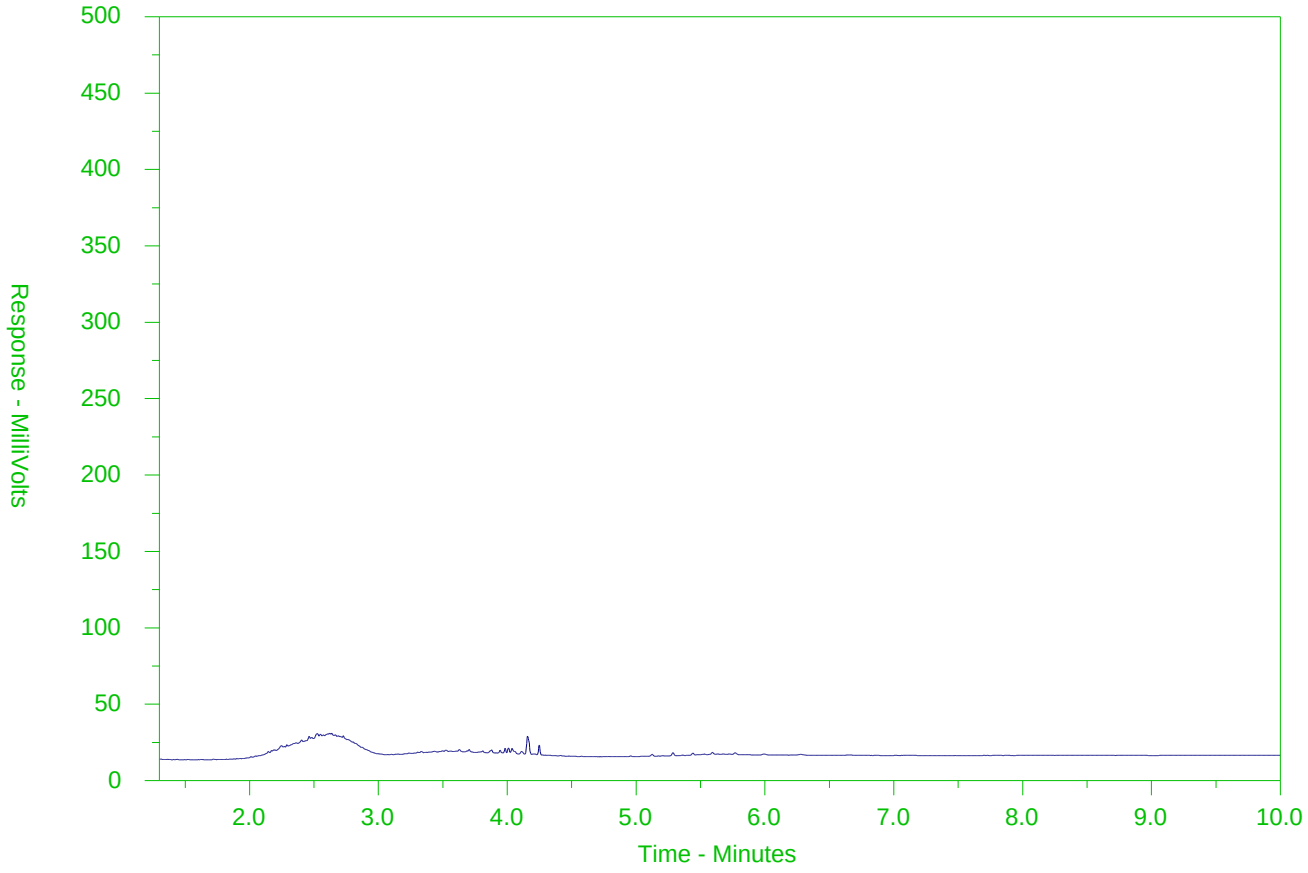
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2633658-10
Client Sample ID: EX21-21-93



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

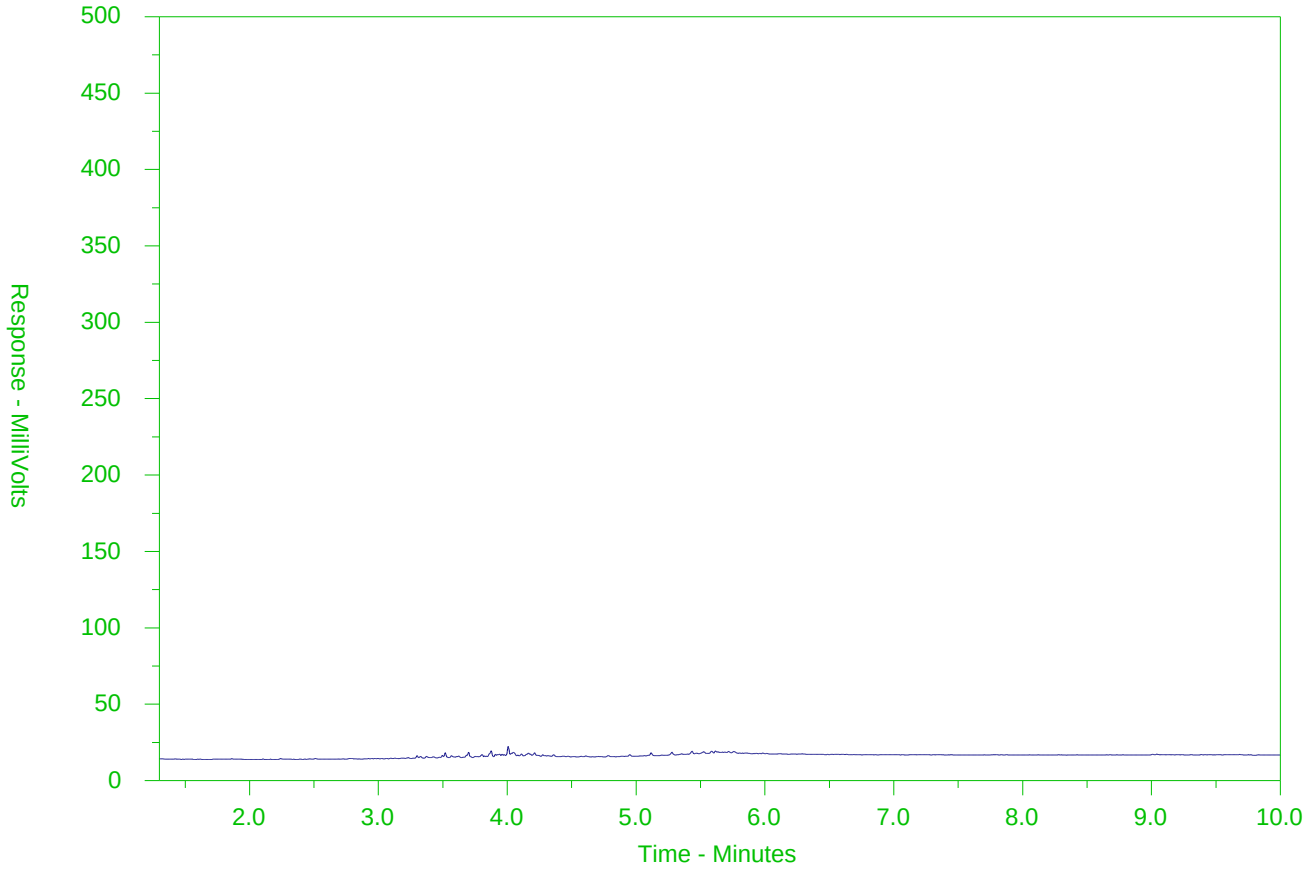
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2633658-11
Client Sample ID: EX21-21-95



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

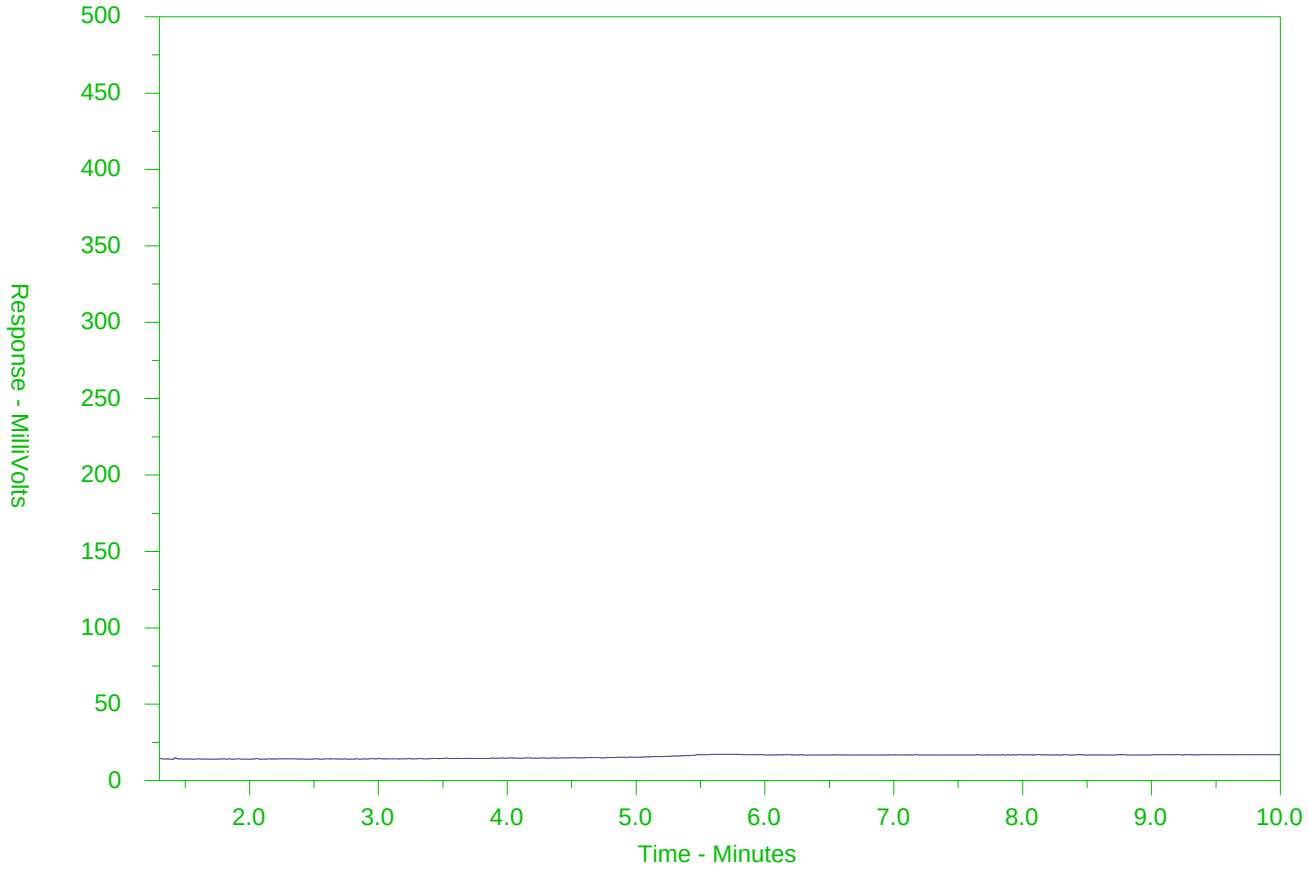
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2633658-12
Client Sample ID: EX21-21-98



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

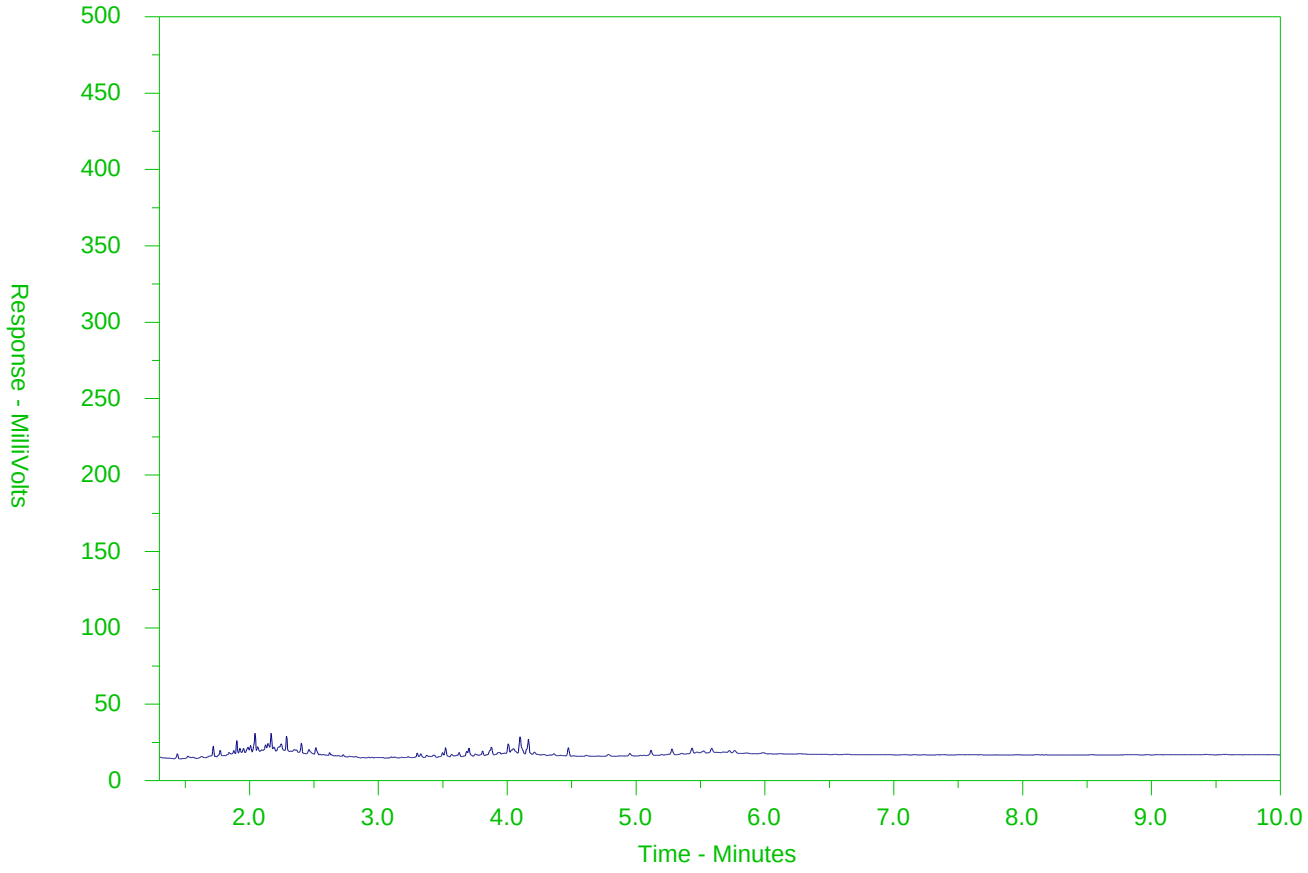
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2633658-13
Client Sample ID: EX21-21-102



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

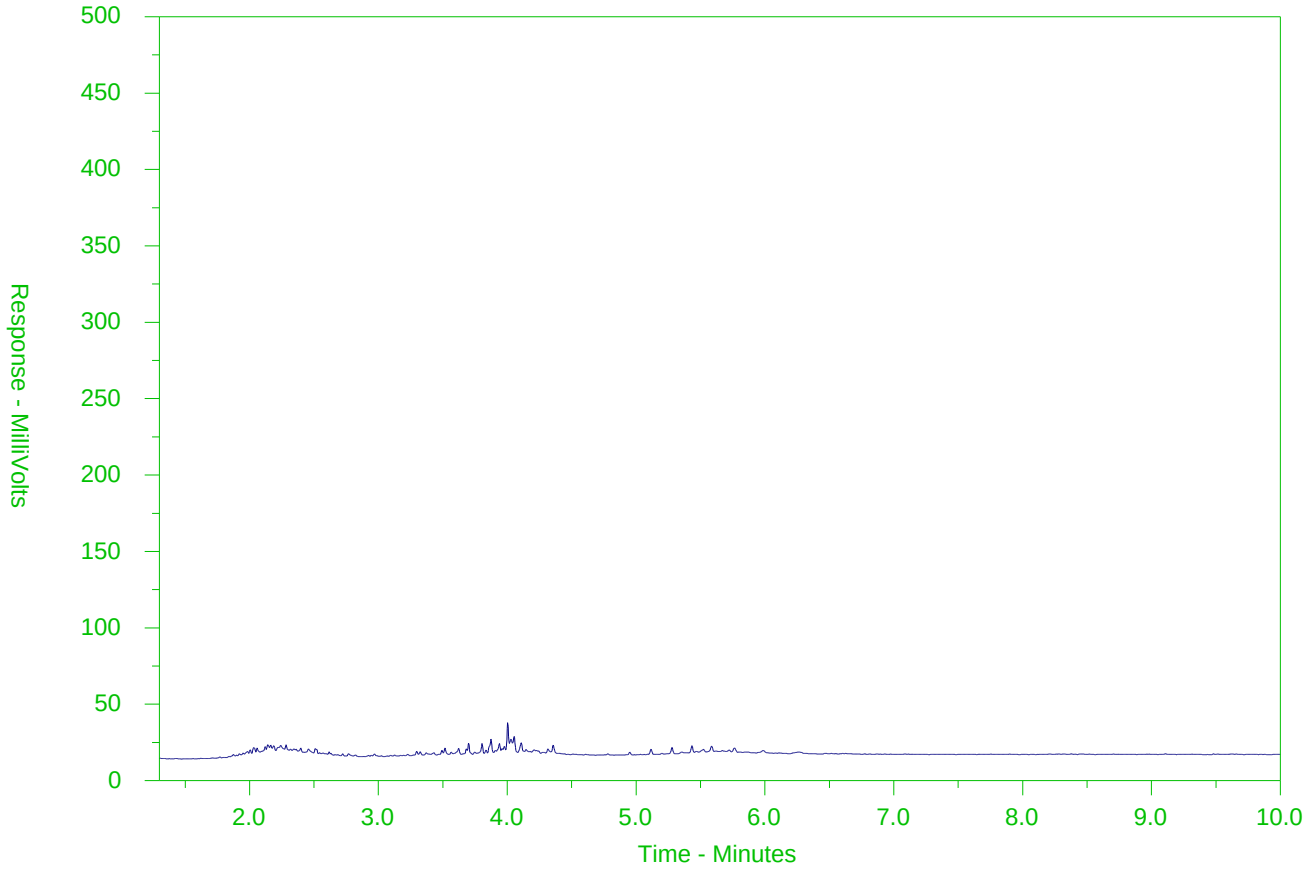
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2633658-14
Client Sample ID: EX21-21-103



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

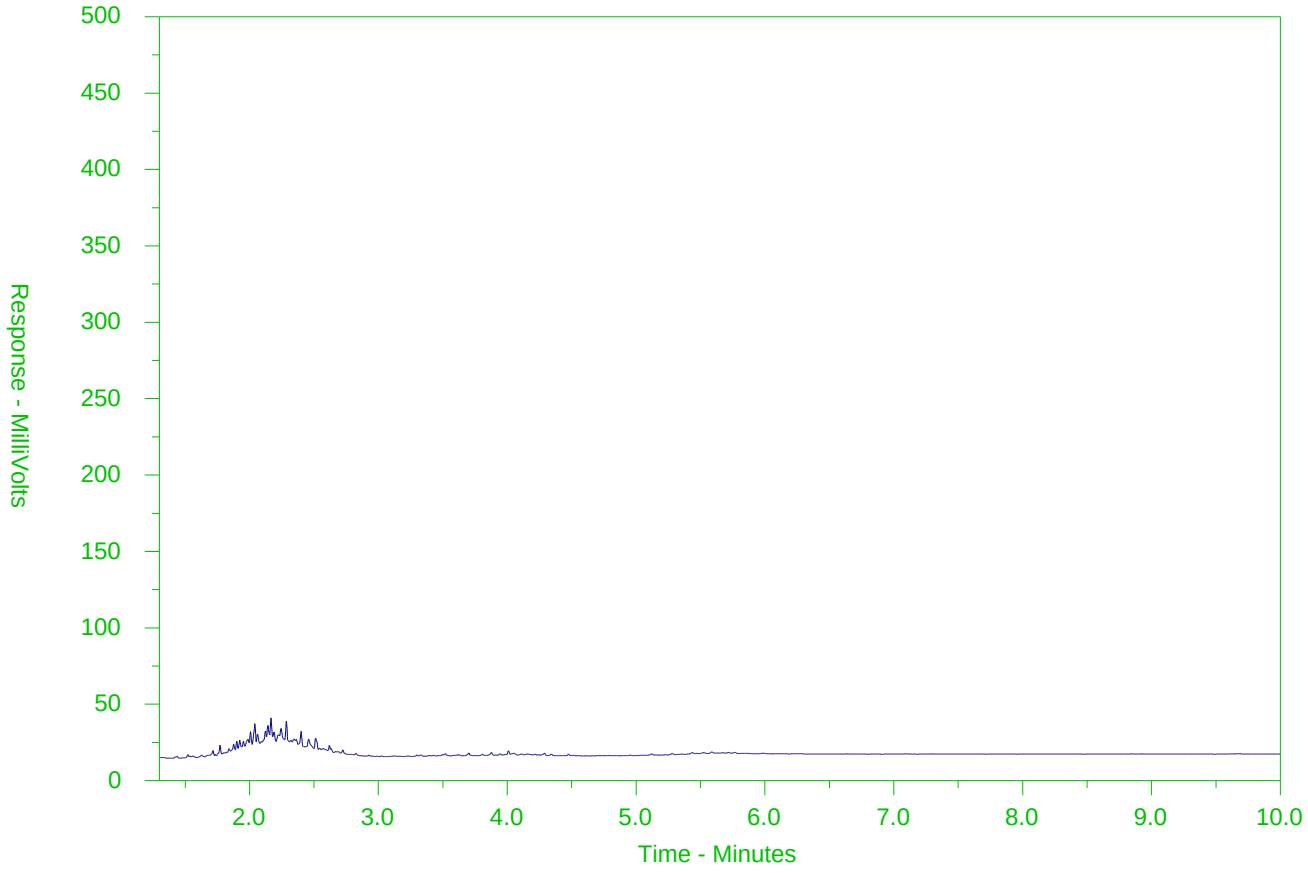
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2633658-15
Client Sample ID: EX21-21-105



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

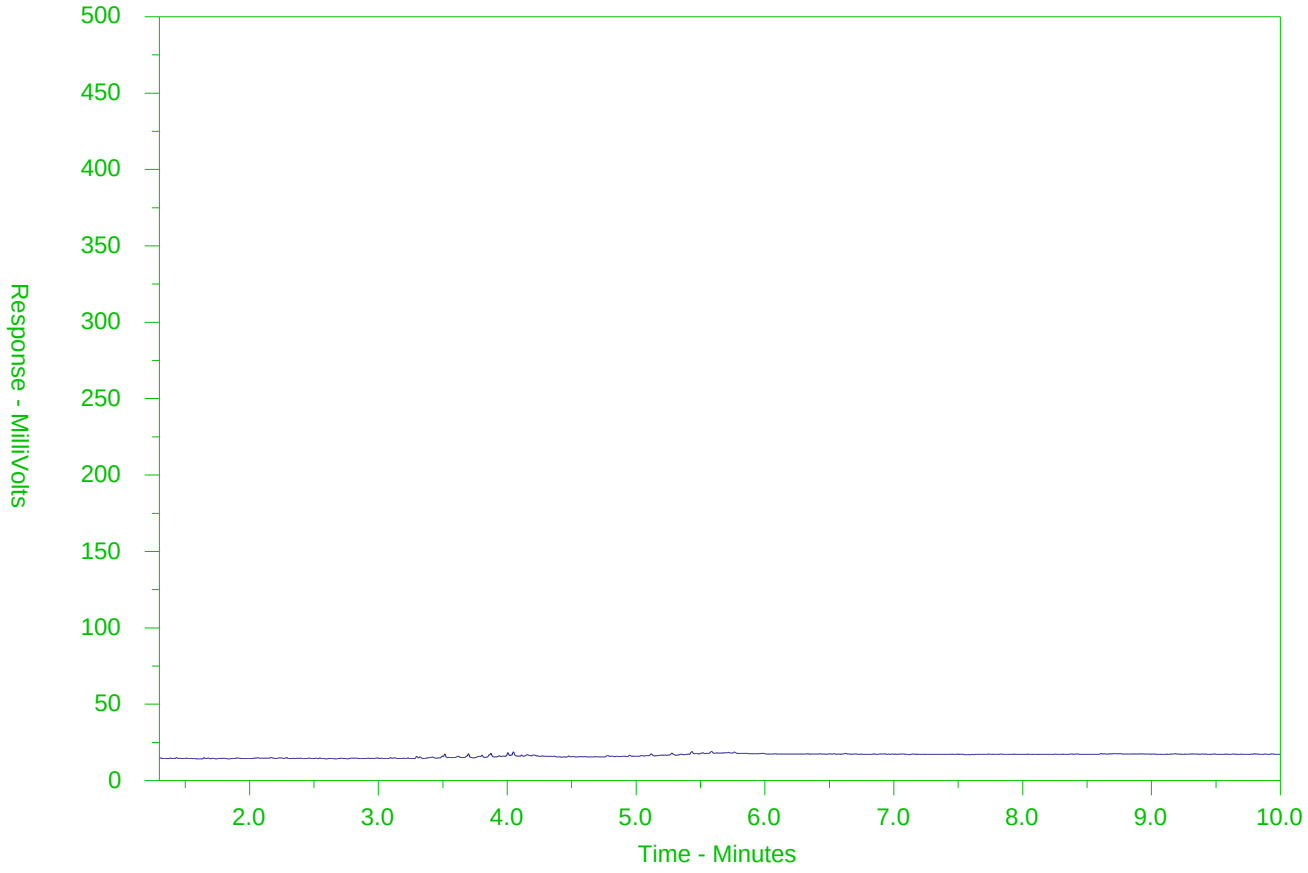
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2633658-16
Client Sample ID: EX21-21-109



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

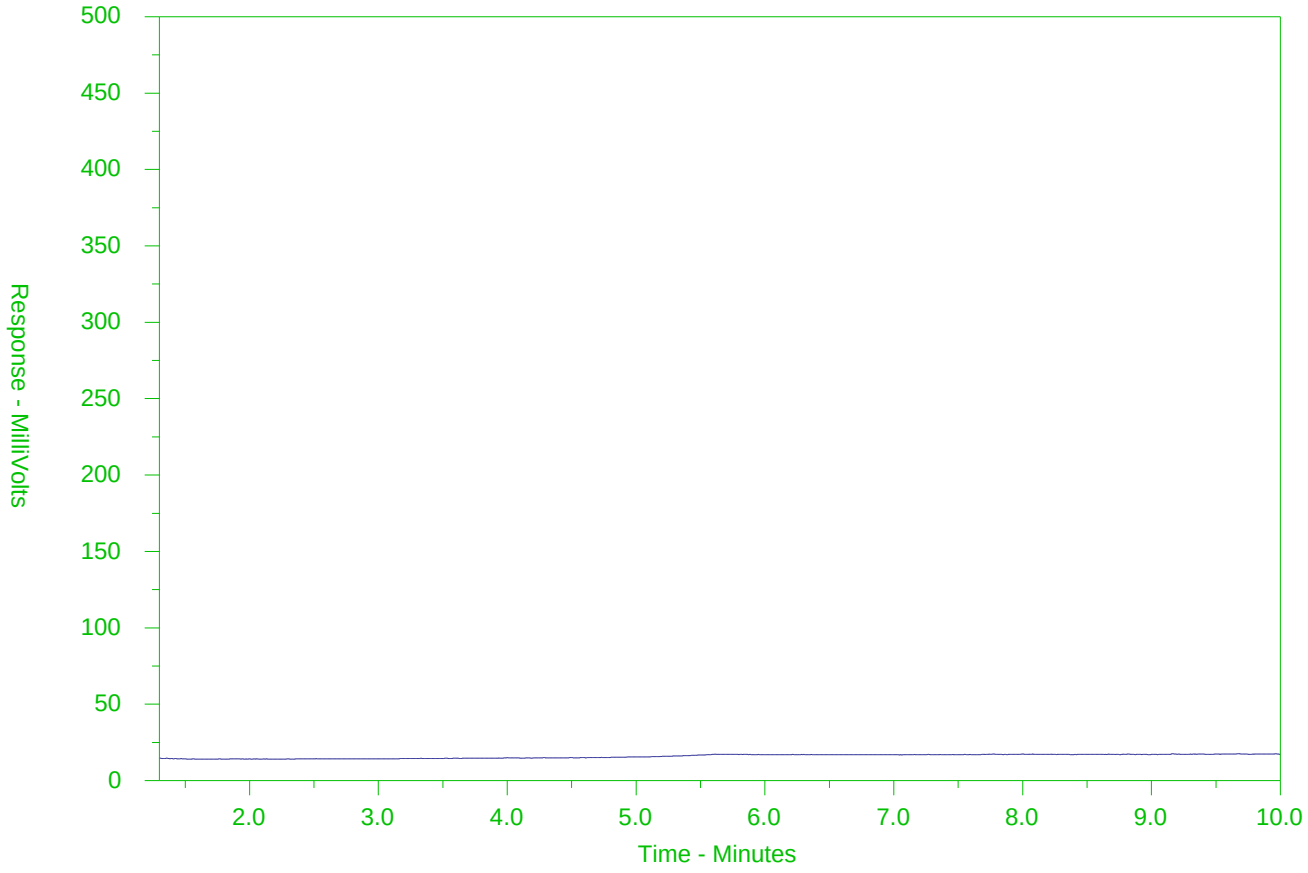
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2633658-17
Client Sample ID: EX21-21-110



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

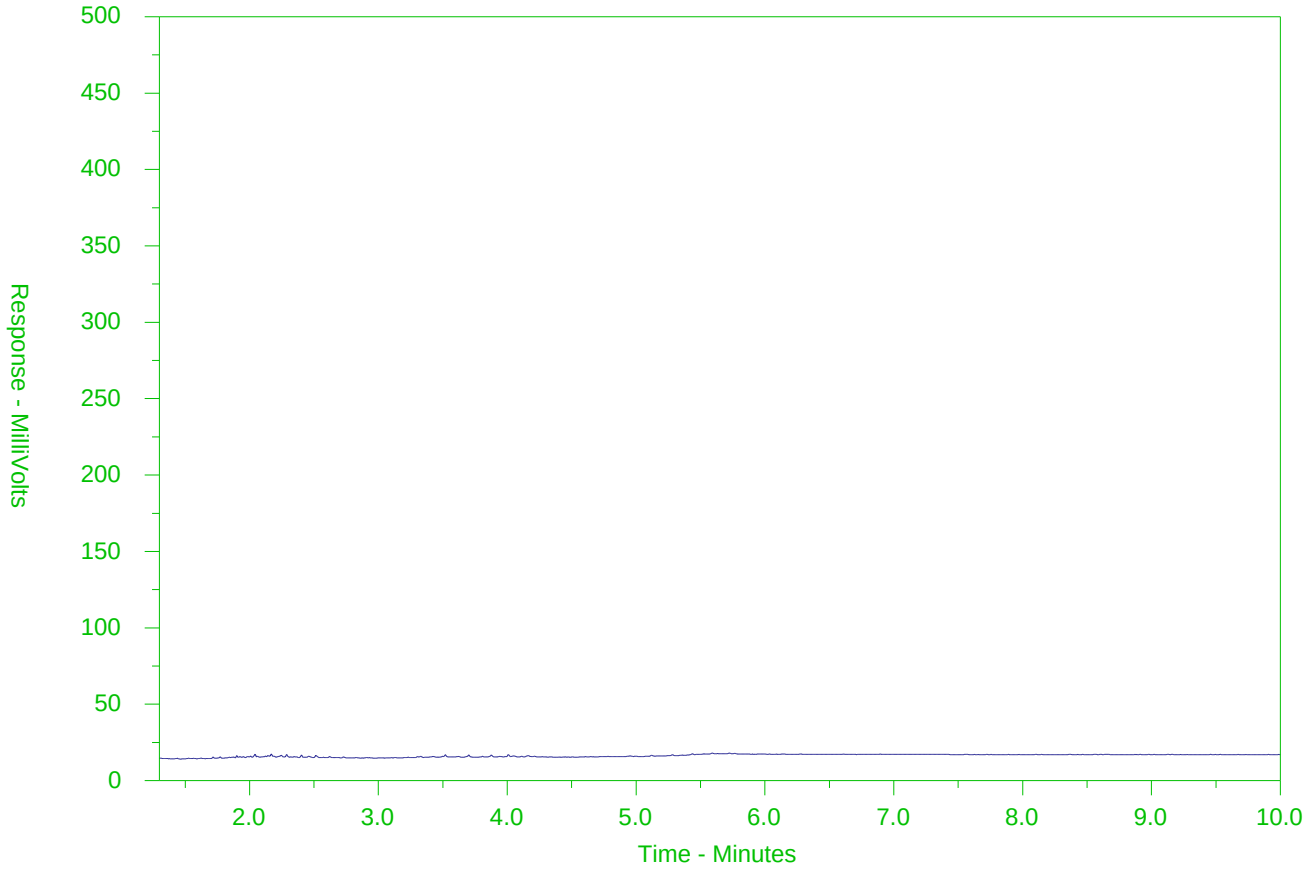
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2633658-18
Client Sample ID: EX21-21-111



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

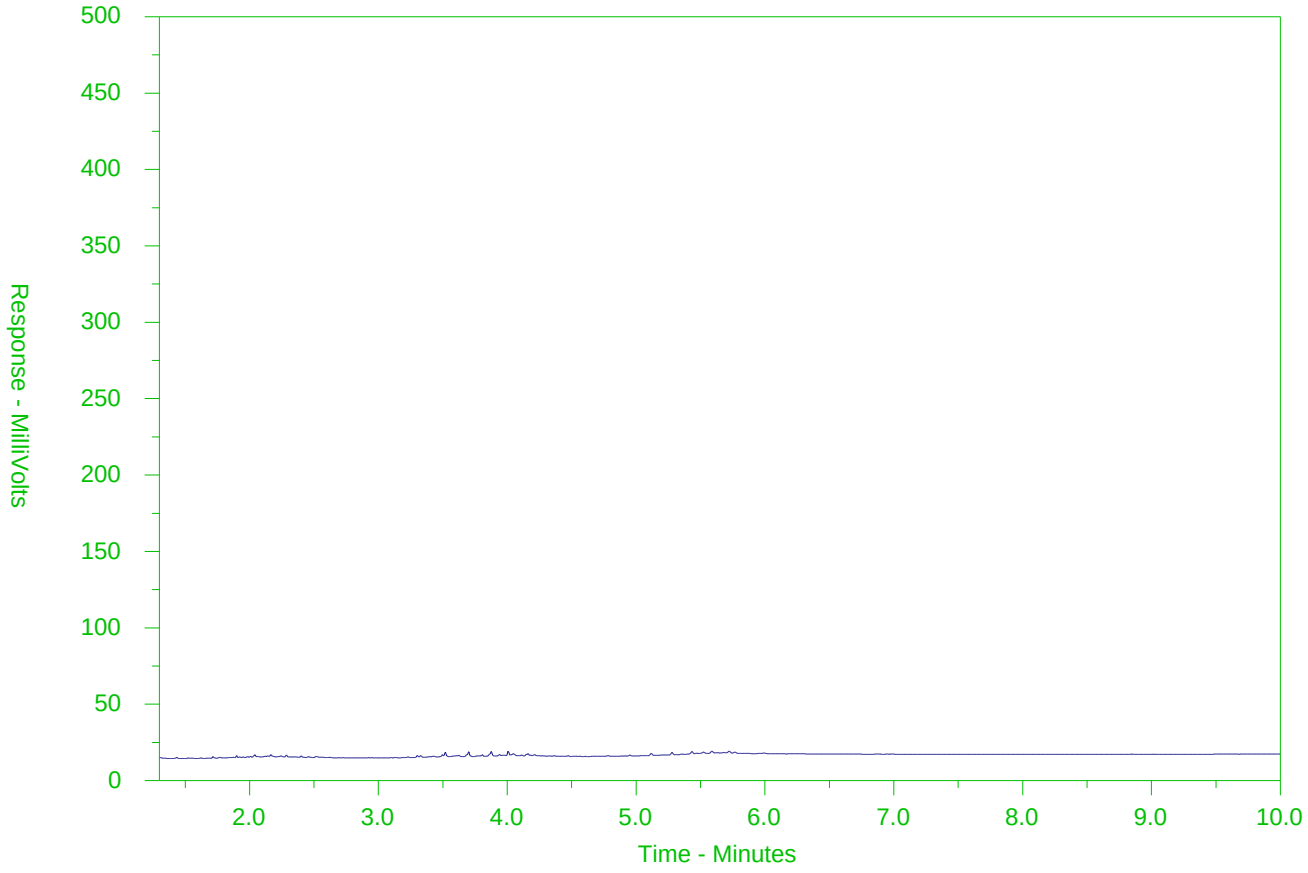
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2633658-19
Client Sample ID: EX21-21-112



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

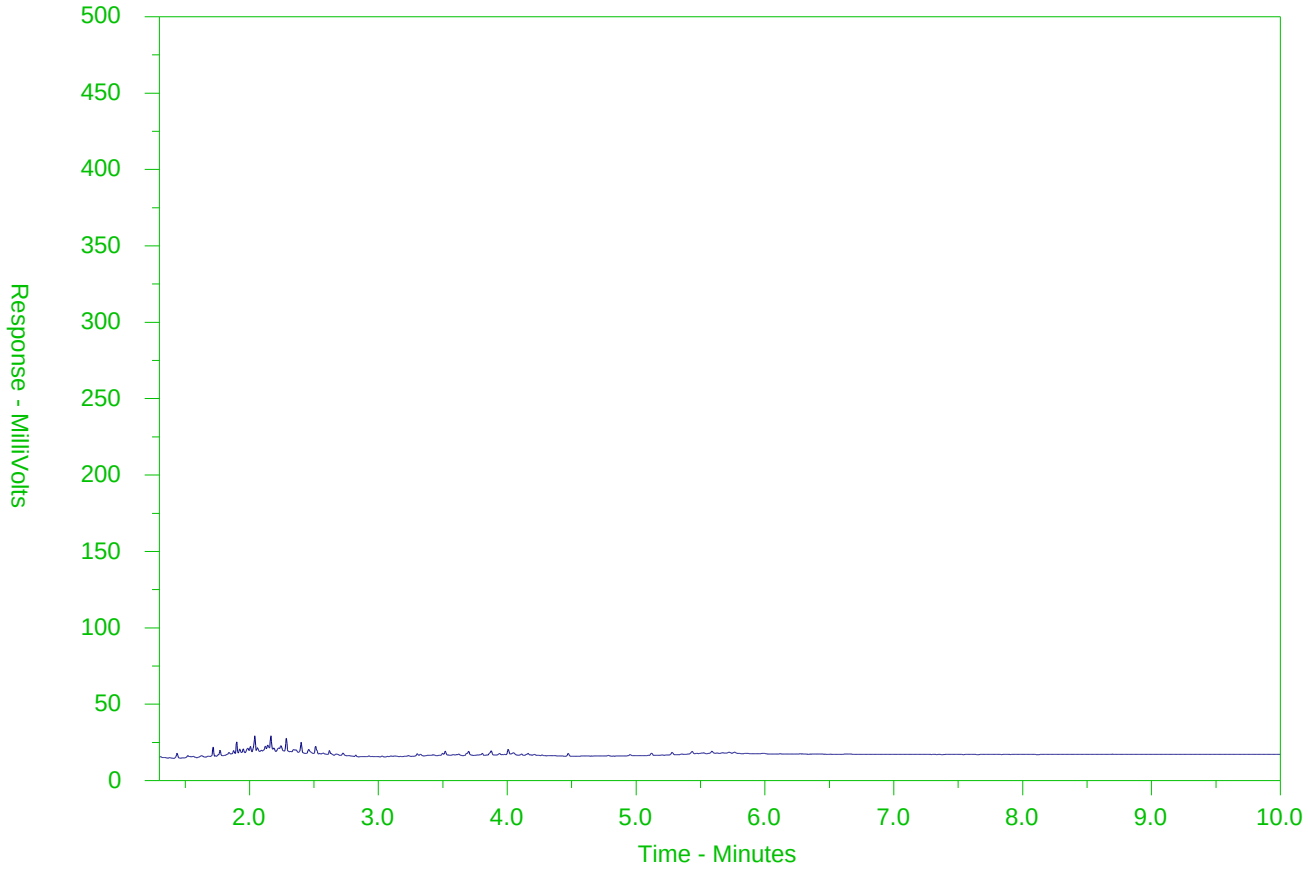
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2633658-20
Client Sample ID: EX21-21-113



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

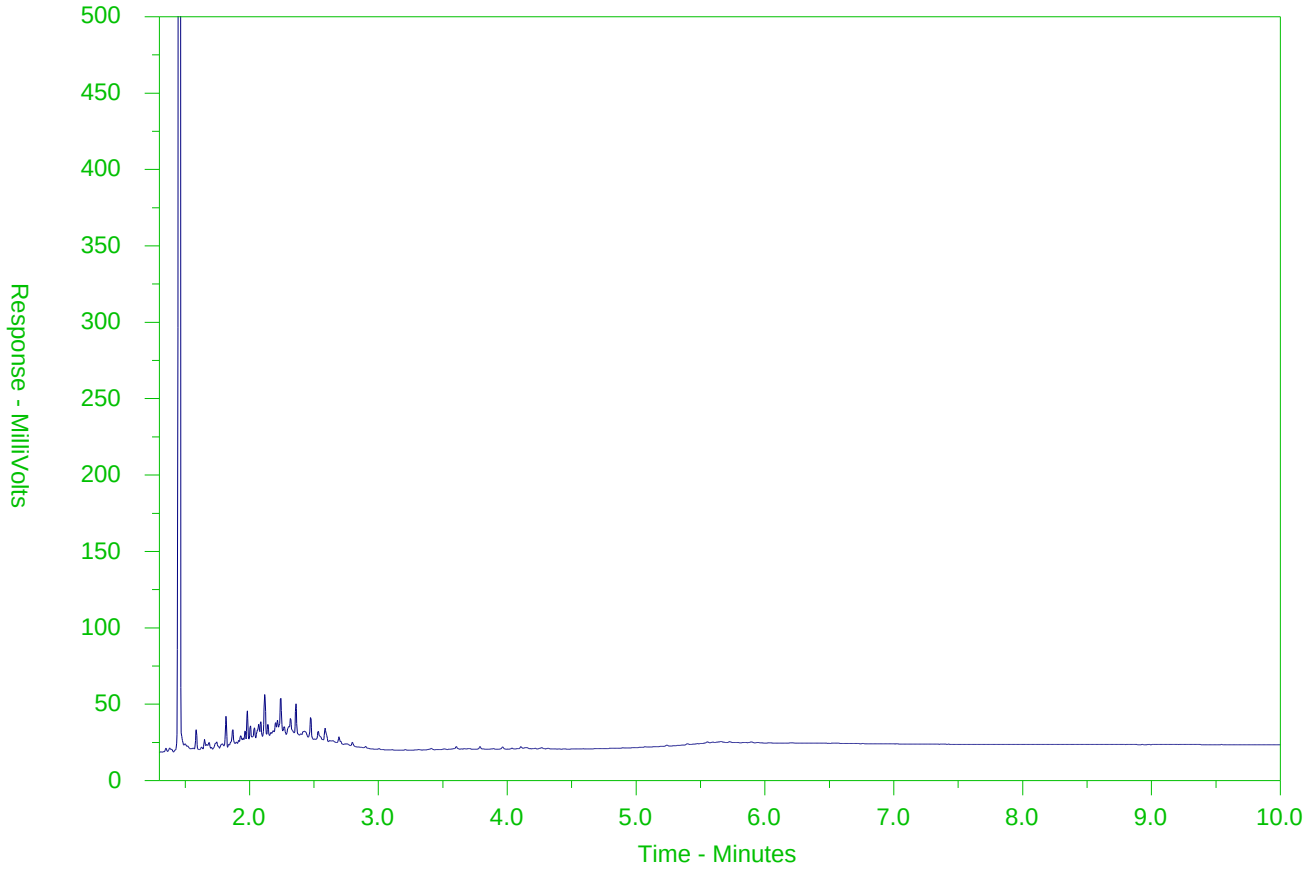
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2633658-21
Client Sample ID: EX21-21-114



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

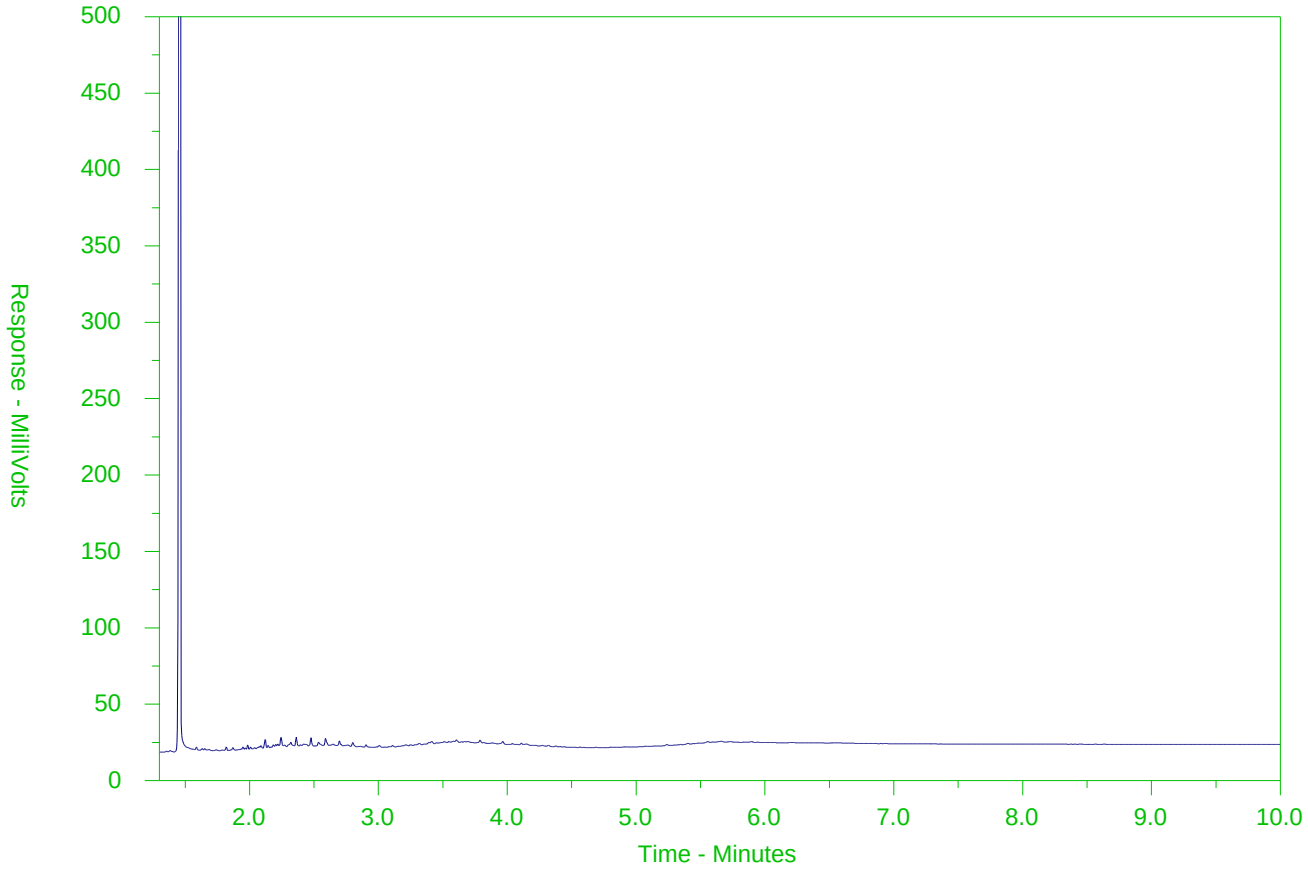
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2633658-22
Client Sample ID: EX21-21-64



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

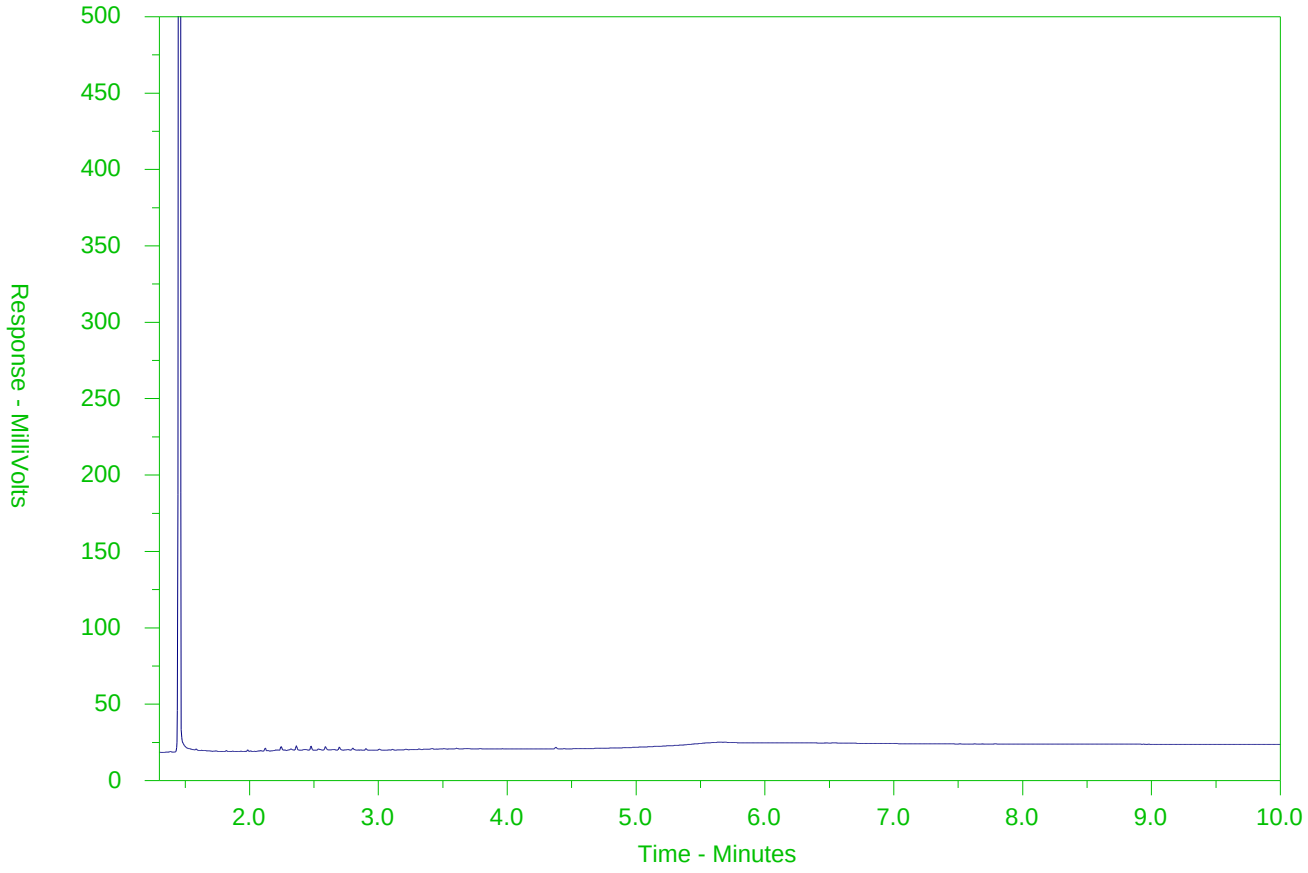
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2633658-23
Client Sample ID: EX21-21-115



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

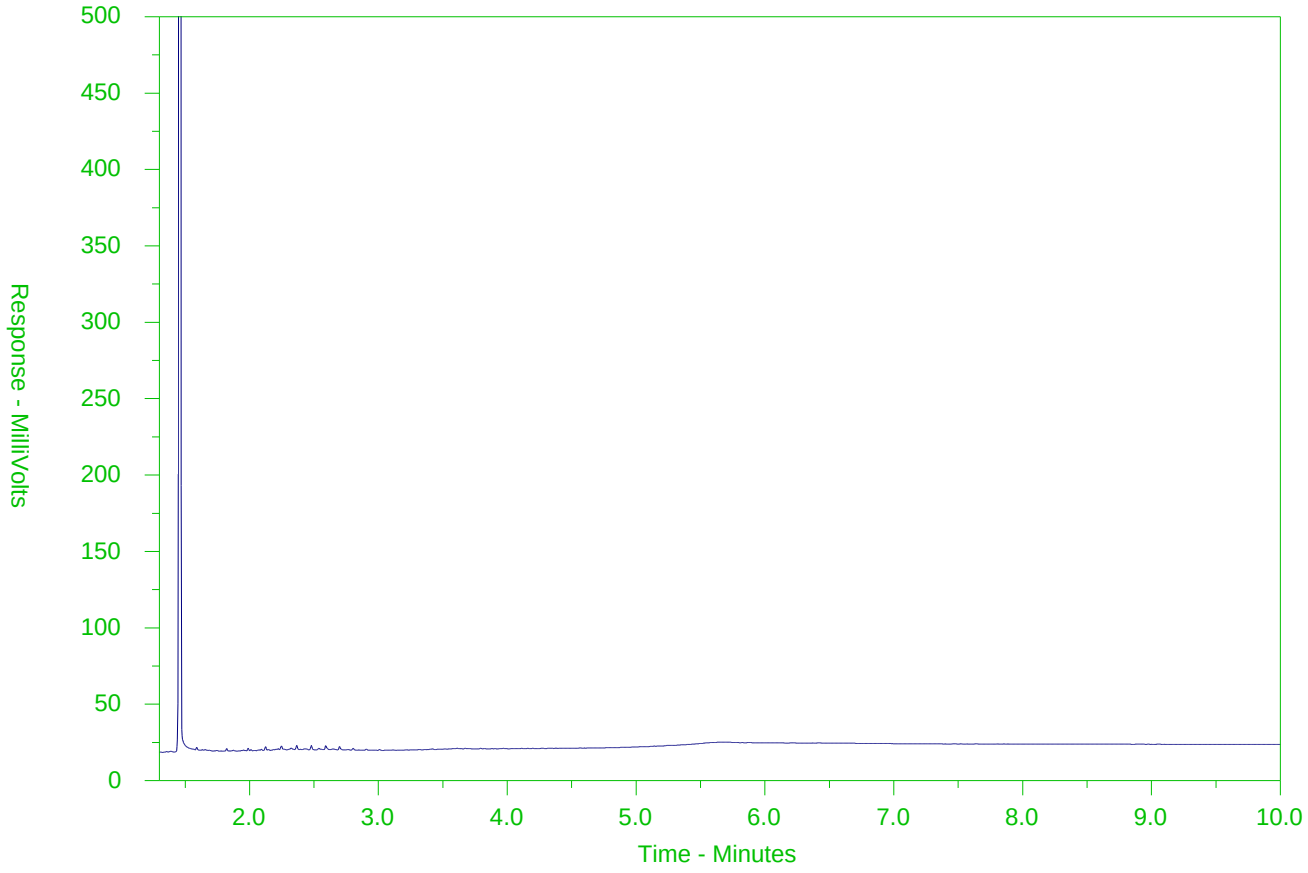
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2633658-24
Client Sample ID: EX21-21-116



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

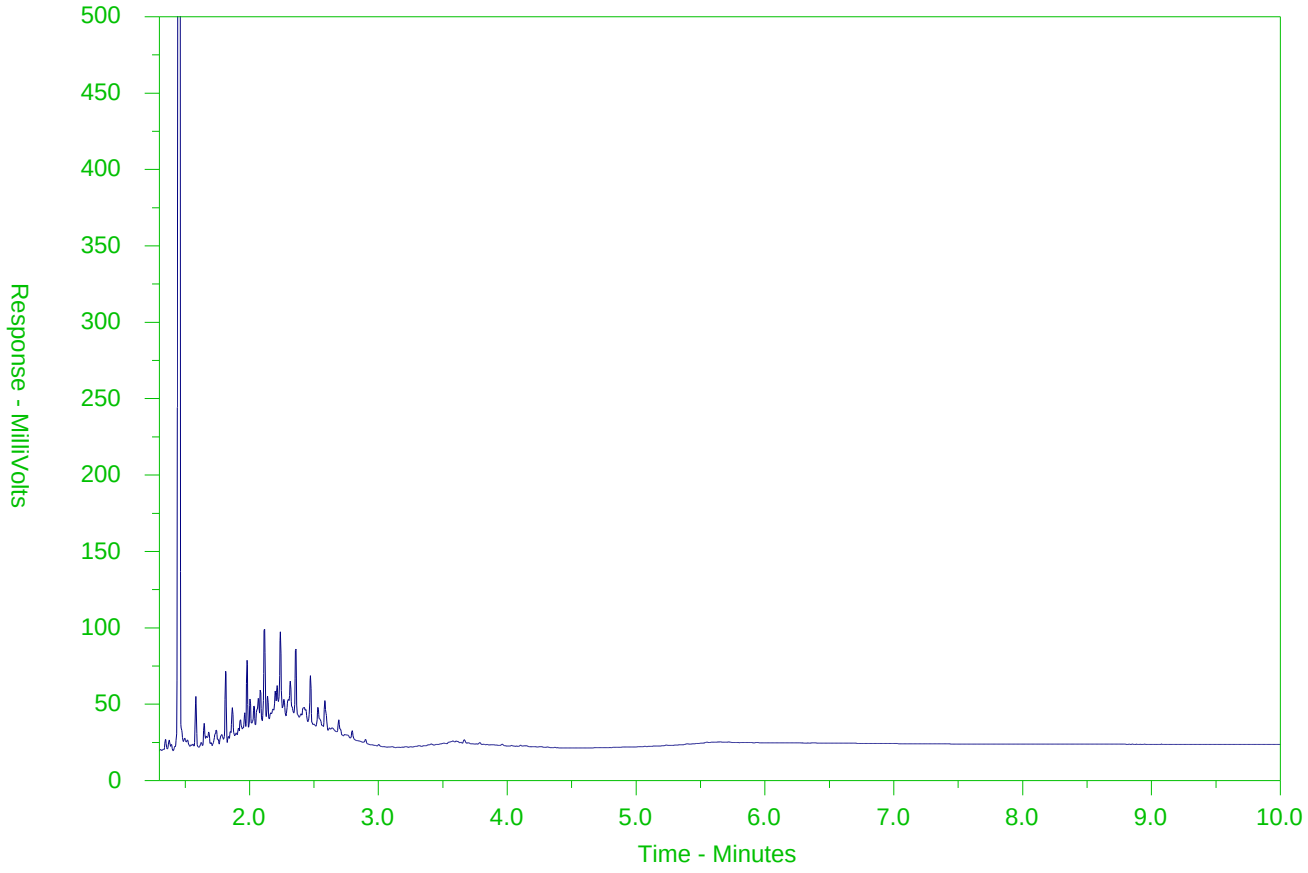
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2633658-25
Client Sample ID: EX21-21-117



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

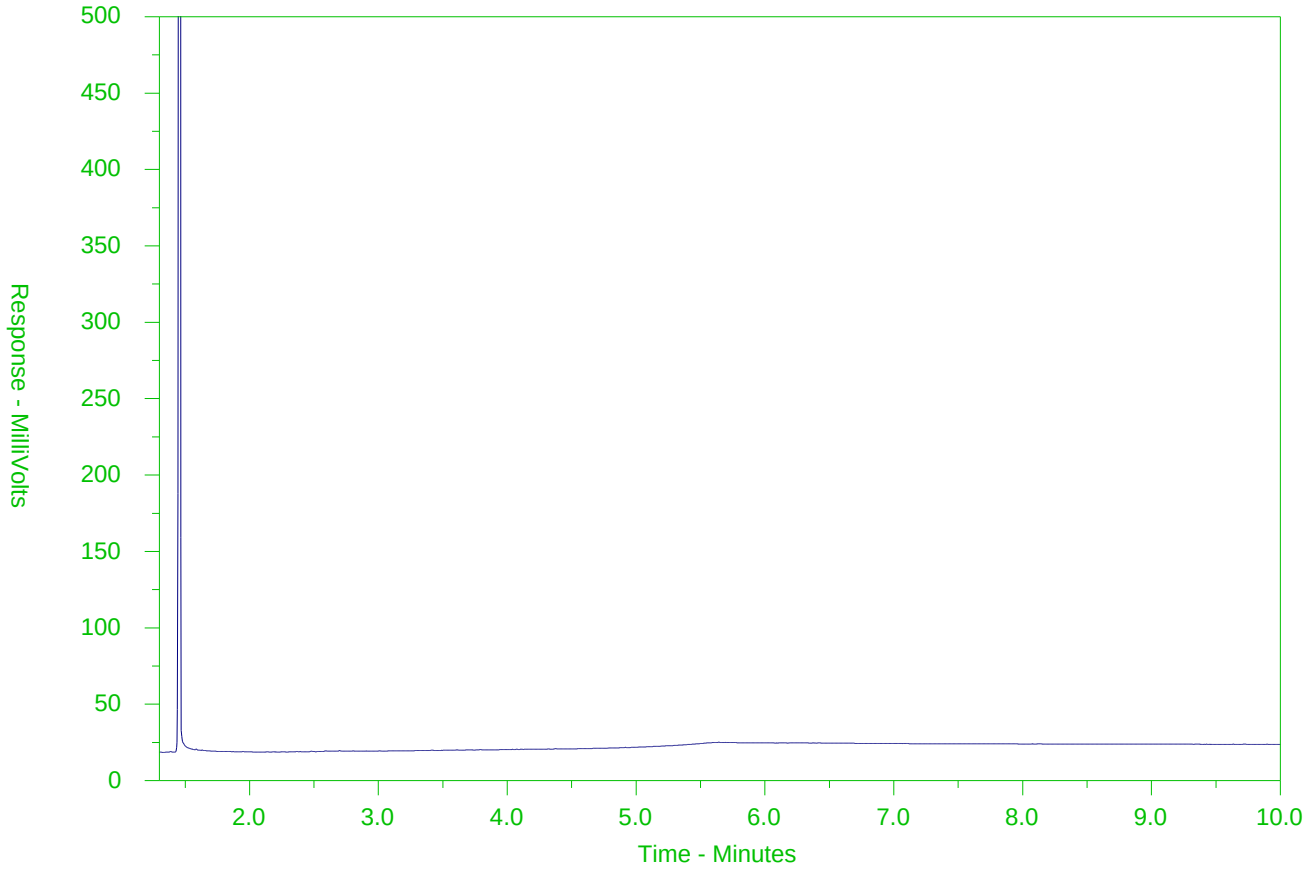
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2633658-26
Client Sample ID: EX21-21-118



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

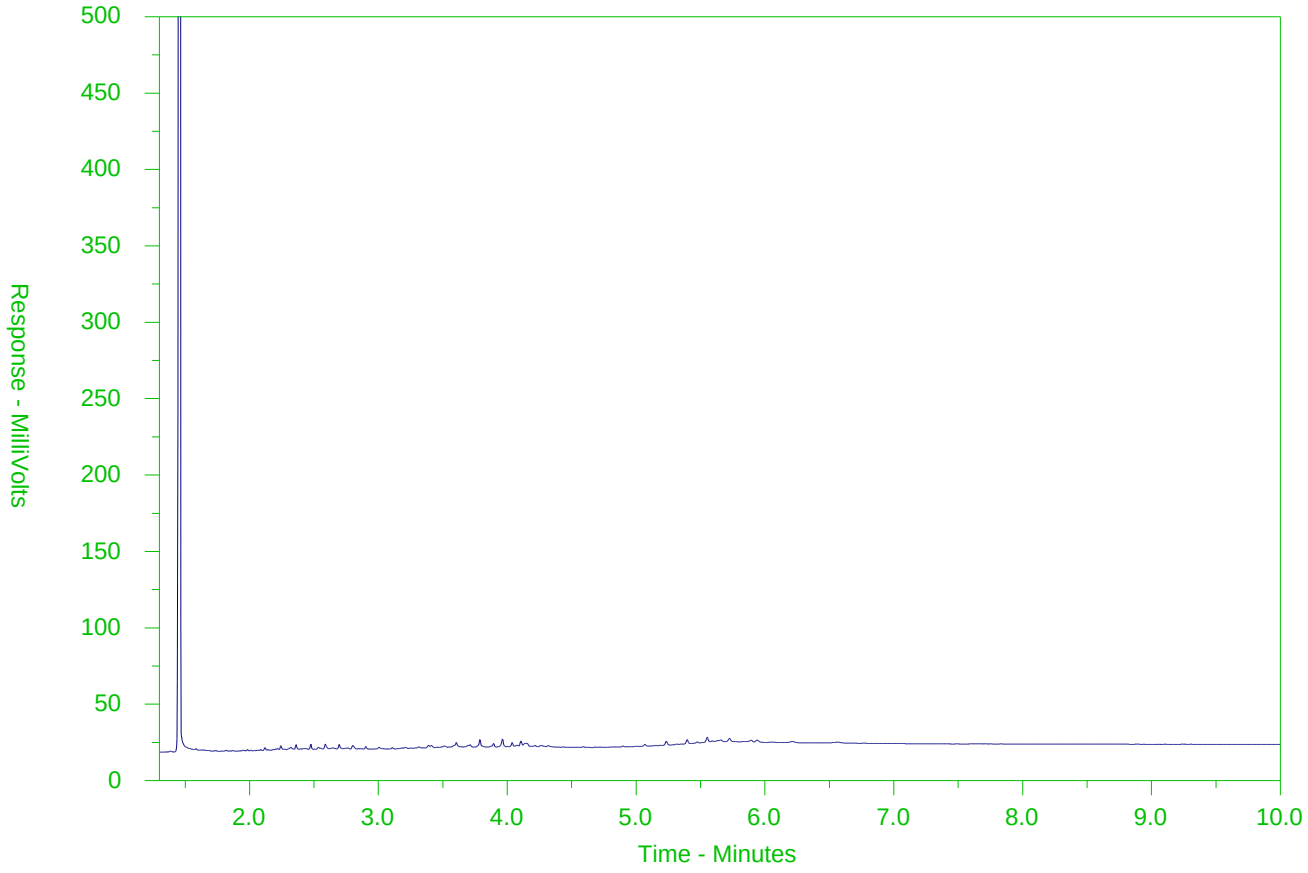
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2633658-27
Client Sample ID: EX21-21-119



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

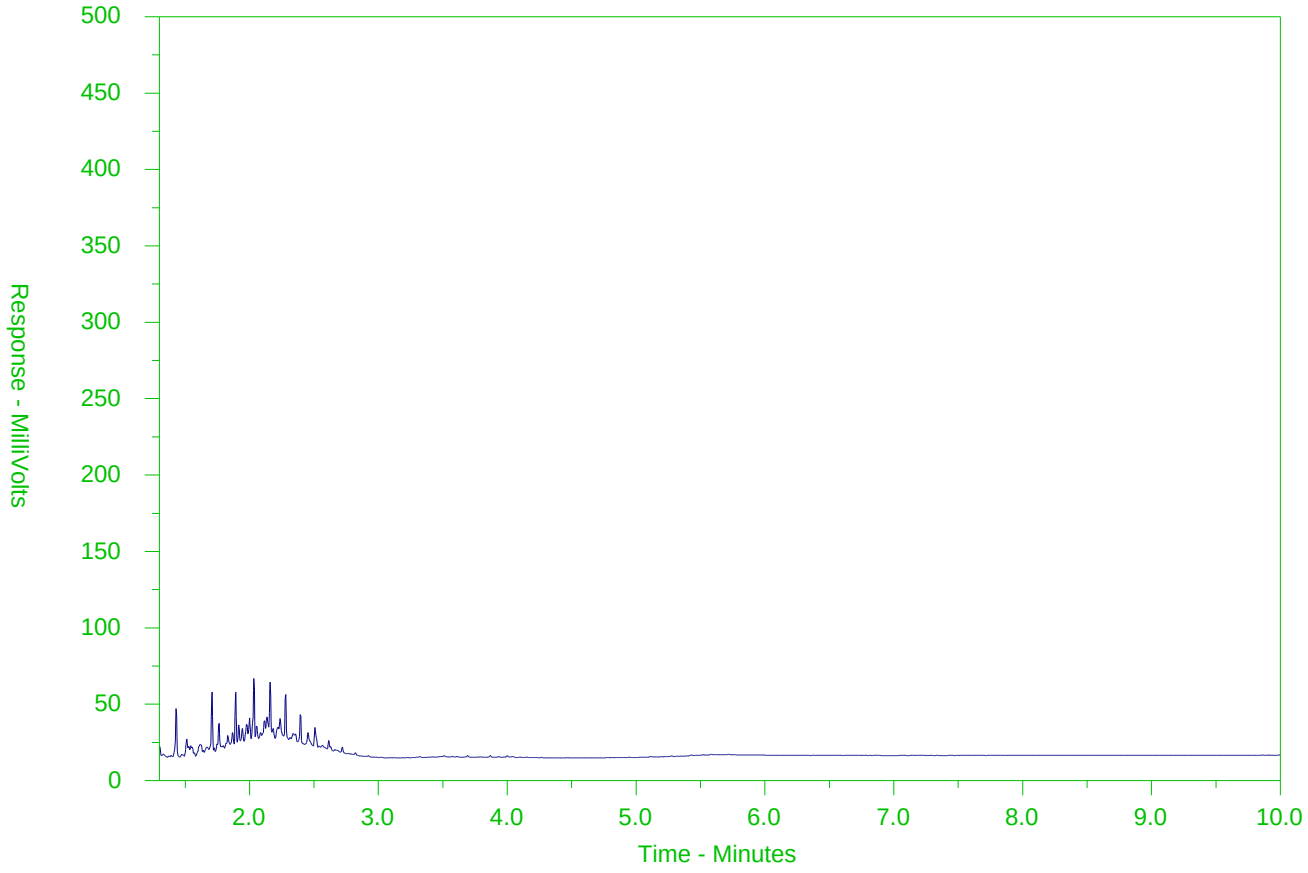
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2633658-28
Client Sample ID: EX21-21-120



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

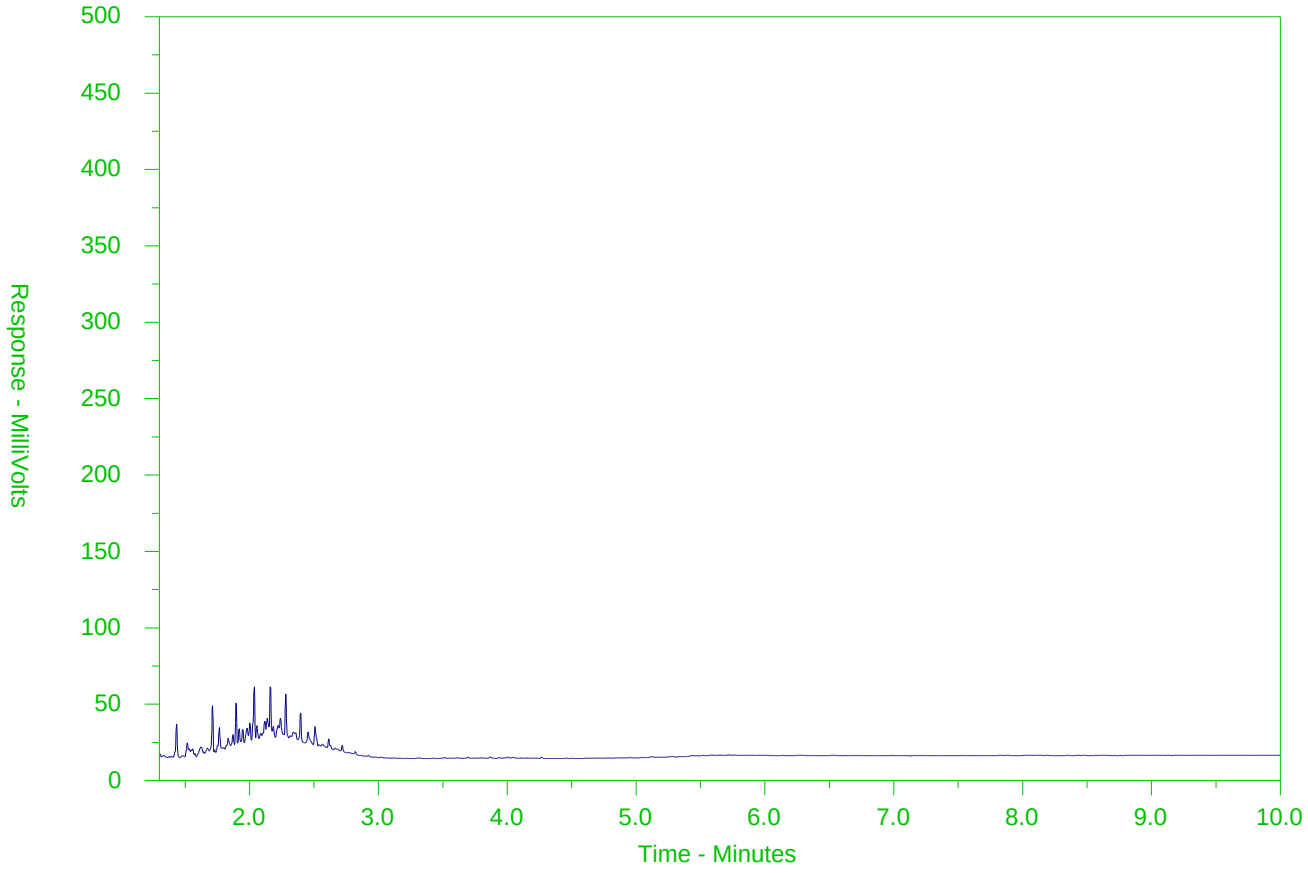
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2633658-29
Client Sample ID: EX21-21-121



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

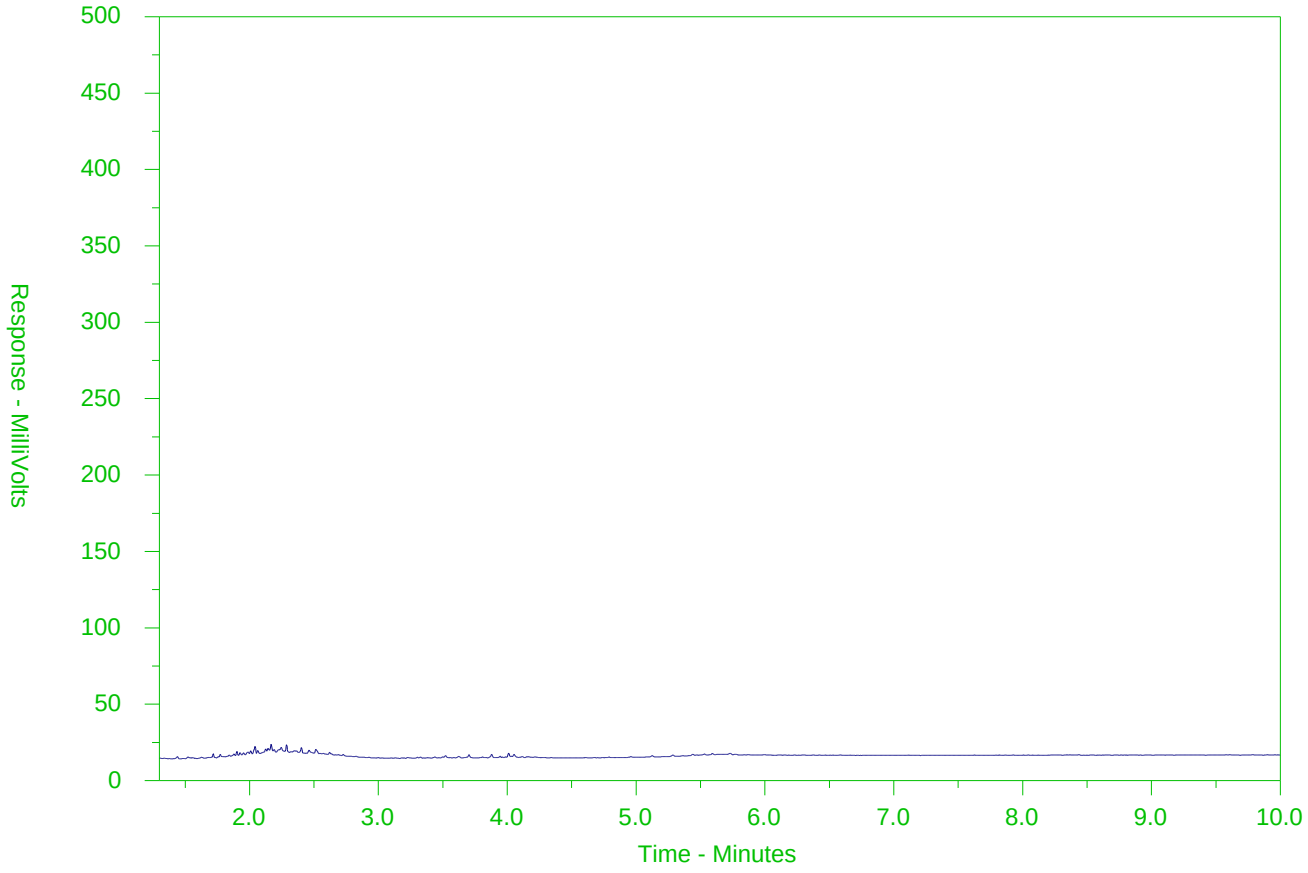
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2633658-30
Client Sample ID: EX21-21-122



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

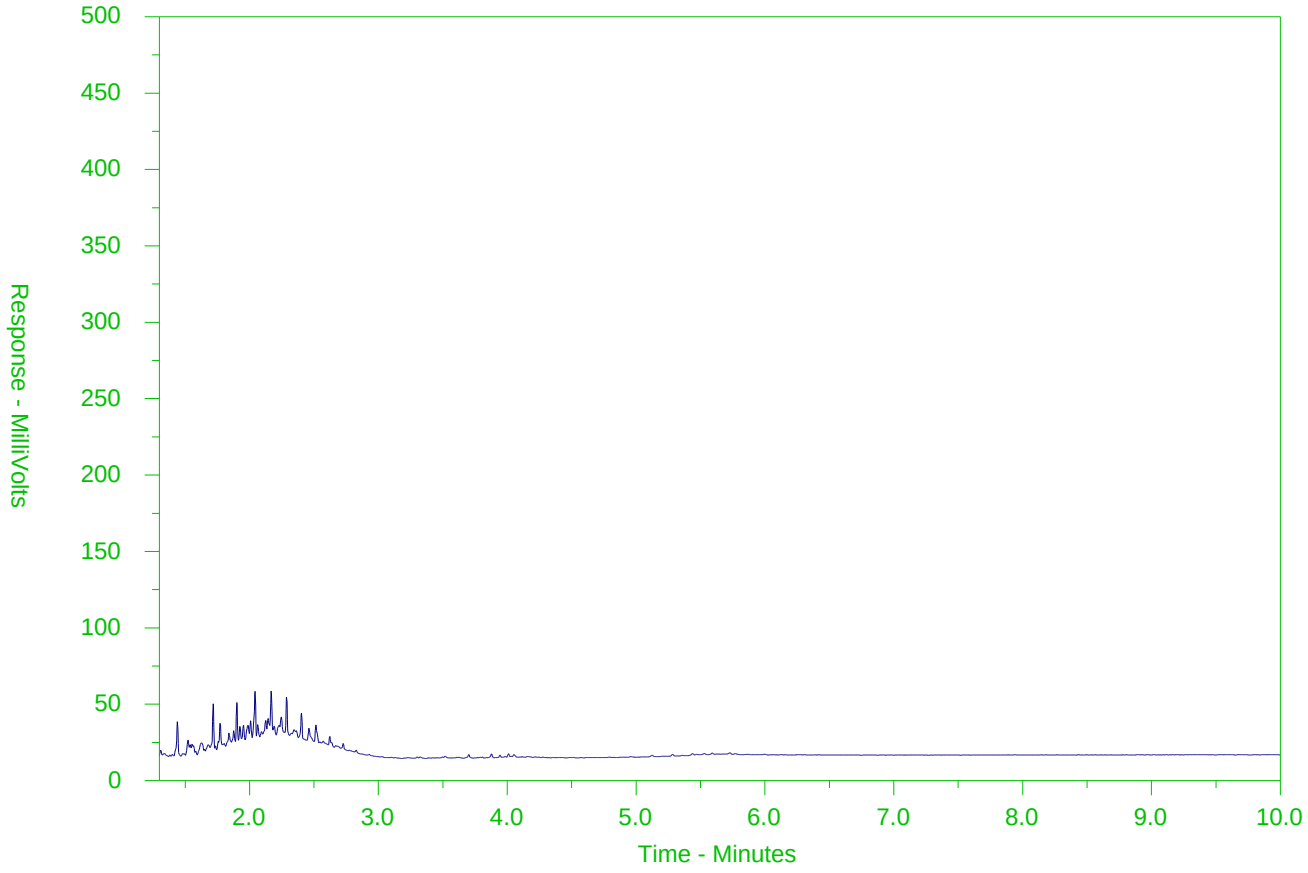
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2633658-31
Client Sample ID: EX21-21-123



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

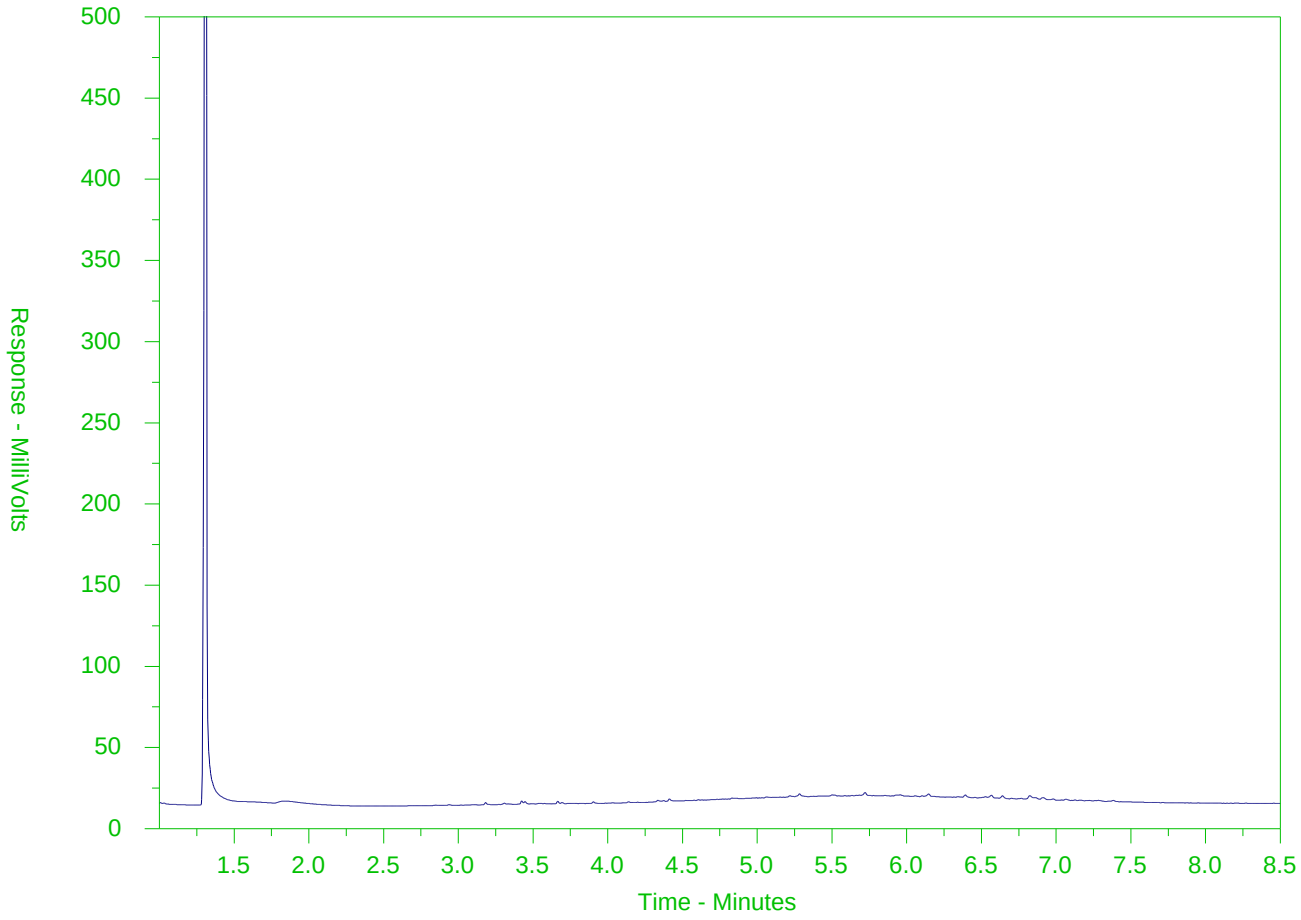
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

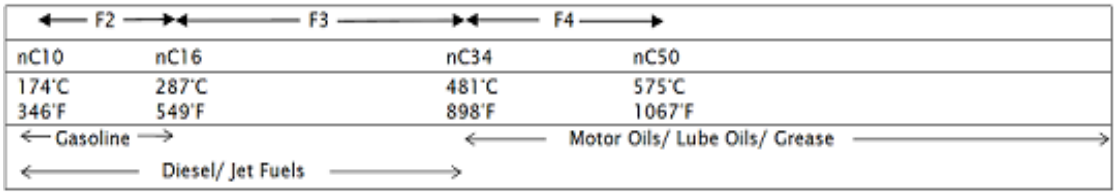
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2633658-32 RE
Client Sample ID: EX21-21-124





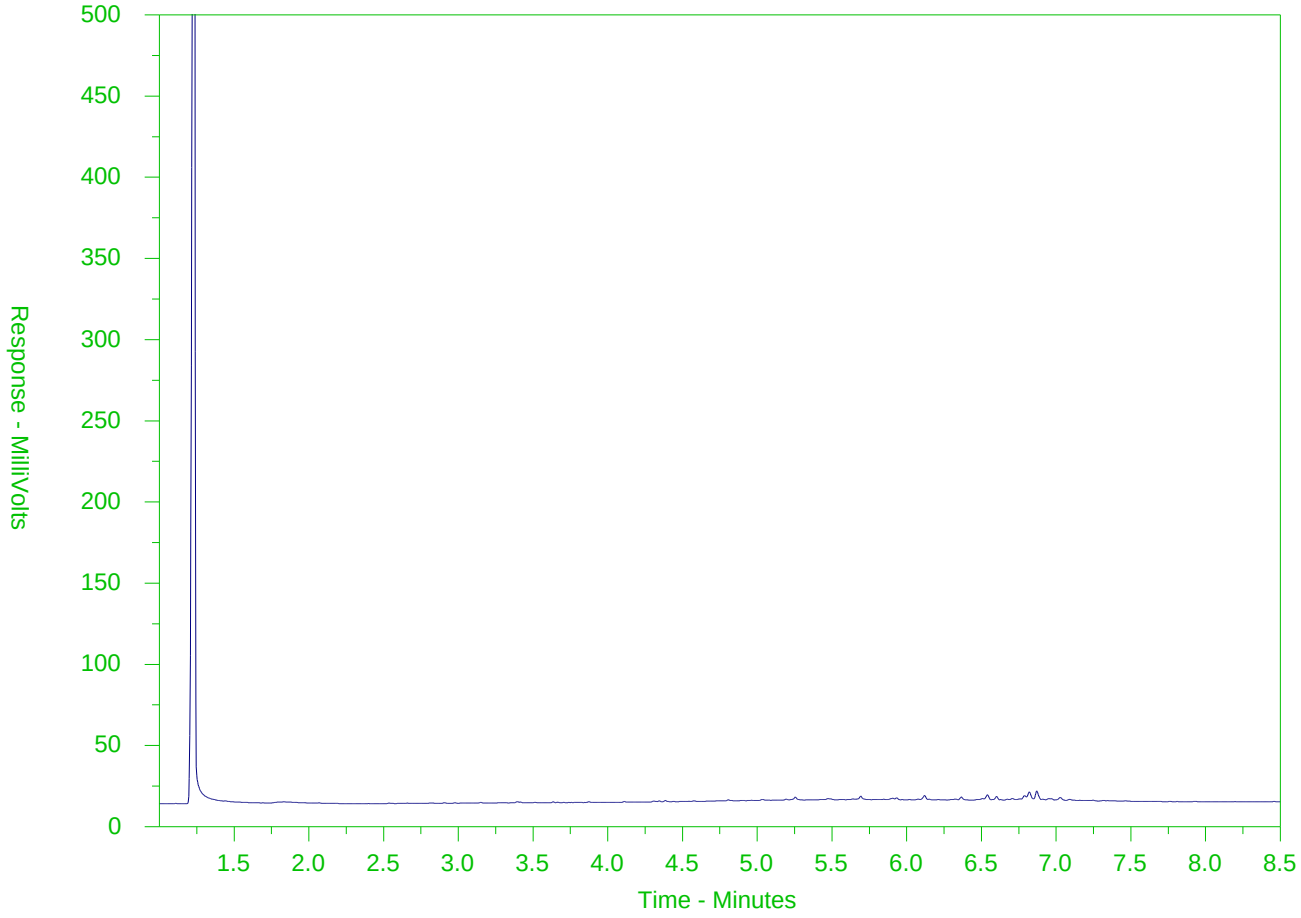
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

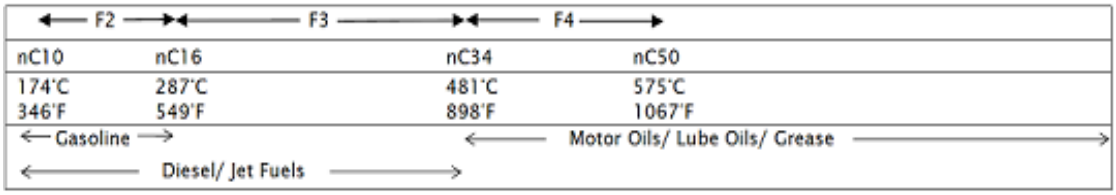
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2633658-33 RE
Client Sample ID: EX21-21-124D





The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

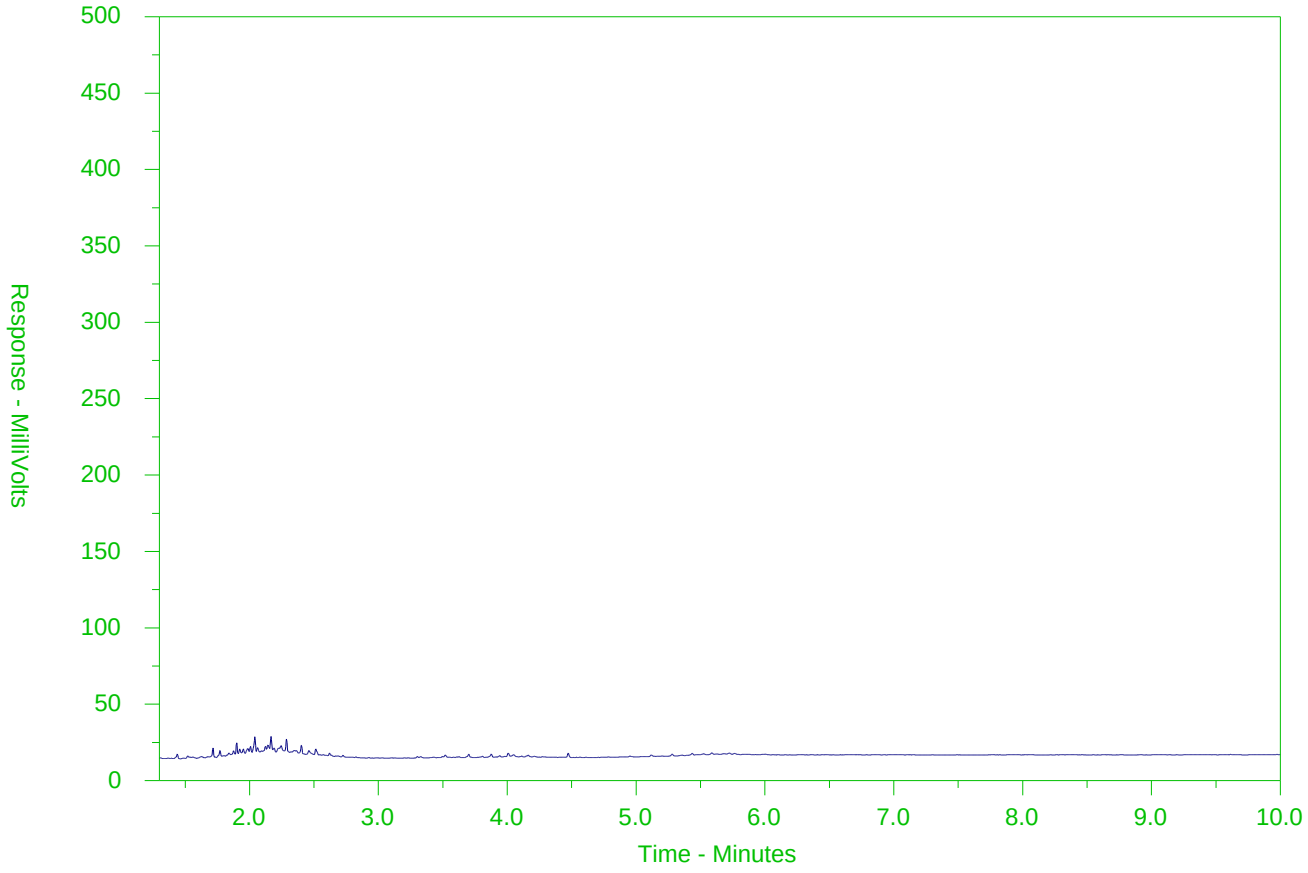
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2633658-34
Client Sample ID: EX21-21-113-D



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

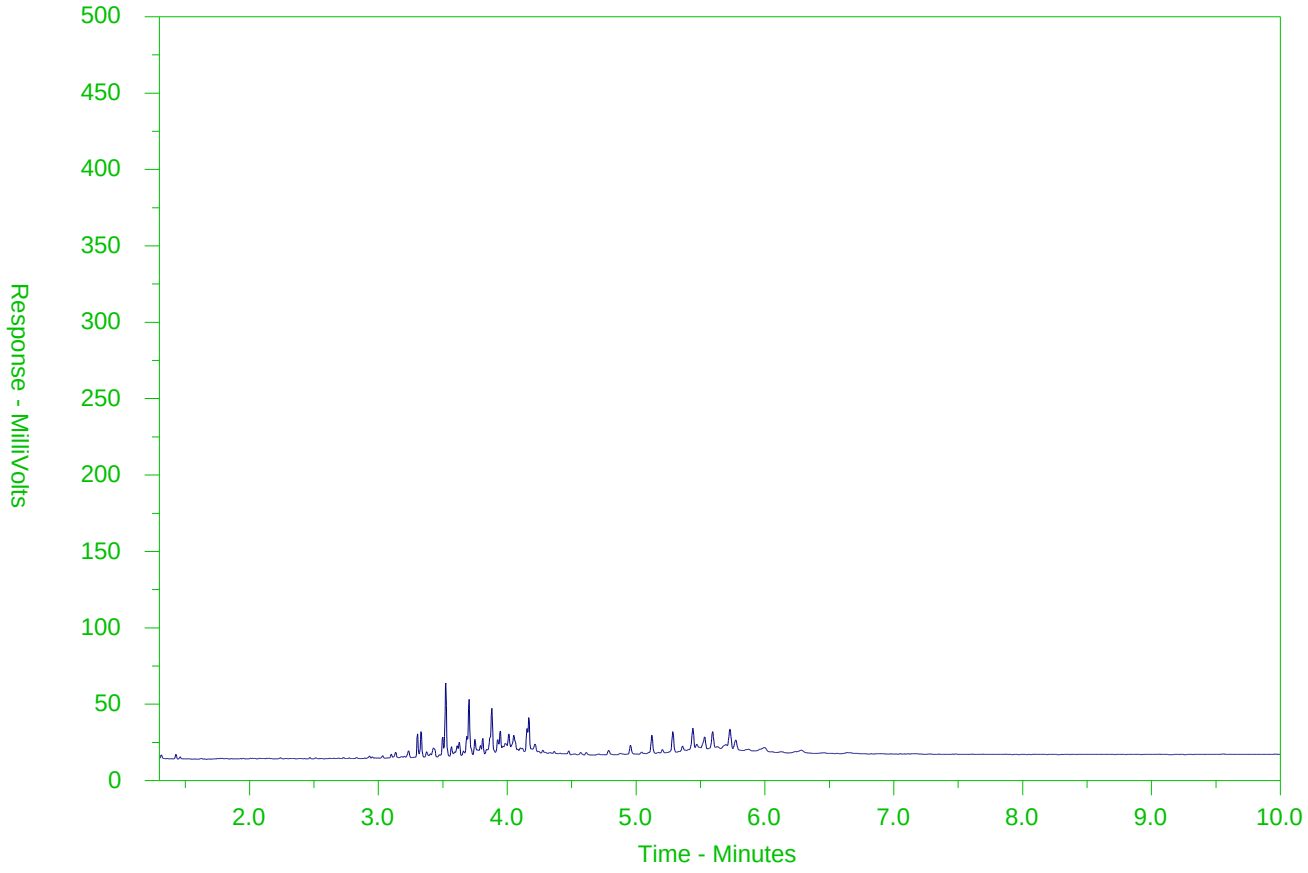
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2633658-35
Client Sample ID: EX21-21-21



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

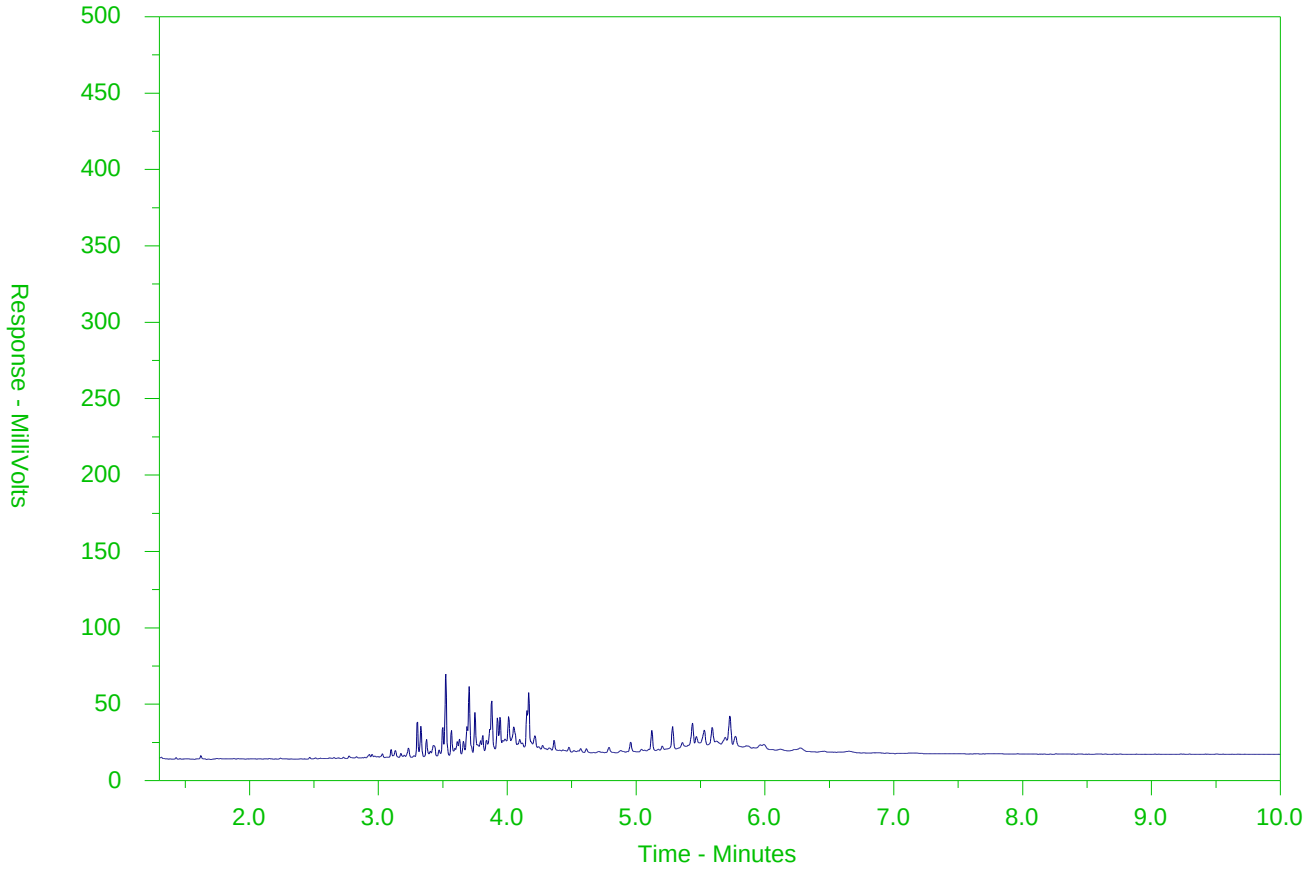
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2633658-36
Client Sample ID: EX21-21-21-D



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

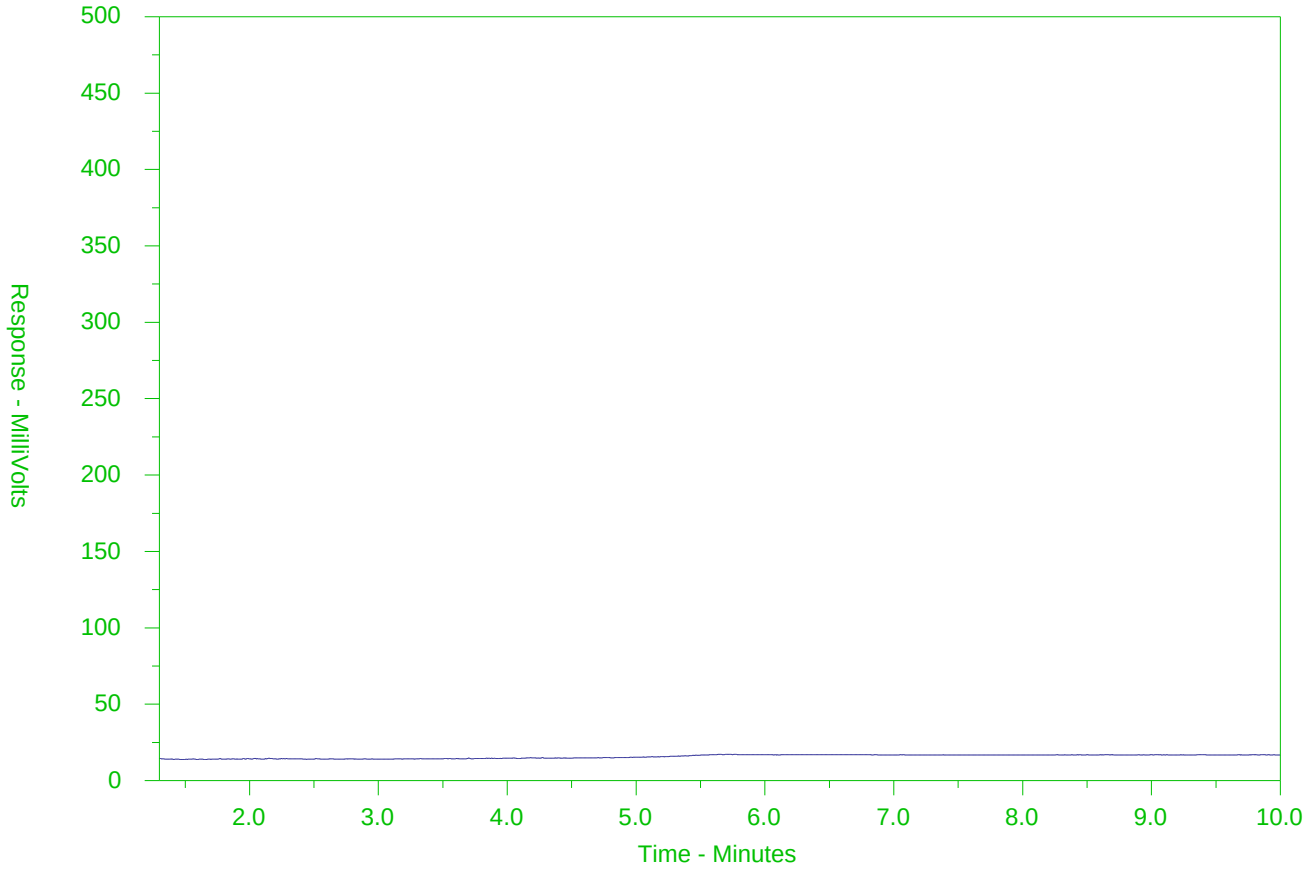
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2633658-37
Client Sample ID: EX21-21-20



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number:

Page 1 of 4

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)

Quality Control (QC) Report with Report ☑ YES ☐ NO

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: k.lewis@mandalayresources.com

Email 2: sfiddler@golder.com

Email 3: jmusijowski@golder.com

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax:

Email 2:

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☑ | Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #: Q80711

Job #:

PO / AFE:

LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: | PO#

Major/Minor Code: | Routing Code:

Requisitioner:

Location:

ALS Lab Work Order # (lab use only): L2633658

ALS Contact: Oliver Gregg

Sampler: JT/BR

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	Lead	Arsenic	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
1	EX20-21-15	27-Aug-21		Soil	3	/				
2	EX9-21-128				3	/				
3	EX21-21-70				3	/				
4	EX21-21-81				3	/				
5	EX21-21-84				3	/				
6	EX21-21-86				3	/				
7	EX21-21-87				3	/				
8	EX21-21-89				3	/				
9	EX21-21-91				3	/				
10	EX21-21-93				3	/				
11	EX21-21-95				3	/				
12	EX21-21-98				3	/				

L2633658-COFC

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human consumption/ use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ | SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ | Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
6.8							

SHIPMENT RELEASE (client use)

Released by:	Date:	Time:
Jonelle Thick	Aug 30/21	1500

INITIAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:
MT	31-Aug-21	9:15

FINAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number:

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report ☑ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax: k.lewis@mandalayresources.com
Email 2: sfiddler@golder.com
Email 3: jmusijowski@golder.com

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax:
Email 2:

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☑ | Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #: Q80711
Job #:
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: | PO#
Major/Minor Code: | Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only):

ALS Contact: Oliver Gregg | Sampler: JT/BR

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	Lead	Arsenic	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
13	EX21-21-102	27-Aug-21		Soil	3	/				
14	EX21-21-103	"		"	3	/				
15	EX21-21-105	"		"	3	/				
16	EX21-21-109	"		"	3	/				
17	EX21-21-110	"		"	3	/				
18	EX21-21-111	"		"	3	/				
19	EX21-21-112	"		"	3	/				
20	EX21-21-113	"		"	3	/				
21	EX21-21-114	↓		"	3	/				
22	EX21-21-[illegible]	28-Aug-21		"	3	/				
23	EX21-21-115	↓		"	3	/				
24	EX21-21-116	↓		↓	3	/				

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO
Are samples for human consumption/ use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ | SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☐ | Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			

SHIPMENT RELEASE (client use)

Released by:	Date:	Time:
Jaselle Track / Jaselle Track	Aug 30/21	1500

INITIAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:

FINAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

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1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

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Chain of Custody (COC) / Analytical Request Form

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COC Number:

Page 3 of 4

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)

Quality Control (QC) Report with Report ☑ YES ☐ NO

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: k.lewis@mandalayresources.com

Email 2: sfiddler@golder.com

Email 3: jmusijowski@golder.com

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax:

Email 2:

Project Information

ALS Account # / Quote #: Q80711

Job #:

PO / AFE:

LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#:

Major/Minor Code: Routing Code:

Requisitioner:

Location:

ALS Lab Work Order # (lab use only):

ALS Contact: Oliver Gregg Sampler: JT / BR

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days)
- 4 day [P4-20%] ☐
- 3 day [P3-25%] ☐
- 2 day [P2-50%] ☐

EMERGENCY
- 1 Business day [E - 100%] ☑
- Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	Lead	Arsenic	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
25	EX21-21-117	28-Aug-21		Soil	3	✓				
26	EX21-21-118				3	✓				
27	EX21-21-119				3	✓				
28	EX21-21-120				3	✓				
29	EX21-21-121				3	✓				
30	EX21-21-122				3	✓				
31	EX21-21-123				3	✓				
32	EX21-21-124	29-Aug-21			3	✓				
33	EX21-21-124D				3	✓				
34	~~EX21-21-113~~ EX21-21-113-D	Aug 27/21			3	✓				
35	EX21-21-21				3	✓				
36	EX21-21-21-D				2	✓				

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human consumption/ use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			

SHIPMENT RELEASE (client use)

Released by:	Date:	Time:
Jamille Trudel Fiddler	Aug 30/21	1521

INITIAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:

FINAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

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Canada Toll Free: 1 800 668 9878

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COC Number:

Page 4 of 4

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report ☑ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax k.lewis@mandalayresources.com
Email 2 sfiddler@golder.com
Email 3 jmusijowski@golder.com

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax
Email 2

Project Information

ALS Account # / Quote #: Q80711
Job #:
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only):

ALS Contact: Oliver Gregg Sampler:

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ 3 day [P3-25%] ☐ 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☑ Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
37.	EX21-21-20	Aug 27/21		Soil	3	✓		

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human consumption/ use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			

SHIPMENT RELEASE (client use)

Released by:	Date:	Time:
Jamelle Tkachuk	Aug 30/21	1500

INITIAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:

FINAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

GOLDER ASSOCIATES LTD
ATTN: Steven Fiddler
16820 107 Ave NW
Edmonton AB T5P 4C3

Date Received: 08-SEP-21
Report Date: 11-SEP-21 18:22 (MT)
Version: FINAL

Client Phone: 780-483-3499

Certificate of Analysis

Lab Work Order #: L2637321

Project P.O. #: NOT SUBMITTED
Job Reference: 20446521
C of C Numbers:
Legal Site Desc: LUPIN MINE

Harman Bhullar
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2637321-1 EX15-21-11							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582658
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582658
Toluene	<0.014		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582658
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582658
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582658
Surrogate: 1,4-Difluorobenzene	82.2		70-130	%	10-SEP-21	11-SEP-21	R5582658
Surrogate: 4-Bromofluorobenzene	80.6		70-130	%	10-SEP-21	11-SEP-21	R5582658
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	100.5		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		11-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	89.8		70-130	%	10-SEP-21	11-SEP-21	R5582667
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	4.74		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	3.02		0.25	%		10-SEP-21	R5582552
L2637321-2 EX15-21-25							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582658
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582658
Toluene	0.405		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582658
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582658
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582658
Surrogate: 1,4-Difluorobenzene	99.6		70-130	%	10-SEP-21	11-SEP-21	R5582658
Surrogate: 4-Bromofluorobenzene	97.5		70-130	%	10-SEP-21	11-SEP-21	R5582658
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	107.9		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	121		50	mg/kg		11-SEP-21	
F4 (C34-C50)	118		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	239		50	mg/kg		11-SEP-21	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2637321-2 EX15-21-25							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	92.3		70-130	%	10-SEP-21	11-SEP-21	R5582667
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	9.86		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	3.65		0.25	%		10-SEP-21	R5582552
L2637321-3 EX15-21-29							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582658
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582658
Toluene	<0.014		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582658
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582658
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582658
Surrogate: 1,4-Difluorobenzene	86.7		70-130	%	10-SEP-21	11-SEP-21	R5582658
Surrogate: 4-Bromofluorobenzene	88.0		70-130	%	10-SEP-21	11-SEP-21	R5582658
Note: weighed from jar							
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	109.4		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		11-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	71.6		70-130	%	10-SEP-21	11-SEP-21	R5582667
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	6.43		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	3.24		0.25	%		10-SEP-21	R5582552
L2637321-4 EX15-21-30							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582658
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582658
Toluene	<0.014		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582658
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582658
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582658

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2637321-4 EX15-21-30							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX and Styrene							
Surrogate: 1,4-Difluorobenzene	80.7		70-130	%	10-SEP-21	11-SEP-21	R5582658
Surrogate: 4-Bromofluorobenzene	78.1		70-130	%	10-SEP-21	11-SEP-21	R5582658
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	100.5		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		11-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	83.5		70-130	%	10-SEP-21	11-SEP-21	R5582667
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	4.17		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	3.29		0.25	%		10-SEP-21	R5582552
L2637321-5 EX15-21-45							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582658
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582658
Toluene	<0.014		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582658
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582658
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582658
Surrogate: 1,4-Difluorobenzene	85.5		70-130	%	10-SEP-21	11-SEP-21	R5582658
Surrogate: 4-Bromofluorobenzene	80.4		70-130	%	10-SEP-21	11-SEP-21	R5582658
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	105.5		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		11-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	103.0		70-130	%	10-SEP-21	11-SEP-21	R5582667
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2637321-5 EX15-21-45							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
Metals in Soil by CRC ICPMS							
Lead (Pb)	2.49		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	2.96		0.25	%		10-SEP-21	R5582552
L2637321-6 EX15-21-46							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582658
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582658
Toluene	<0.014		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582658
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582658
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582658
Surrogate: 1,4-Difluorobenzene	87.7		70-130	%	10-SEP-21	11-SEP-21	R5582658
Surrogate: 4-Bromofluorobenzene	87.6		70-130	%	10-SEP-21	11-SEP-21	R5582658
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	106.3		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		11-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	92.1		70-130	%	10-SEP-21	11-SEP-21	R5582667
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	2.56		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	3.40		0.25	%		10-SEP-21	R5582552
L2637321-7 EX15-21-47							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582658
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582658
Toluene	0.090		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582658
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582658
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582658
Surrogate: 1,4-Difluorobenzene	93.9		70-130	%	10-SEP-21	11-SEP-21	R5582658
Surrogate: 4-Bromofluorobenzene	87.6		70-130	%	10-SEP-21	11-SEP-21	R5582658
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	102.4		70-130	%	10-SEP-21	11-SEP-21	R5582622

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2637321-7 EX15-21-47							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		11-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	81.8		70-130	%	10-SEP-21	11-SEP-21	R5582667
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	2.36		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	4.14		0.25	%		10-SEP-21	R5582552
L2637321-8 EX15-21-52							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582658
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582658
Toluene	<0.014		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582658
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582658
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582658
Surrogate: 1,4-Difluorobenzene	89.7		70-130	%	10-SEP-21	11-SEP-21	R5582658
Surrogate: 4-Bromofluorobenzene	87.2		70-130	%	10-SEP-21	11-SEP-21	R5582658
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	104.5		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	53		50	mg/kg		11-SEP-21	
F4 (C34-C50)	53		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	106		50	mg/kg		11-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	90.9		70-130	%	10-SEP-21	11-SEP-21	R5582667
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	3.40		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	4.70		0.25	%		10-SEP-21	R5582552
L2637321-9 EX15-21-55							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2637321-9 EX15-21-55							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582658
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582658
Toluene	0.026		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582658
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582658
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582658
Surrogate: 1,4-Difluorobenzene	94.8		70-130	%	10-SEP-21	11-SEP-21	R5582658
Surrogate: 4-Bromofluorobenzene	89.5		70-130	%	10-SEP-21	11-SEP-21	R5582658
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	98.1		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		11-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	87.9		70-130	%	10-SEP-21	11-SEP-21	R5582667
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	3.86		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	3.24		0.25	%		10-SEP-21	R5582552
L2637321-10 EX15-21-65							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582658
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582658
Toluene	<0.014		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582658
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582658
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582658
Surrogate: 1,4-Difluorobenzene	85.8		70-130	%	10-SEP-21	11-SEP-21	R5582658
Surrogate: 4-Bromofluorobenzene	79.2		70-130	%	10-SEP-21	11-SEP-21	R5582658
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	89.8		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		11-SEP-21	
F1(C6-C10)							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2637321-10 EX15-21-65							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	86.4		70-130	%	10-SEP-21	11-SEP-21	R5582667
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	2.80		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	5.67		0.25	%		10-SEP-21	R5582552
L2637321-11 EX15-21-65D							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582658
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582658
Toluene	<0.014		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582658
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582658
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582658
Surrogate: 1,4-Difluorobenzene	87.1		70-130	%	10-SEP-21	11-SEP-21	R5582658
Surrogate: 4-Bromofluorobenzene	78.9		70-130	%	10-SEP-21	11-SEP-21	R5582658
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	89.0		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		11-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	87.4		70-130	%	10-SEP-21	11-SEP-21	R5582667
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	2.51		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	6.08		0.25	%		10-SEP-21	R5582552
L2637321-12 EX15-21-57							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582658
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582658
Toluene	0.028		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582658
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582658
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582658
Surrogate: 1,4-Difluorobenzene	91.8		70-130	%	10-SEP-21	11-SEP-21	R5582658

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2637321-12 EX15-21-57							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX and Styrene							
Surrogate: 4-Bromofluorobenzene	84.9		70-130	%	10-SEP-21	11-SEP-21	R5582658
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	86.8		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		11-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	81.4		70-130	%	10-SEP-21	11-SEP-21	R5582667
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	2.94		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	5.25		0.25	%		10-SEP-21	R5582552
L2637321-13 EX15-21-69							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582658
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582658
Toluene	<0.014		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582658
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582658
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582658
Surrogate: 1,4-Difluorobenzene	90.9		70-130	%	10-SEP-21	11-SEP-21	R5582658
Surrogate: 4-Bromofluorobenzene	89.4		70-130	%	10-SEP-21	11-SEP-21	R5582658
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	88.2		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		11-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	91.7		70-130	%	10-SEP-21	11-SEP-21	R5582667
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	2.42		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2637321-13 EX15-21-69							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
Moisture	4.38		0.25	%		10-SEP-21	R5582552
L2637321-14 EX15-21-71							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582658
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582658
Toluene	0.027		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582658
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582658
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582658
Surrogate: 1,4-Difluorobenzene	88.3		70-130	%	10-SEP-21	11-SEP-21	R5582658
Surrogate: 4-Bromofluorobenzene	85.3		70-130	%	10-SEP-21	11-SEP-21	R5582658
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	89.2		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		11-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	75.3		70-130	%	10-SEP-21	11-SEP-21	R5582667
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	2.53		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	3.81		0.25	%		10-SEP-21	R5582552
L2637321-15 EX15-21-72							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582658
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582658
Toluene	<0.014		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582658
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582658
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582658
Surrogate: 1,4-Difluorobenzene	89.9		70-130	%	10-SEP-21	11-SEP-21	R5582658
Surrogate: 4-Bromofluorobenzene	82.0		70-130	%	10-SEP-21	11-SEP-21	R5582658
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	83.1		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2637321-15 EX15-21-72							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
CCME Total Hydrocarbons							
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		11-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	73.1		70-130	%	10-SEP-21	11-SEP-21	R5582667
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	2.19		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	3.19		0.25	%		10-SEP-21	R5582552
L2637321-16 EX15-21-73							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582658
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582658
Toluene	<0.014		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582658
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582658
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582658
Surrogate: 1,4-Difluorobenzene	86.5		70-130	%	10-SEP-21	11-SEP-21	R5582658
Surrogate: 4-Bromofluorobenzene	83.7		70-130	%	10-SEP-21	11-SEP-21	R5582658
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	88.7		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		11-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	80.5		70-130	%	10-SEP-21	11-SEP-21	R5582667
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	2.11		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	4.14		0.25	%		10-SEP-21	R5582552
L2637321-17 EX15-21-74							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582658

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2637321-17 EX15-21-74							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX and Styrene							
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582658
Toluene	<0.014		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582658
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582658
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582658
Surrogate: 1,4-Difluorobenzene	81.9		70-130	%	10-SEP-21	11-SEP-21	R5582658
Surrogate: 4-Bromofluorobenzene	84.6		70-130	%	10-SEP-21	11-SEP-21	R5582658
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	85.4		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		11-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	77.5		70-130	%	10-SEP-21	11-SEP-21	R5582667
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	2.53		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	4.11		0.25	%		10-SEP-21	R5582552
L2637321-18 EX15-21-75							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582658
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582658
Toluene	0.066		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582658
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582658
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582658
Surrogate: 1,4-Difluorobenzene	101.1		70-130	%	10-SEP-21	11-SEP-21	R5582658
Surrogate: 4-Bromofluorobenzene	100.5		70-130	%	10-SEP-21	11-SEP-21	R5582658
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	84.3		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	64		50	mg/kg		11-SEP-21	
F4 (C34-C50)	51		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	115		50	mg/kg		11-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	73.4		70-130	%	10-SEP-21	11-SEP-21	R5582667

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2637321-18 EX15-21-75							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	2.07		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	4.87		0.25	%		10-SEP-21	R5582552
L2637321-19 EX15-21-76							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582658
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582658
Toluene	0.150		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582658
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582658
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582658
Surrogate: 1,4-Difluorobenzene	100.3		70-130	%	10-SEP-21	11-SEP-21	R5582658
Surrogate: 4-Bromofluorobenzene	91.0		70-130	%	10-SEP-21	11-SEP-21	R5582658
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	89.7		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		11-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	81.8		70-130	%	10-SEP-21	11-SEP-21	R5582667
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	2.64		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	5.33		0.25	%		10-SEP-21	R5582552
L2637321-20 EX15-21-77							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582658
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582658
Toluene	0.061		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582658
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582658
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582658
Surrogate: 1,4-Difluorobenzene	91.3		70-130	%	10-SEP-21	11-SEP-21	R5582658
Surrogate: 4-Bromofluorobenzene	95.7		70-130	%	10-SEP-21	11-SEP-21	R5582658
CCME F2-4 Hydrocarbons							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2637321-20 EX15-21-77							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	84.4		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		11-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	73.5		70-130	%	10-SEP-21	11-SEP-21	R5582667
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	2.19		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	3.68		0.25	%		10-SEP-21	R5582552
L2637321-21 EX15-21-78							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582751
Toluene	0.045		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582751
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Surrogate: 1,4-Difluorobenzene	108.8		70-130	%	10-SEP-21	11-SEP-21	R5582751
Surrogate: 4-Bromofluorobenzene	77.3		70-130	%	10-SEP-21	11-SEP-21	R5582751
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	106.2		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		11-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	127.5		70-130	%	10-SEP-21	11-SEP-21	R5582756
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	2.42		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	5.62		0.25	%		10-SEP-21	R5582548

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2637321-22 EX15-21-79							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582751
Toluene	0.022		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582751
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Surrogate: 1,4-Difluorobenzene	87.0		70-130	%	10-SEP-21	11-SEP-21	R5582751
Surrogate: 4-Bromofluorobenzene	78.1		70-130	%	10-SEP-21	11-SEP-21	R5582751
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	100.9		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		11-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	112.5		70-130	%	10-SEP-21	11-SEP-21	R5582756
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	2.58		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	6.79		0.25	%		10-SEP-21	R5582548
L2637321-23 EX15-21-80							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582751
Toluene	0.032		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582751
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Surrogate: 1,4-Difluorobenzene	95.1		70-130	%	10-SEP-21	11-SEP-21	R5582751
Surrogate: 4-Bromofluorobenzene	83.3		70-130	%	10-SEP-21	11-SEP-21	R5582751
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	98.0		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		11-SEP-21	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2637321-23 EX15-21-80							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	121.4		70-130	%	10-SEP-21	11-SEP-21	R5582756
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	2.56		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	4.37		0.25	%		10-SEP-21	R5582548
L2637321-24 EX15-21-81							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050	VOCJ	0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Ethylbenzene	<0.015	VOCJ	0.015	mg/kg	10-SEP-21	11-SEP-21	R5582751
Toluene	<0.014	VOCJ	0.014	mg/kg	10-SEP-21	11-SEP-21	R5582751
o-Xylene	<0.050	VOCJ	0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
m+p-Xylene	<0.050	VOCJ	0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Surrogate: 1,4-Difluorobenzene	88.4		70-130	%	10-SEP-21	11-SEP-21	R5582751
Surrogate: 4-Bromofluorobenzene	86.7		70-130	%	10-SEP-21	11-SEP-21	R5582751
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	111.8		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		11-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	113.6		70-130	%	10-SEP-21	11-SEP-21	R5582756
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	2.16		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	4.58		0.25	%		10-SEP-21	R5582548

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
VOCJ	Soil jar was submitted as VOC sample container. VOC results may be biased low, and do not meet federal (CCME) or provincial requirements (for BC, AB-Tier1, MB, ON, SK).

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BTXS-MEOH-HS-MS-CL	Soil	BTEX and Styrene	EPA 8260C/5021A

The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. Target compound concentrations are measured using mass spectrometry detection.

F1-4-CALC-CL	Soil	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-MEOH-HS-FID-CL	Soil	F1(C6-C10)	CWS PHC Tier 1

The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. The F1 fraction concentration is measured using flame ionization detection.

F2-4-TMB-H/A-FID-CL	Soil	CCME F2-4 Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

This analysis is carried out in accordance with the "Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method, Canadian Council of Ministers of the Environment, December 2001." For C10 to C50 hydrocarbons (F2, F3, F4) and gravimetric heavy hydrocarbons (F4G-sg), a subsample of the sediment/soil is extracted with 1:1 hexane:acetone using a rotary extractor. The extract undergoes a silica-gel clean-up to remove polar compounds. F2, F3 & F4 are analyzed by on-column GC/FID, and F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where F4 (C34-C50) and F4G-sg results are reported for a sample, the larger of the reported values is used for comparison against the relevant CCME standard for F4.
7. The gravimetric heavy hydrocarbon results (F4G-sg), cannot be added to the C6 to C50 hydrocarbon results.
8. This method is validated for use.
9. Data from analysis of quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram.

MET-200.2-CCMS-ED	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020A (mod)

Soil/sediment is dried, disaggregated, and sieved (2 mm). Strong Acid Leachable Metals in the <2mm fraction are solubilized by heated digestion with nitric and hydrochloric acids. Instrumental analysis is by Collision / Reaction Cell ICPMS.

Limitations: This method is intended to liberate environmentally available metals. Silicate minerals are not solubilized. Some metals may be only partially recovered (matrix dependent), including Al, Ba, Be, Cr, S, Sr, Ti, Tl, V, W, and Zr. Elemental Sulfur may be poorly recovered by this method. Volatile forms of sulfur (e.g. sulfide, H2S) may be excluded if lost during sampling, storage, or digestion.

MOISTURE-CL	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
This analysis is carried out gravimetrically by drying the sample at 105 C			
XYLENES-SUM-CALC-CL	Soil	Sum of Xylene Isomer Concentrations	CALCULATED RESULT
Total xylenes represents the sum of o-xylene and m&p-xylene.			

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
ED	ALS ENVIRONMENTAL - EDMONTON, ALBERTA, CANADA
CL	ALS ENVIRONMENTAL - CALGARY, ALBERTA, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Client: GOLDER ASSOCIATES LTD
16820 107 Ave NW
Edmonton AB T5P 4C3
Contact: Steven Fiddler

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTXS-MEOH-HS-MS-CL	**Soil**							
Batch R5582658								
WG3615158-3 DUP		**L2637321-1**						
Benzene		<0.0050	<0.0050	RPD-NA	mg/kg	N/A	30	11-SEP-21
Ethylbenzene		<0.015	<0.015	RPD-NA	mg/kg	N/A	30	11-SEP-21
Toluene		<0.014	<0.014	RPD-NA	mg/kg	N/A	30	11-SEP-21
o-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	11-SEP-21
m+p-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	11-SEP-21
WG3615158-4 DUP		**L2637321-3**						
Benzene		<0.0050	<0.0050	RPD-NA	mg/kg	N/A	30	11-SEP-21
Ethylbenzene		<0.015	<0.015	RPD-NA	mg/kg	N/A	30	11-SEP-21
Toluene		<0.014	<0.014	RPD-NA	mg/kg	N/A	30	11-SEP-21
o-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	11-SEP-21
m+p-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	11-SEP-21
WG3615158-2 LCS								
Benzene			125.1		%		70-130	11-SEP-21
Ethylbenzene			115.4		%		70-130	11-SEP-21
Toluene			108.6		%		70-130	11-SEP-21
o-Xylene			107.5		%		70-130	11-SEP-21
m+p-Xylene			112.8		%		70-130	11-SEP-21
WG3615158-1 MB								
Benzene			<0.0050		mg/kg		0.005	11-SEP-21
Ethylbenzene			<0.015		mg/kg		0.015	11-SEP-21
Toluene			<0.014		mg/kg		0.014	11-SEP-21
o-Xylene			<0.050		mg/kg		0.05	11-SEP-21
m+p-Xylene			<0.050		mg/kg		0.05	11-SEP-21
Surrogate: 1,4-Difluorobenzene			81.6		%		70-130	11-SEP-21
Surrogate: 4-Bromofluorobenzene			75.5		%		70-130	11-SEP-21
Batch R5582751								
WG3615185-3 DUP		**L2637321-21**						
Benzene		<0.0050	<0.0050	RPD-NA	mg/kg	N/A	30	11-SEP-21
Ethylbenzene		<0.015	<0.015	RPD-NA	mg/kg	N/A	30	11-SEP-21
Toluene		0.045	0.039		mg/kg	14	30	11-SEP-21
o-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	11-SEP-21
m+p-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	11-SEP-21
WG3615185-4 DUP		**L2637321-24**						
Benzene		<0.0050	<0.0050	RPD-NA	mg/kg	N/A	30	11-SEP-21
Ethylbenzene		<0.015	<0.015	RPD-NA	mg/kg	N/A	30	11-SEP-21

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTXS-MEOH-HS-MS-CL	**Soil**							
Batch R5582751								
WG3615185-4 DUP		**L2637321-24**						
Toluene		<0.014	<0.014	RPD-NA	mg/kg	N/A	30	11-SEP-21
o-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	11-SEP-21
m+p-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	11-SEP-21
WG3615185-2 LCS								
Benzene			121.4		%		70-130	11-SEP-21
Ethylbenzene			102.0		%		70-130	11-SEP-21
Toluene			102.8		%		70-130	11-SEP-21
o-Xylene			121.3		%		70-130	11-SEP-21
m+p-Xylene			112.0		%		70-130	11-SEP-21
WG3615185-1 MB								
Benzene			<0.0050		mg/kg		0.005	11-SEP-21
Ethylbenzene			<0.015		mg/kg		0.015	11-SEP-21
Toluene			<0.014		mg/kg		0.014	11-SEP-21
o-Xylene			<0.050		mg/kg		0.05	11-SEP-21
m+p-Xylene			<0.050		mg/kg		0.05	11-SEP-21
Surrogate: 1,4-Difluorobenzene			97.5		%		70-130	11-SEP-21
Surrogate: 4-Bromofluorobenzene			71.4		%		70-130	11-SEP-21
F1-MEOH-HS-FID-CL	**Soil**							
Batch R5582667								
WG3615158-3 DUP		**L2637321-1**						
F1(C6-C10)		<10	<10	RPD-NA	mg/kg	N/A	30	11-SEP-21
WG3615158-4 DUP		**L2637321-3**						
F1(C6-C10)		<10	<10	RPD-NA	mg/kg	N/A	30	11-SEP-21
WG3615158-2 LCS								
F1(C6-C10)			99.2		%		70-130	11-SEP-21
WG3615158-1 MB								
F1(C6-C10)			<10		mg/kg		10	11-SEP-21
Surrogate: 3,4-Dichlorotoluene			80.0		%		70-130	11-SEP-21
Batch R5582756								
WG3615185-3 DUP		**L2637321-21**						
F1(C6-C10)		<10	<10	RPD-NA	mg/kg	N/A	30	11-SEP-21
WG3615185-4 DUP		**L2637321-24**						
F1(C6-C10)		<10	<10	RPD-NA	mg/kg	N/A	30	11-SEP-21
WG3615185-2 LCS								
F1(C6-C10)			111.1		%		70-130	11-SEP-21
WG3615185-1 MB								

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-MEOH-HS-FID-CL	**Soil**							
Batch R5582756								
WG3615185-1 MB								
F1(C6-C10)			<10		mg/kg		10	11-SEP-21
Surrogate: 3,4-Dichlorotoluene			97.5		%		70-130	11-SEP-21
F2-4-TMB-H/A-FID-CL	**Soil**							
Batch R5582622								
WG3615147-4 DUP		**L2637321-1**						
F2: (C10-C16)		<25	<25	RPD-NA	mg/kg	N/A	40	11-SEP-21
F3: (C16-C34)		<50	<50	RPD-NA	mg/kg	N/A	40	11-SEP-21
F4: (C34-C50)		<50	<50	RPD-NA	mg/kg	N/A	40	11-SEP-21
WG3615147-3 IRM		**ALS PHC3 RM**						
F2: (C10-C16)			105.6		%		70-130	11-SEP-21
F3: (C16-C34)			129.8		%		70-130	11-SEP-21
F4: (C34-C50)			125.4		%		70-130	11-SEP-21
WG3615168-3 IRM		**ALS PHC3 RM**						
F2: (C10-C16)			101.4		%		70-130	11-SEP-21
F3: (C16-C34)			120.7		%		70-130	11-SEP-21
F4: (C34-C50)			114.6		%		70-130	11-SEP-21
WG3615147-2 LCS								
F2: (C10-C16)			107.2		%		70-130	11-SEP-21
F3: (C16-C34)			110.6		%		70-130	11-SEP-21
F4: (C34-C50)			121.1		%		70-130	11-SEP-21
WG3615168-2 LCS								
F2: (C10-C16)			105.8		%		70-130	11-SEP-21
F3: (C16-C34)			111.6		%		70-130	11-SEP-21
F4: (C34-C50)			118.0		%		70-130	11-SEP-21
WG3615147-1 MB								
F2: (C10-C16)			<25		mg/kg		25	11-SEP-21
F3: (C16-C34)			<50		mg/kg		50	11-SEP-21
F4: (C34-C50)			<50		mg/kg		50	11-SEP-21
Surrogate: 2-Bromobenzotrifluoride			107.7		%		70-130	11-SEP-21
WG3615168-1 MB								
F2: (C10-C16)			<25		mg/kg		25	11-SEP-21
F3: (C16-C34)			<50		mg/kg		50	11-SEP-21
F4: (C34-C50)			<50		mg/kg		50	11-SEP-21
Surrogate: 2-Bromobenzotrifluoride			113.9		%		70-130	11-SEP-21
MET-200.2-CCMS-ED	**Soil**							

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-ED	**Soil**							
Batch R5582823								
WG3615464-3 CRM		**SCP_SS-2_SOIL**						
Lead (Pb)			102.0		%		70-130	11-SEP-21
WG3615482-3 CRM		**SCP_SS-2_SOIL**						
Lead (Pb)			100.6		%		70-130	11-SEP-21
WG3615464-4 DUP		**L2637321-1**						
Lead (Pb)		4.74	3.89		mg/kg	20	40	11-SEP-21
WG3615482-4 DUP		**L2637321-21**						
Lead (Pb)		2.42	2.44		mg/kg	0.5	40	11-SEP-21
WG3615464-2 LCS								
Lead (Pb)			106.4		%		80-120	11-SEP-21
WG3615482-2 LCS								
Lead (Pb)			105.2		%		80-120	11-SEP-21
WG3615464-1 MB								
Lead (Pb)			<0.50		mg/kg		0.5	11-SEP-21
WG3615482-1 MB								
Lead (Pb)			<0.50		mg/kg		0.5	11-SEP-21
MOISTURE-CL	**Soil**							
Batch R5582548								
WG3615177-2 LCS								
Moisture			99.3		%		90-110	10-SEP-21
WG3615177-1 MB								
Moisture			<0.25		%		0.25	10-SEP-21
Batch R5582552								
WG3615153-3 DUP		**L2637321-1**						
Moisture		3.02	2.70		%	11	20	10-SEP-21
WG3615153-2 LCS								
Moisture			99.3		%		90-110	10-SEP-21
WG3615153-1 MB								
Moisture			<0.25		%		0.25	10-SEP-21

Quality Control Report

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

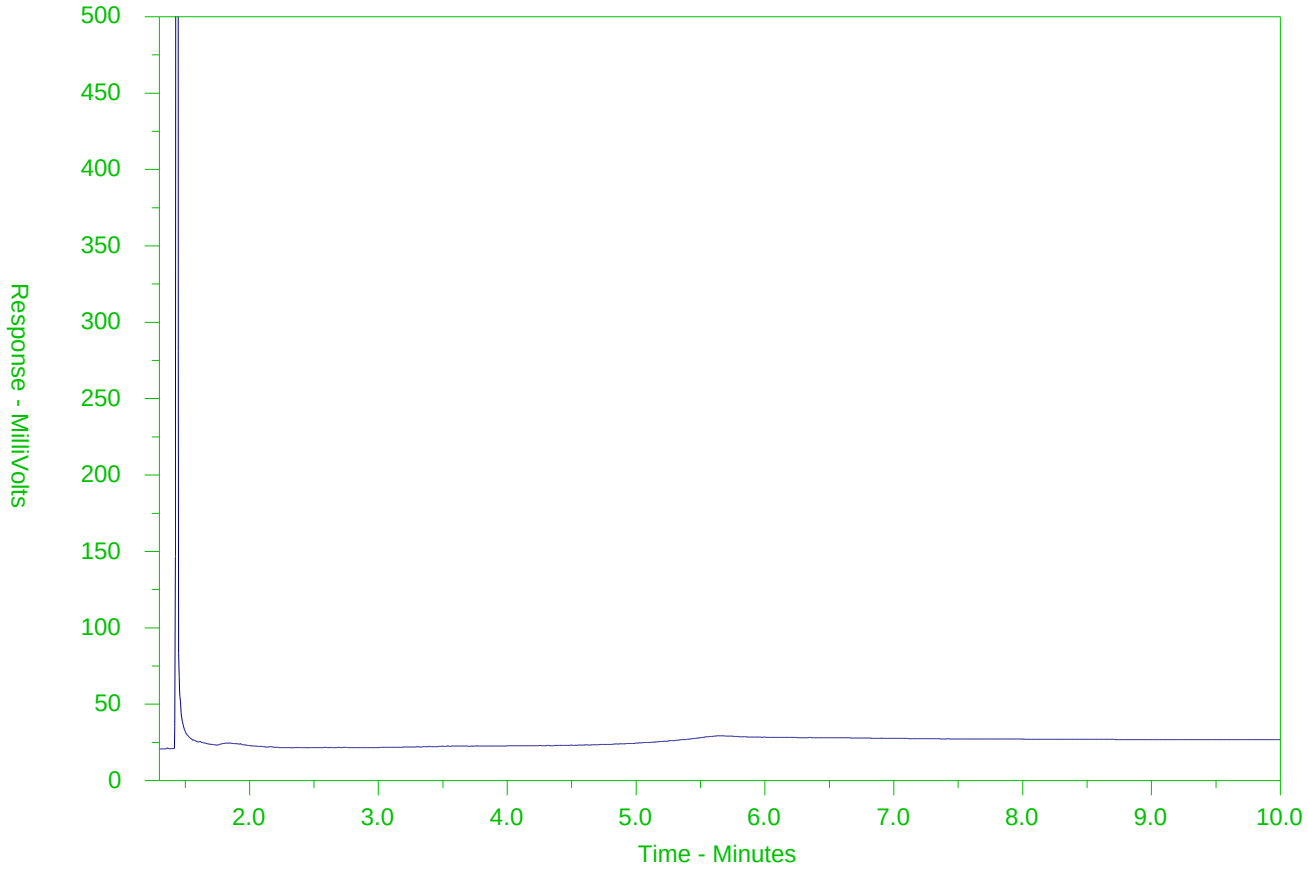
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2637321-1
Client Sample ID: EX15-21-11



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

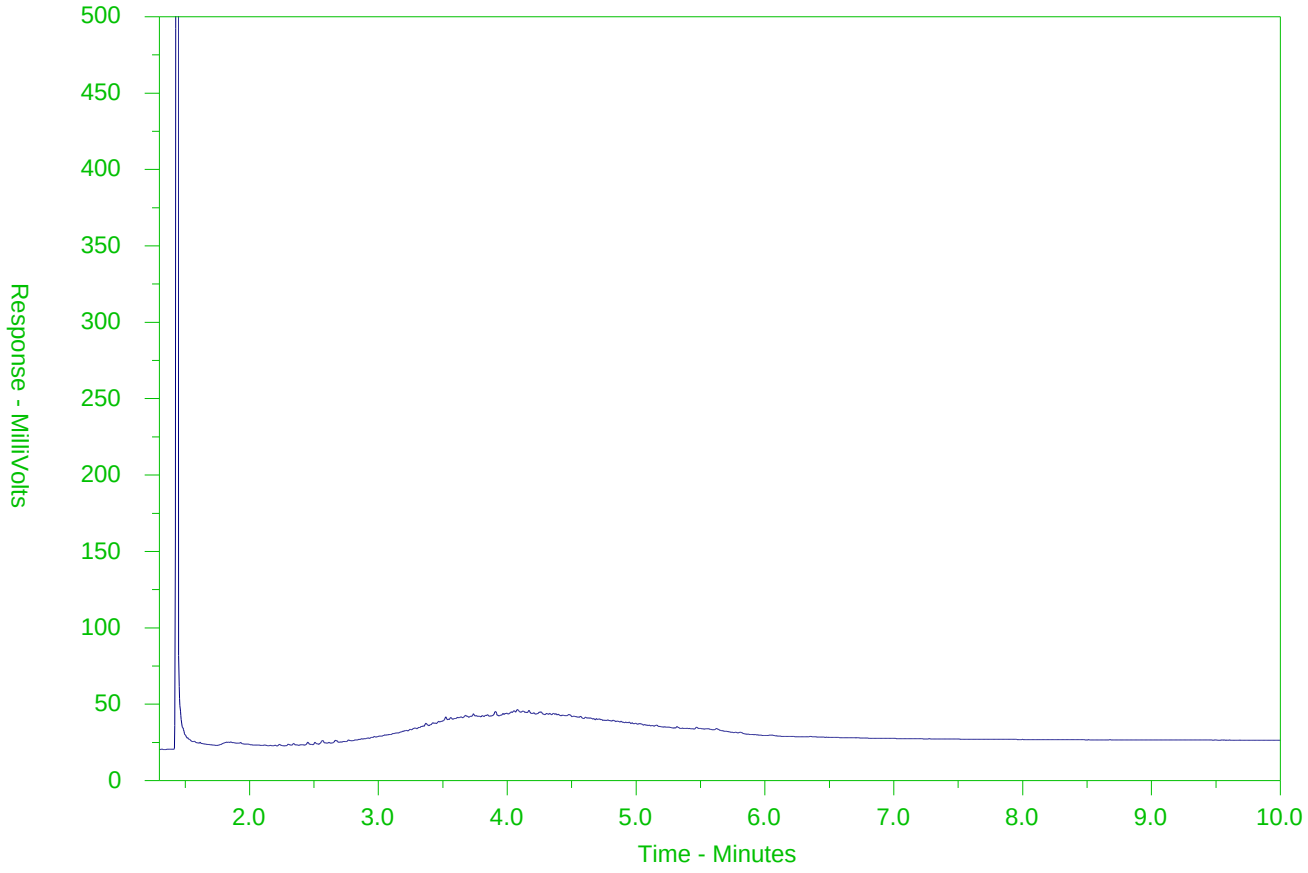
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2637321-2
Client Sample ID: EX15-21-25



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

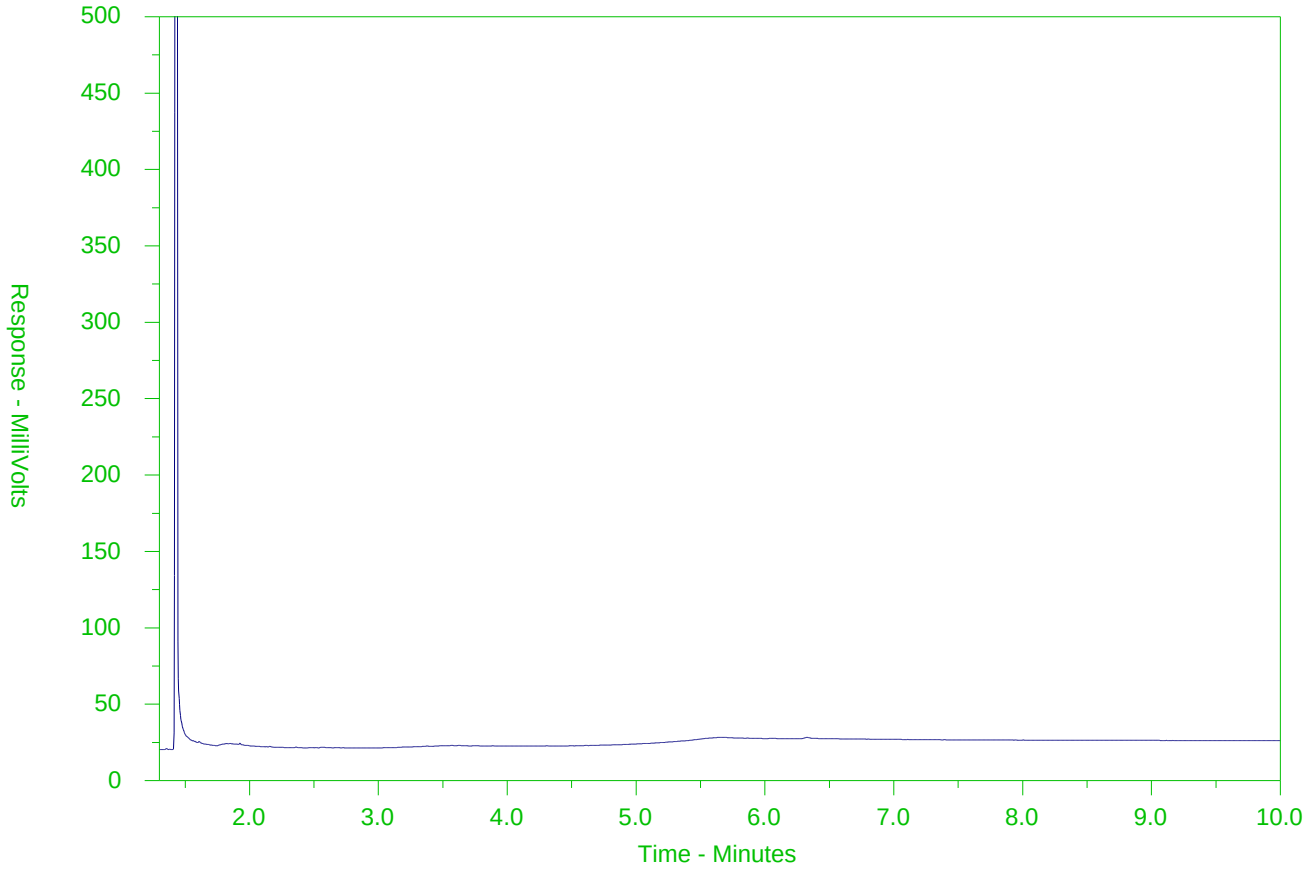
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2637321-3
Client Sample ID: EX15-21-29



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

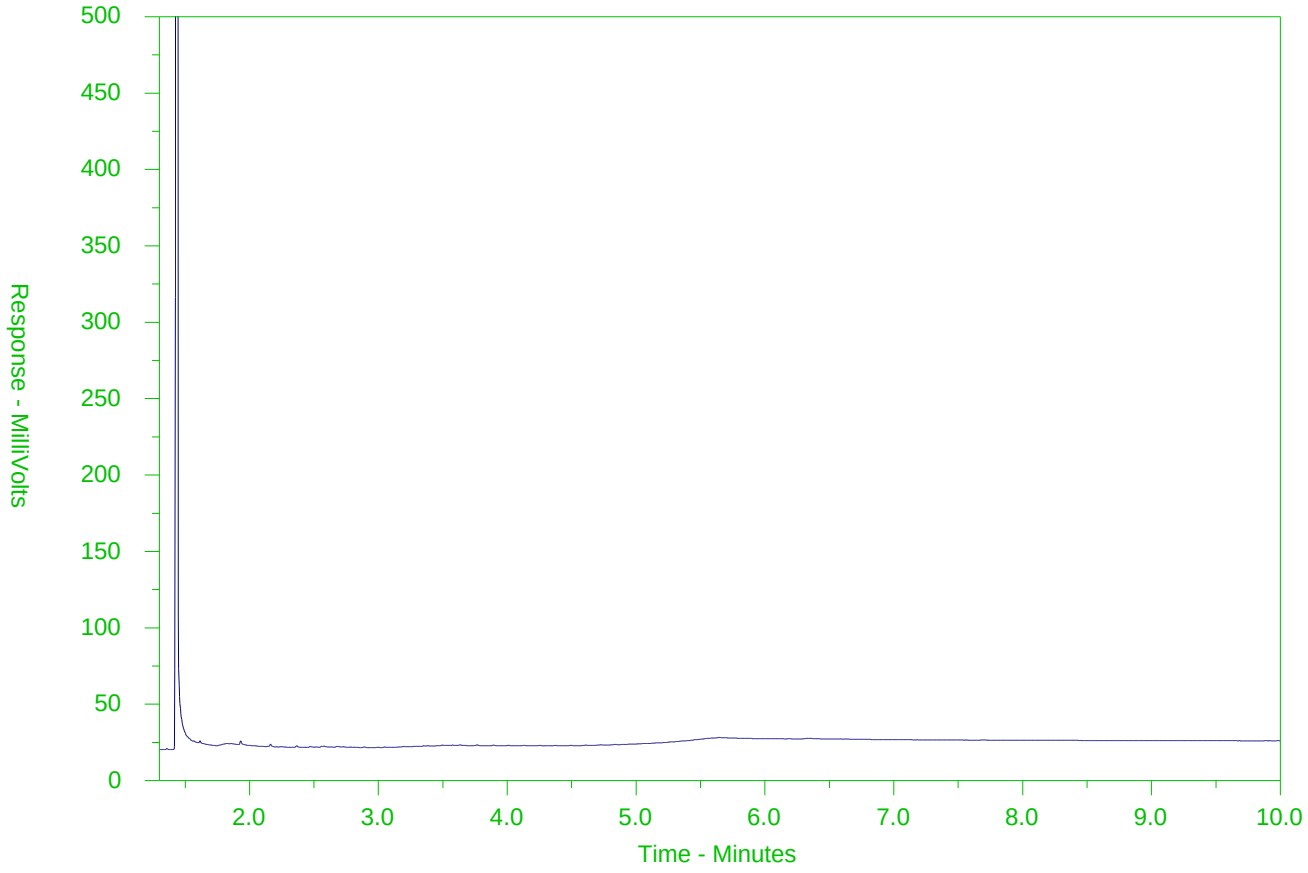
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2637321-4
Client Sample ID: EX15-21-30



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

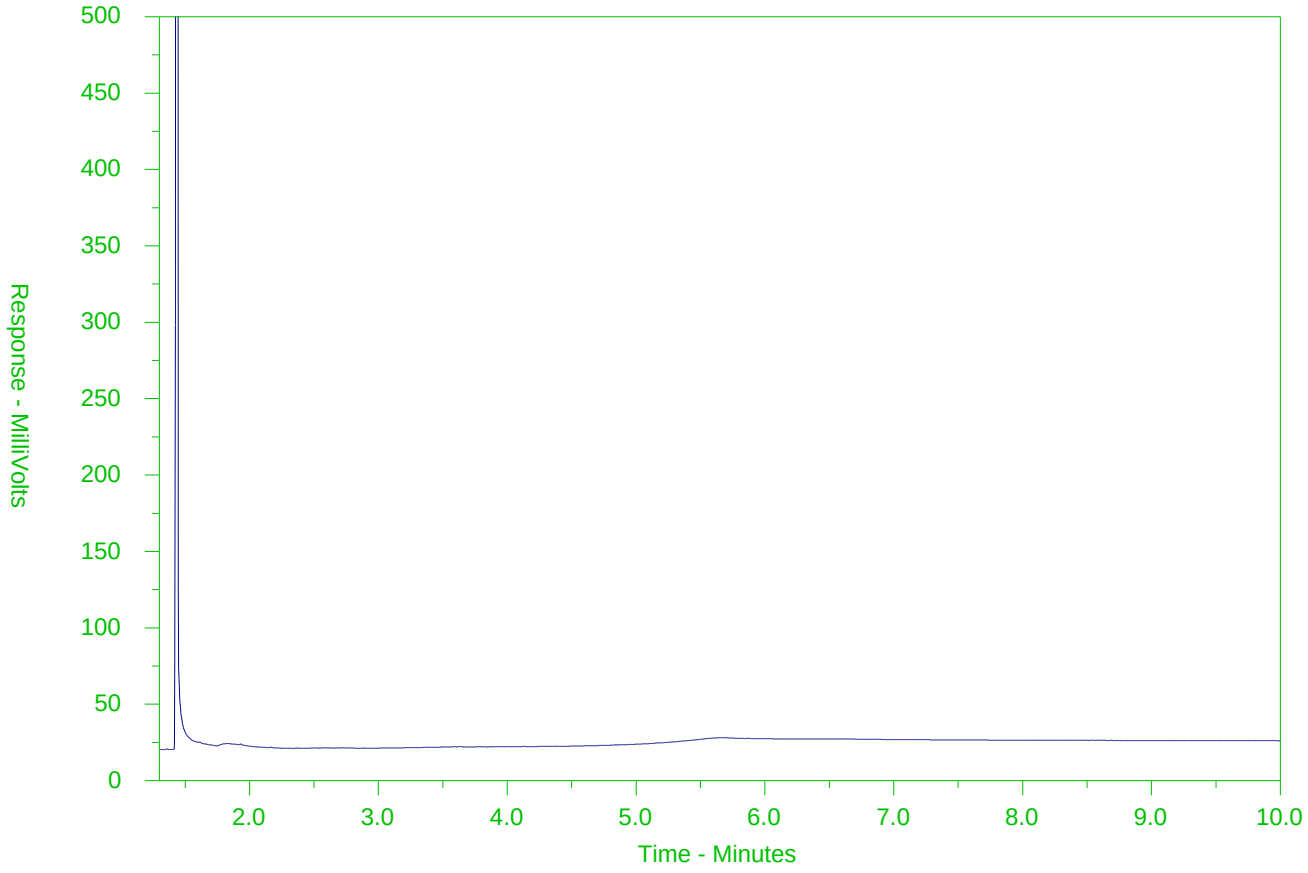
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2637321-5
Client Sample ID: EX15-21-45



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

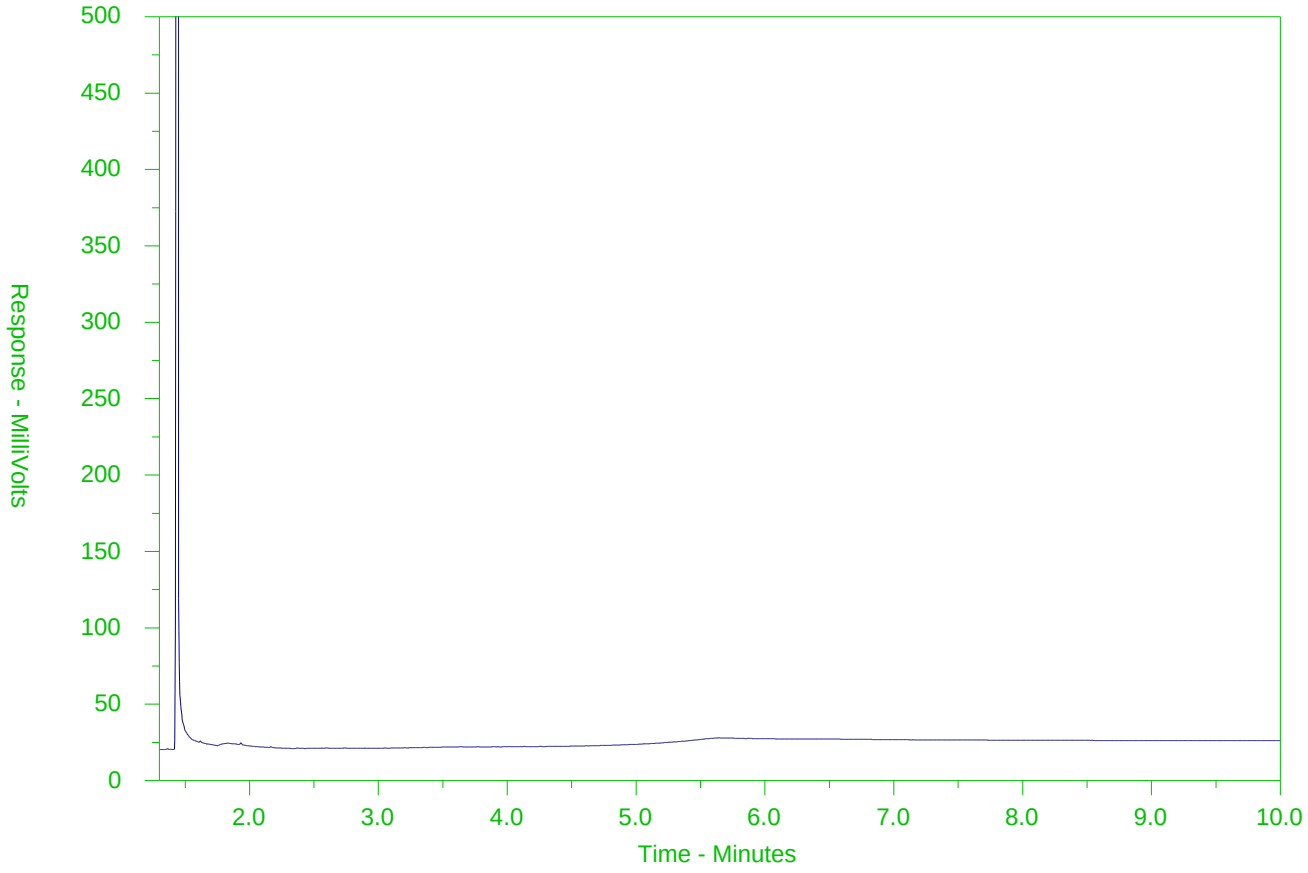
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2637321-6
Client Sample ID: EX15-21-46



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

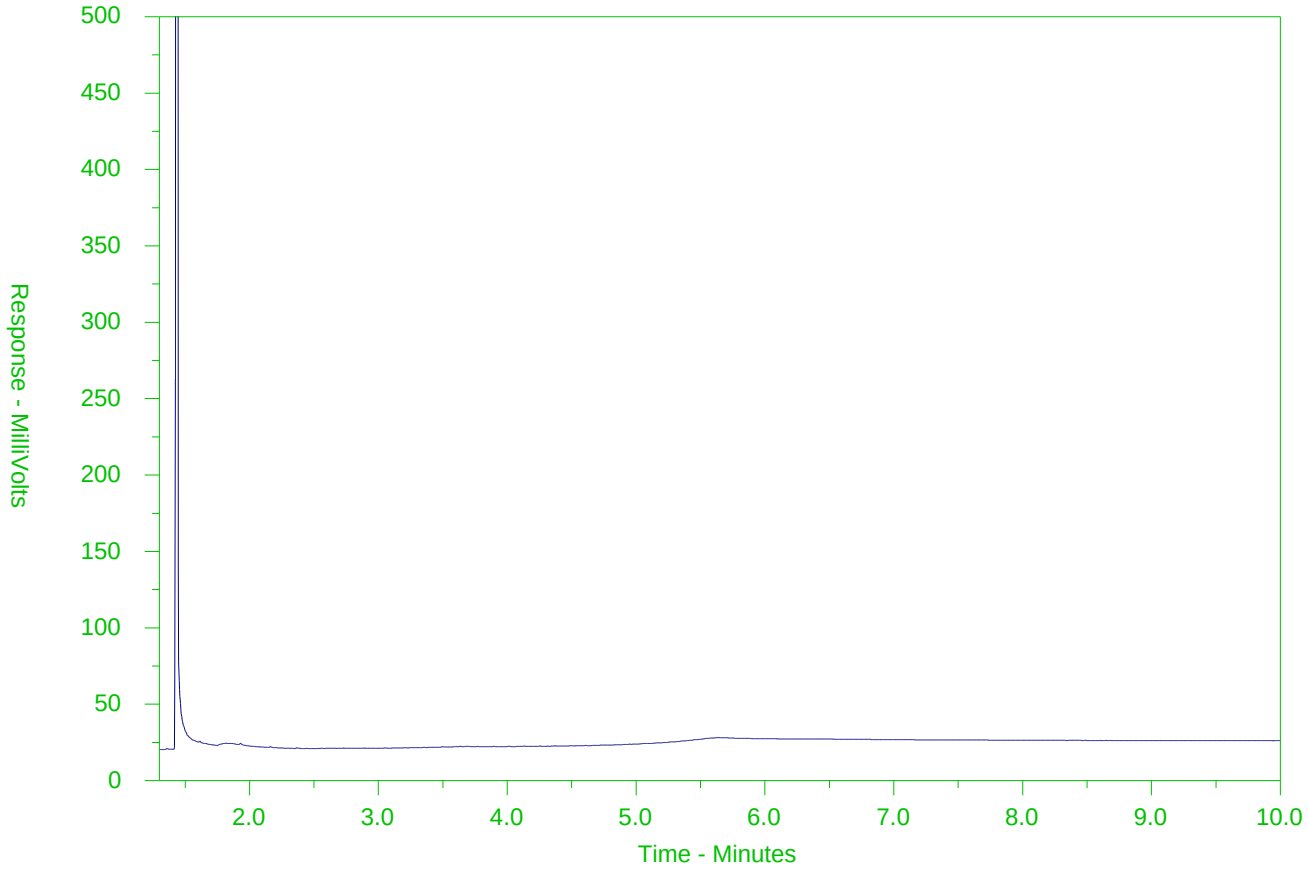
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2637321-7
Client Sample ID: EX15-21-47



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

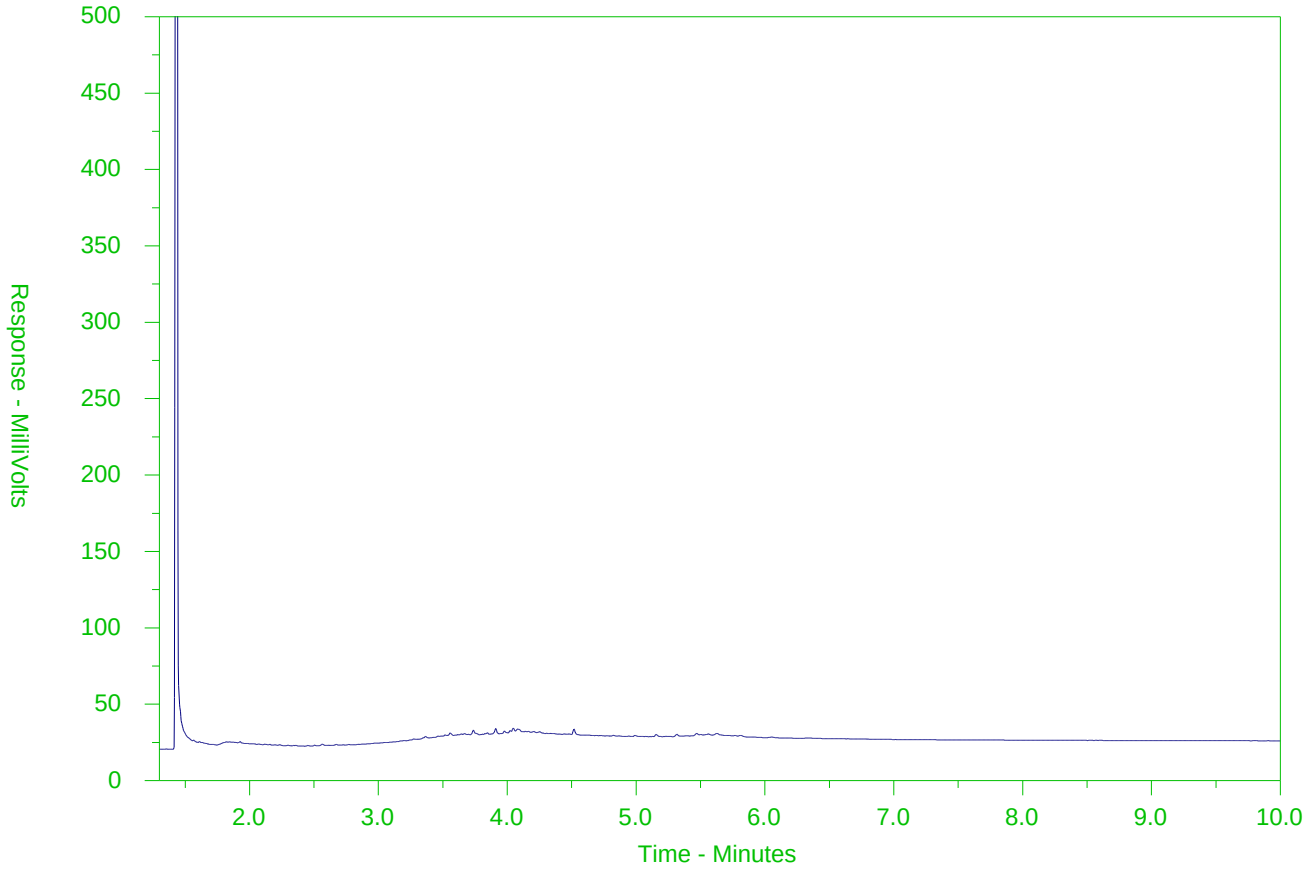
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2637321-8
Client Sample ID: EX15-21-52



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

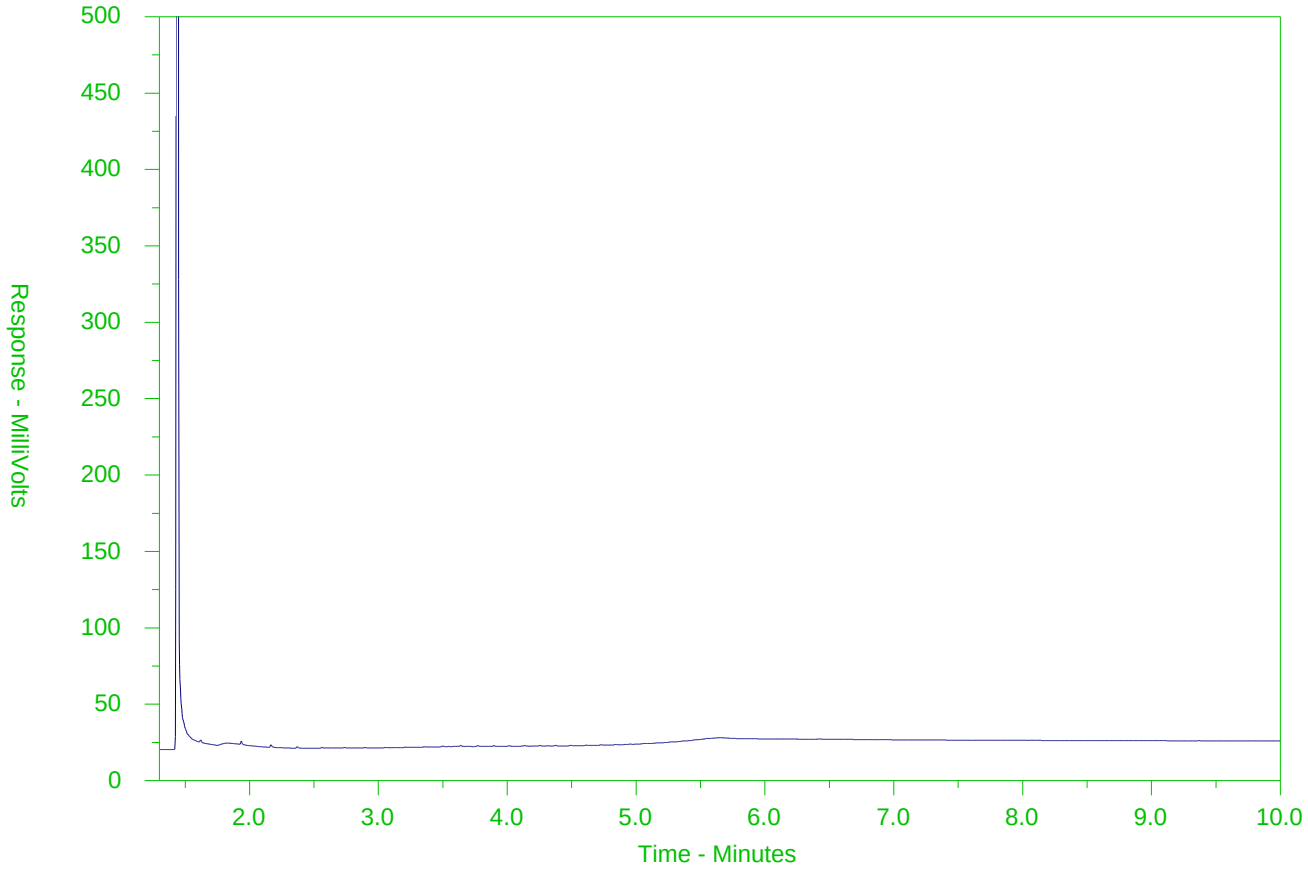
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2637321-9
Client Sample ID: EX15-21-55



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

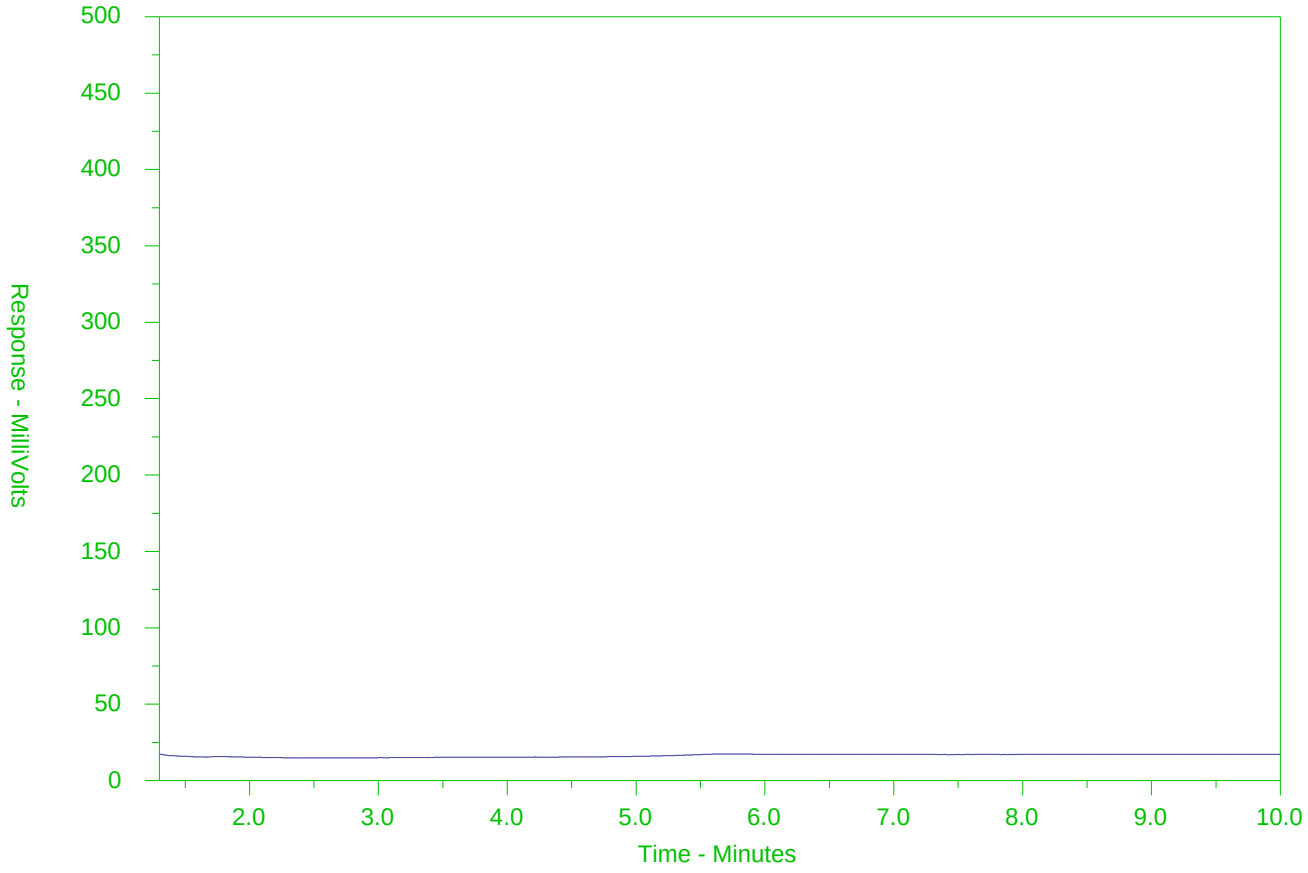
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2637321-10
Client Sample ID: EX15-21-65



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C 346°F	287°C 549°F	481°C 898°F	575°C 1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

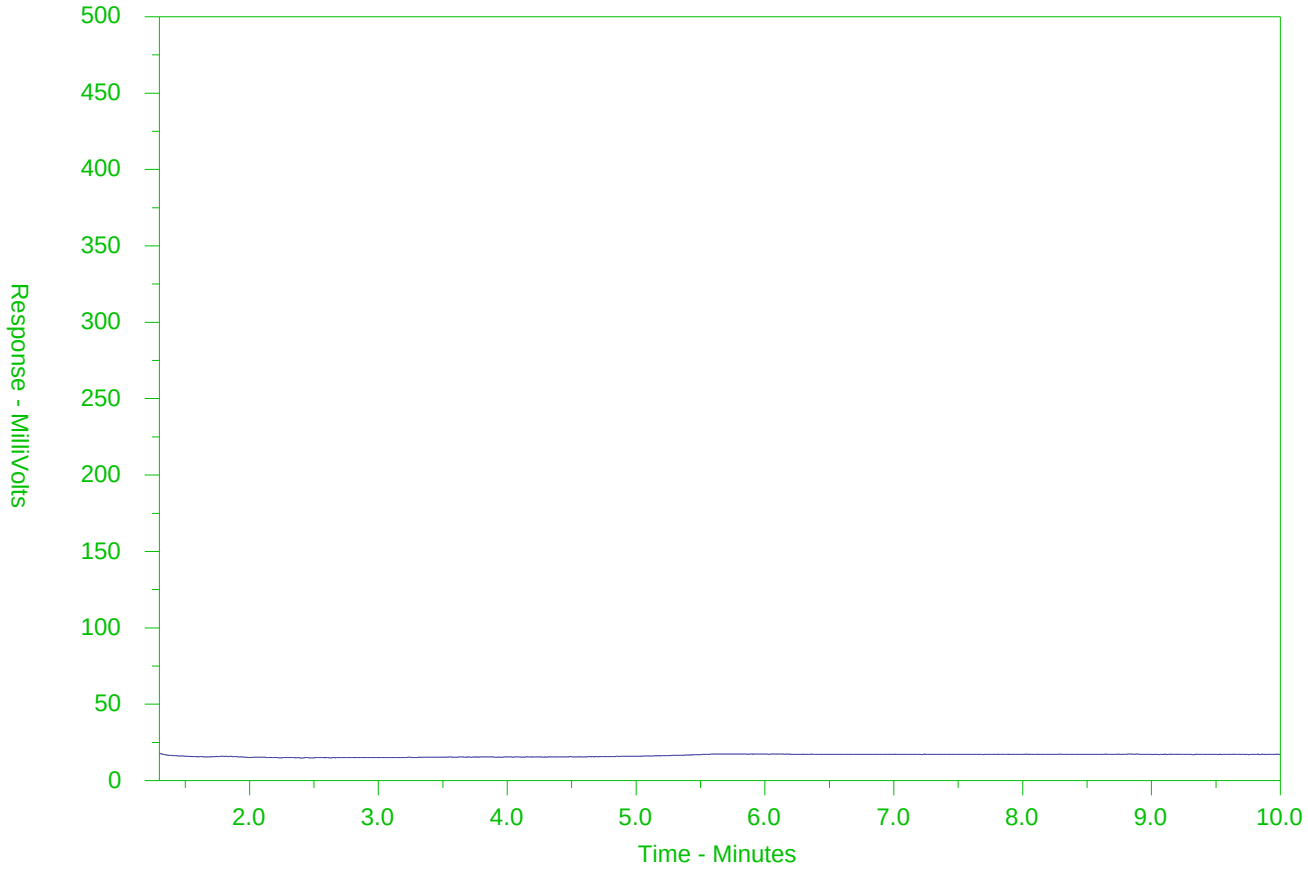
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2637321-11
Client Sample ID: EX15-21-65D



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

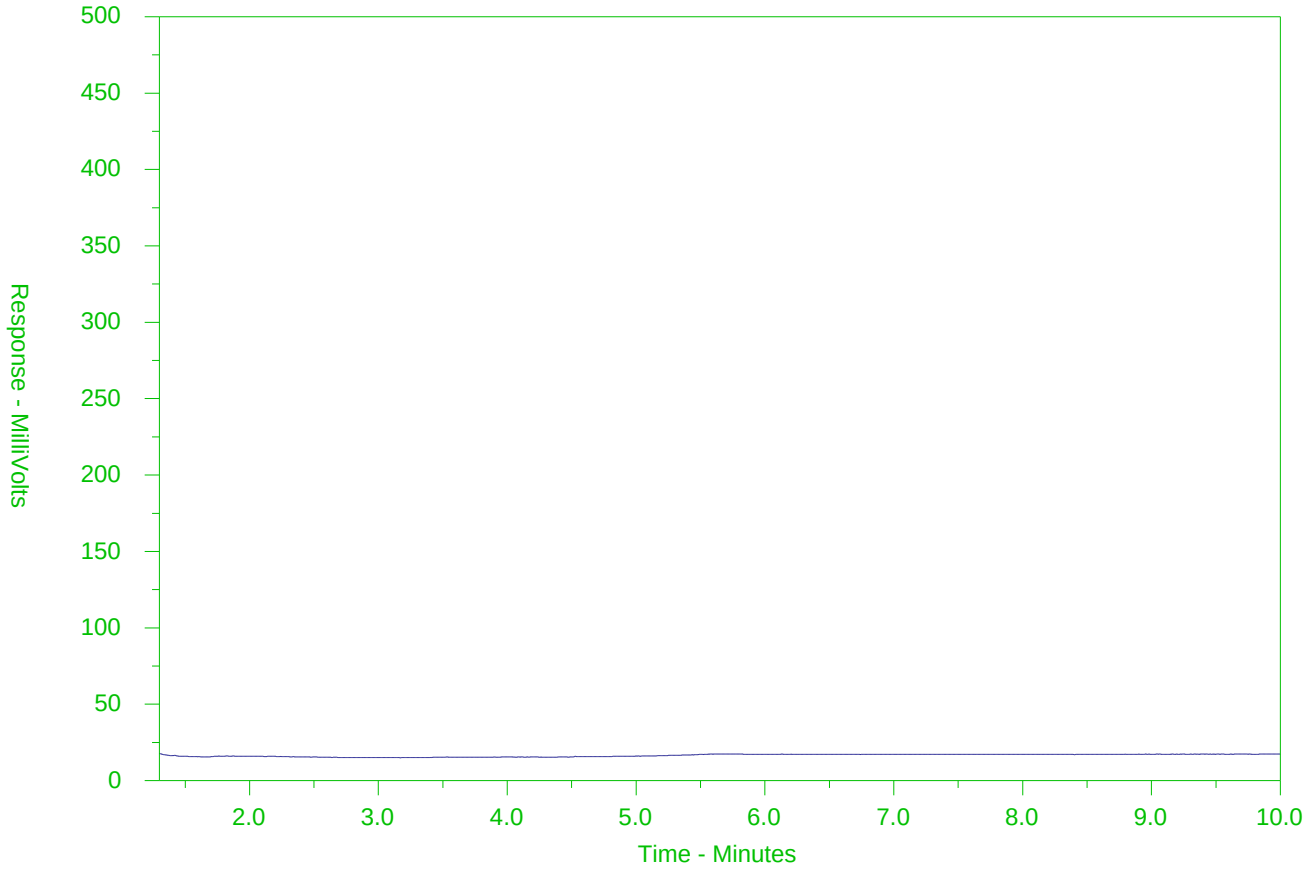
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2637321-12
Client Sample ID: EX15-21-57



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

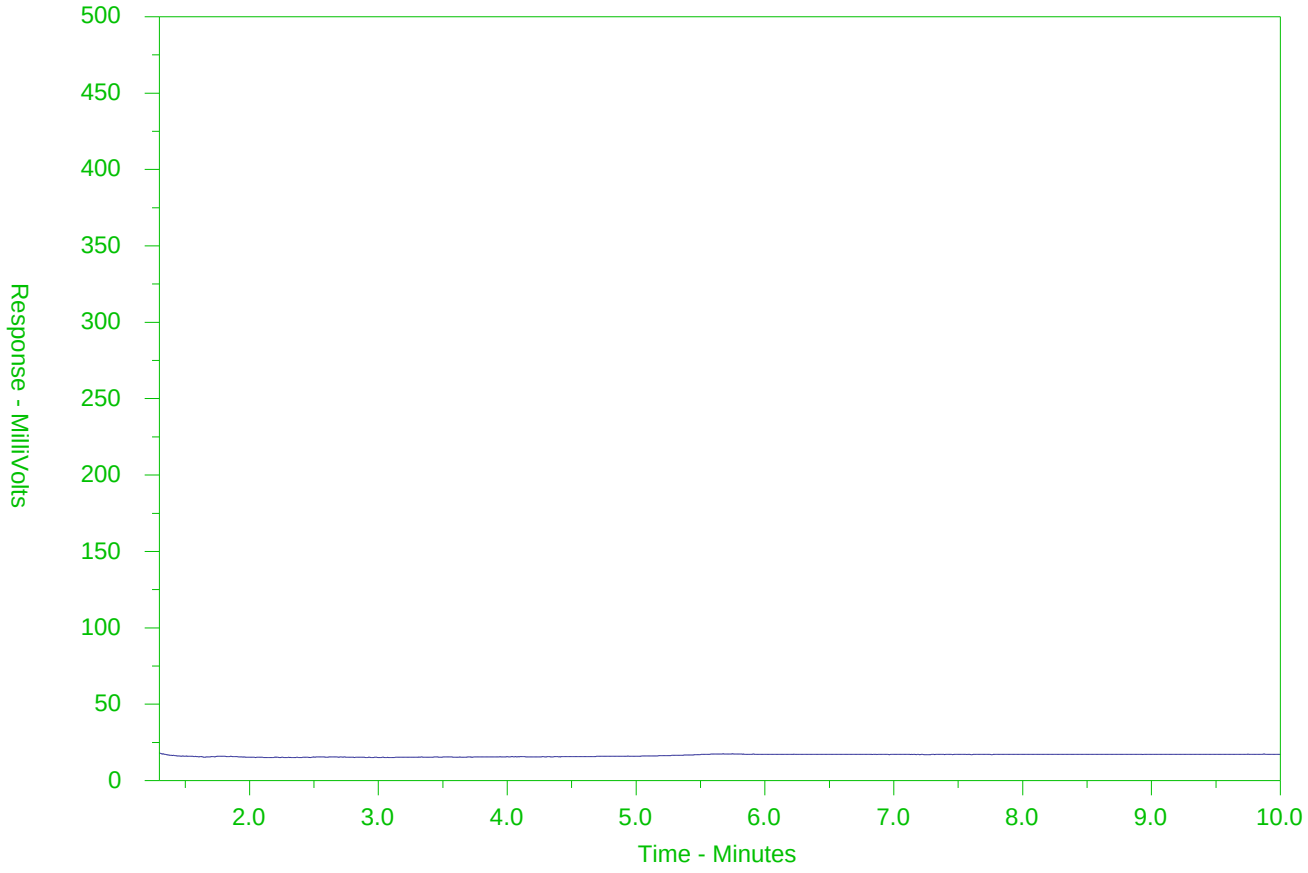
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2637321-13
Client Sample ID: EX15-21-69



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

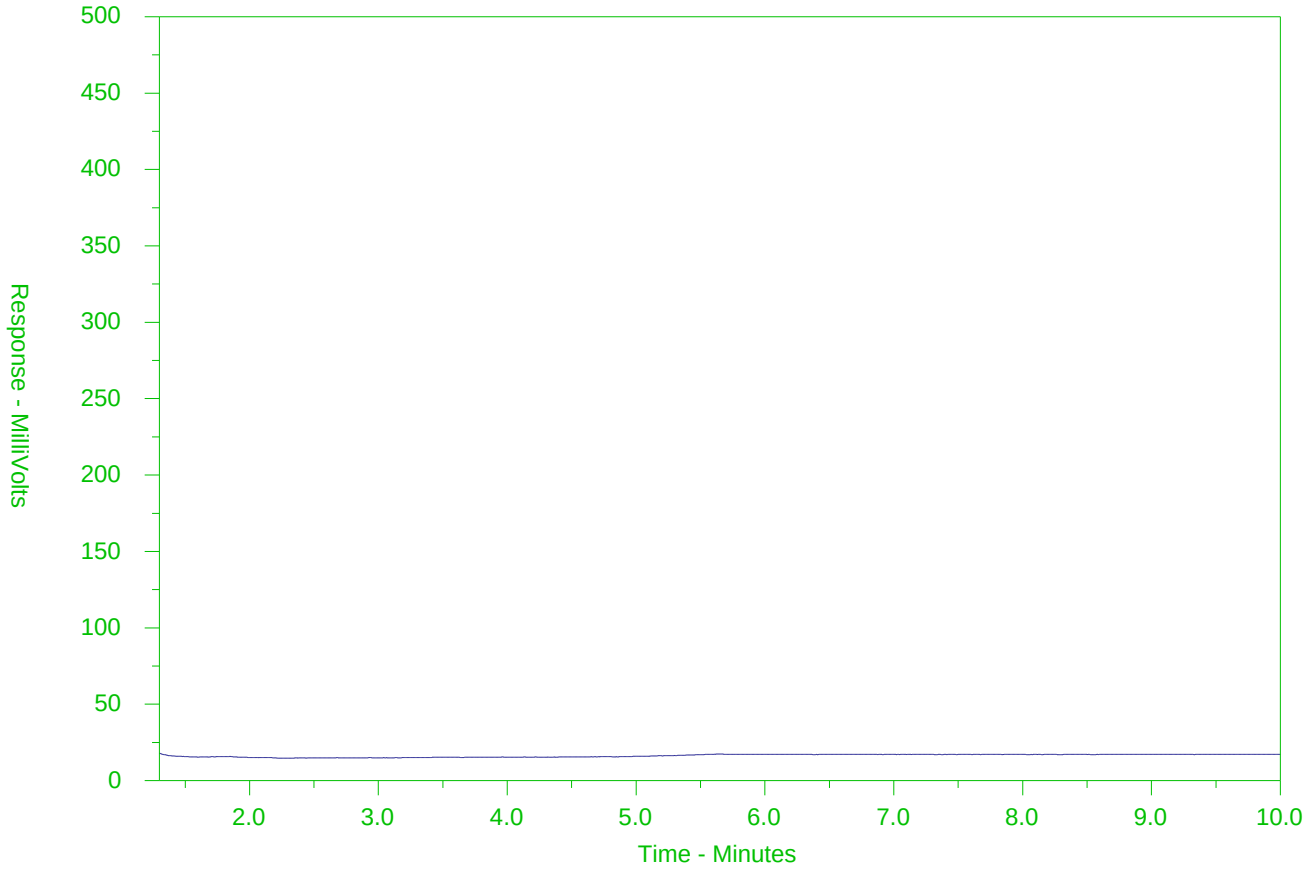
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2637321-14
Client Sample ID: EX15-21-71



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

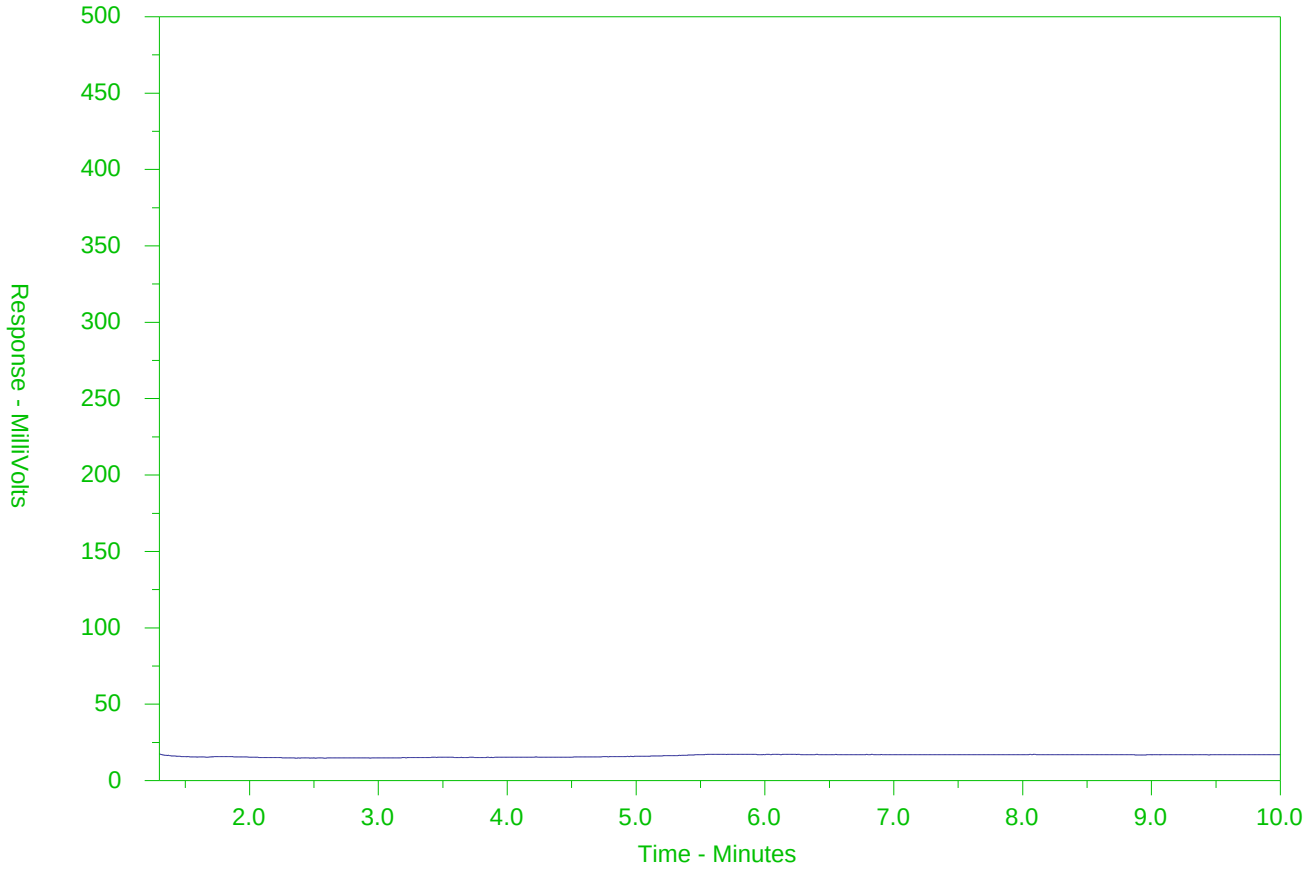
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2637321-15
Client Sample ID: EX15-21-72



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

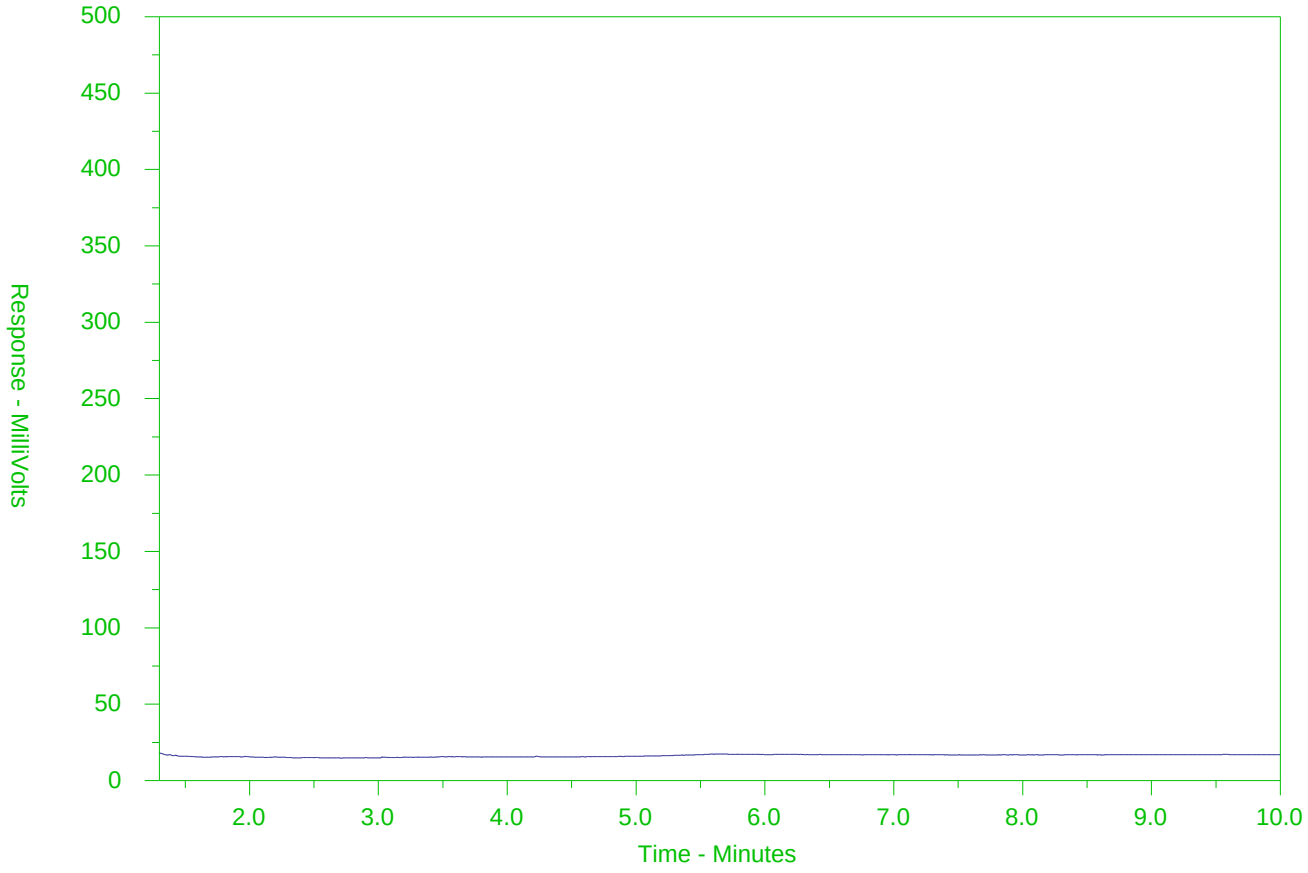
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2637321-16
Client Sample ID: EX15-21-73



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C 346°F	287°C 549°F	481°C 898°F	575°C 1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

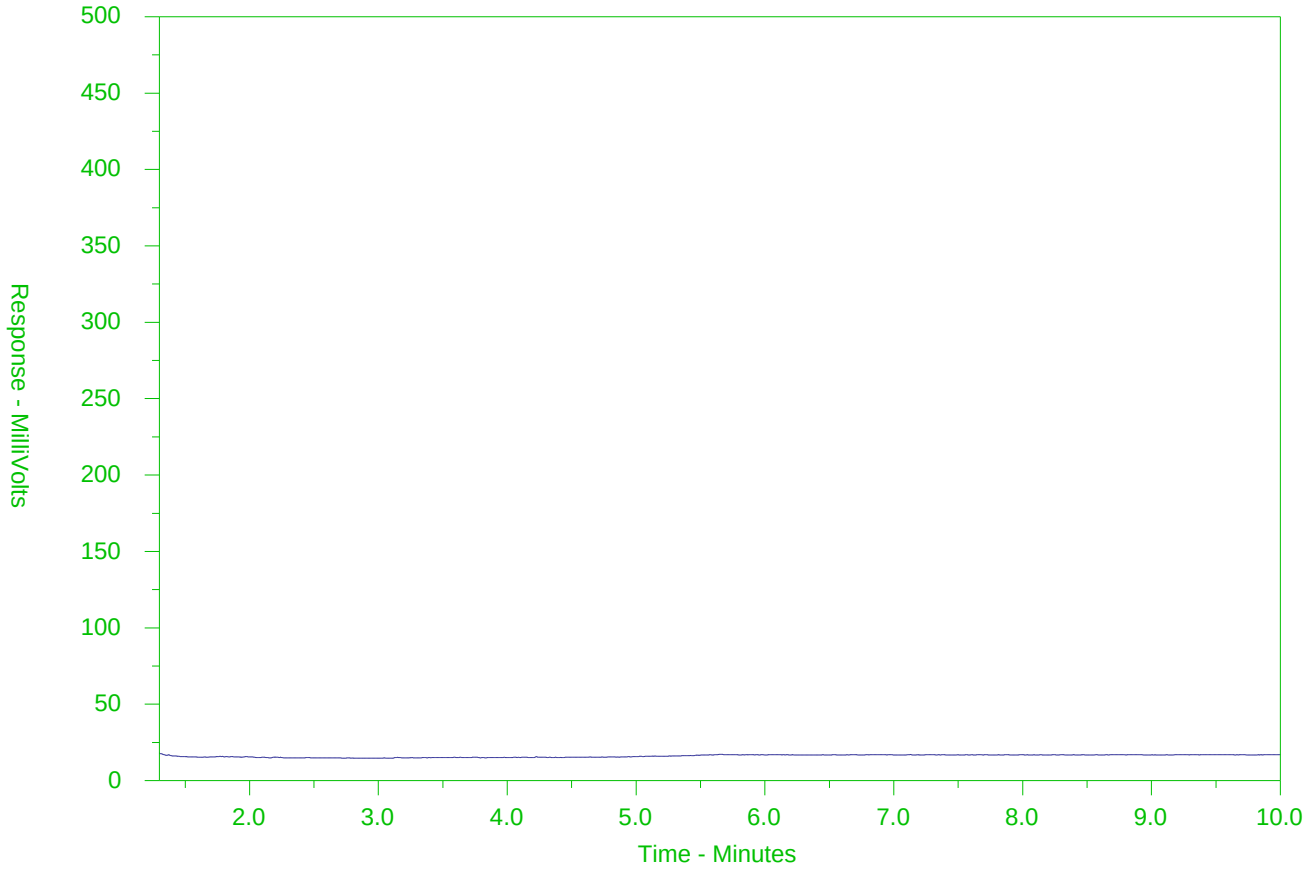
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2637321-17
Client Sample ID: EX15-21-74



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

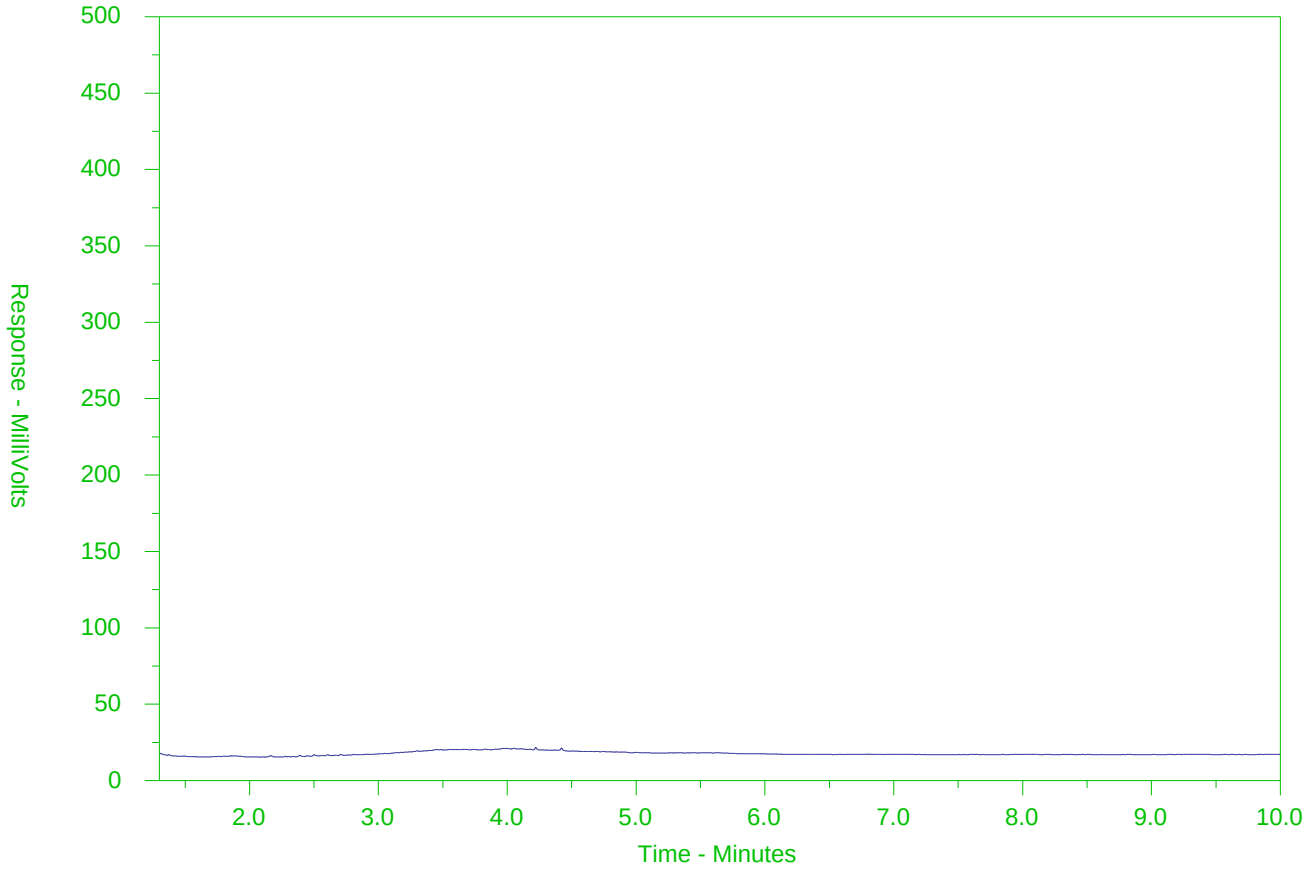
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2637321-18
Client Sample ID: EX15-21-75



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

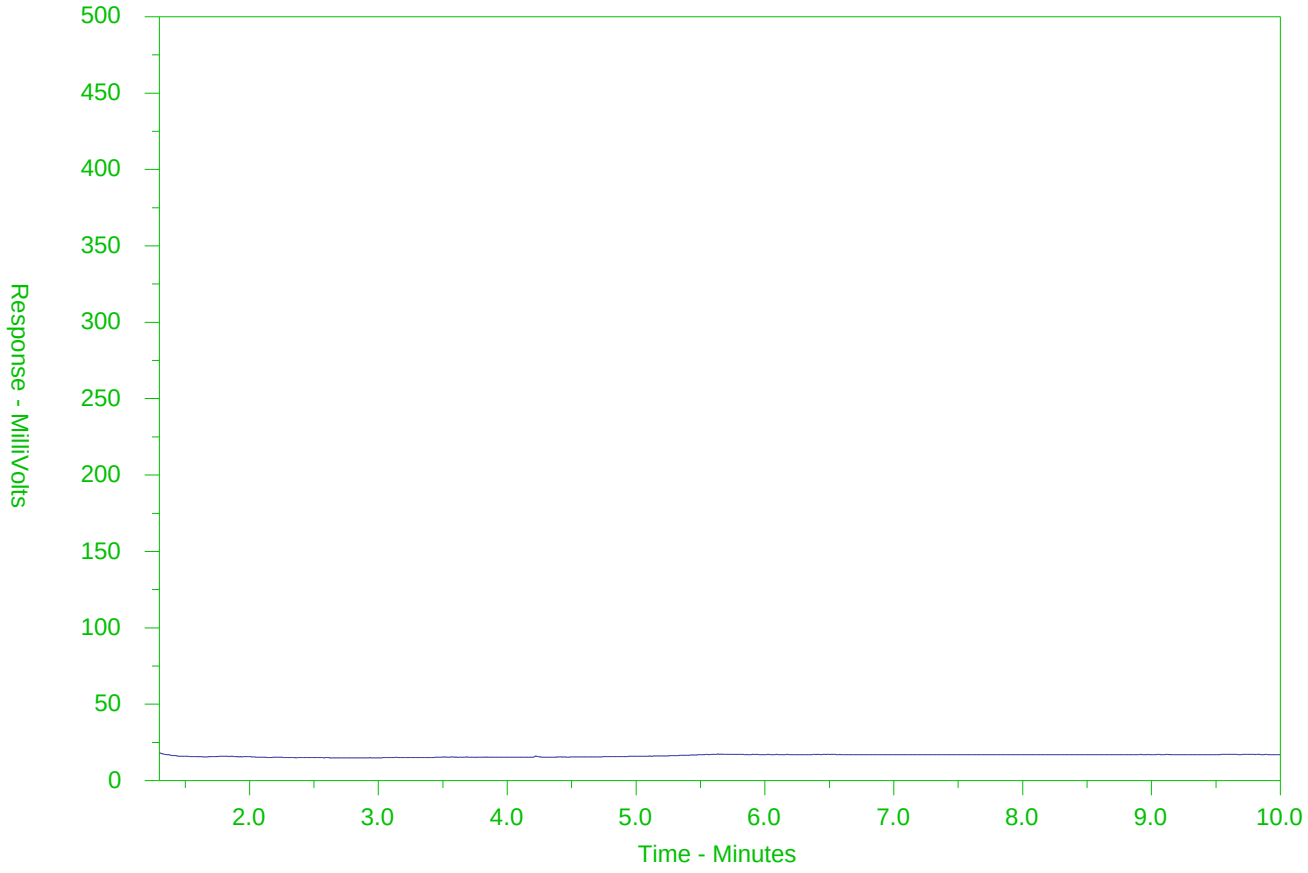
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2637321-19
Client Sample ID: EX15-21-76



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

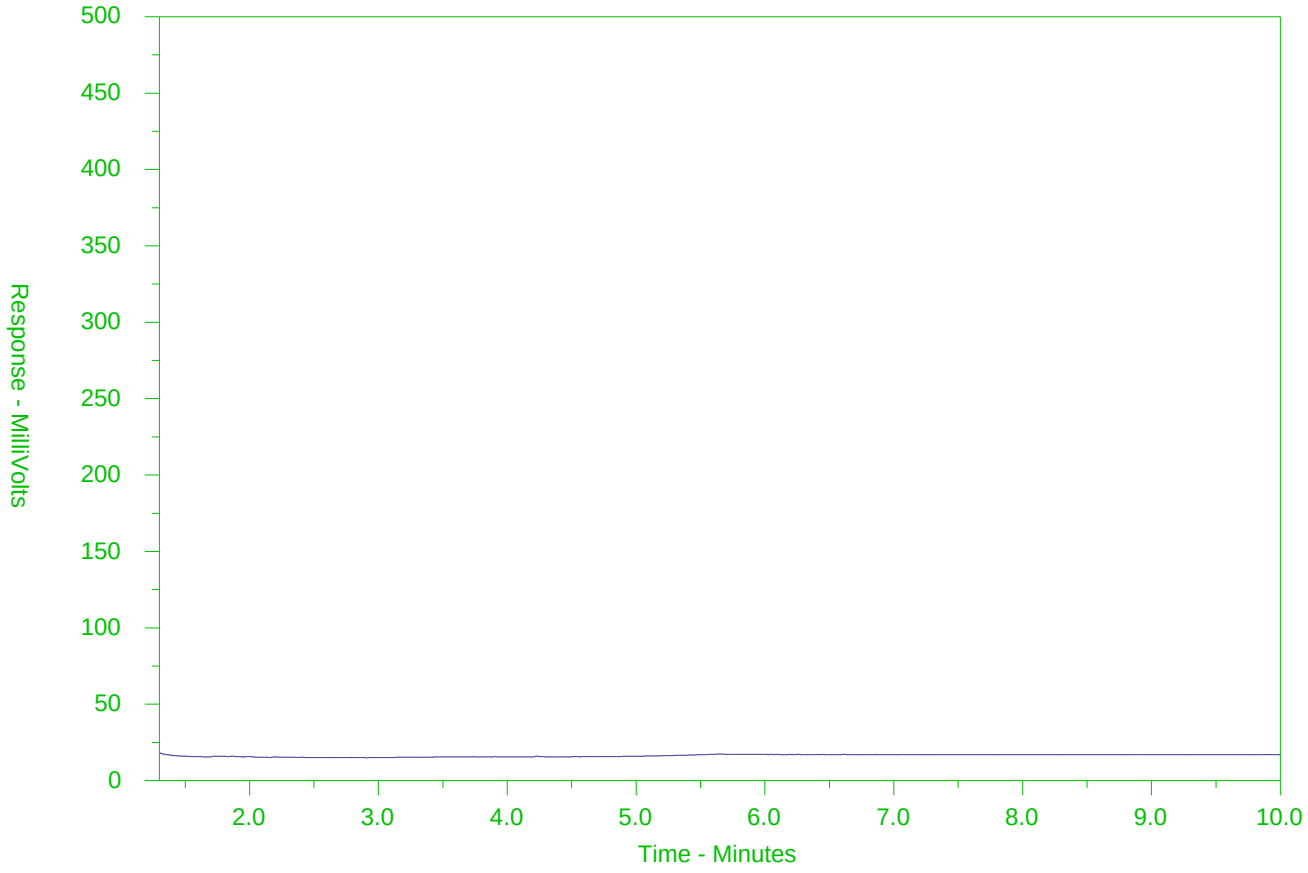
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2637321-20
Client Sample ID: EX15-21-77



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

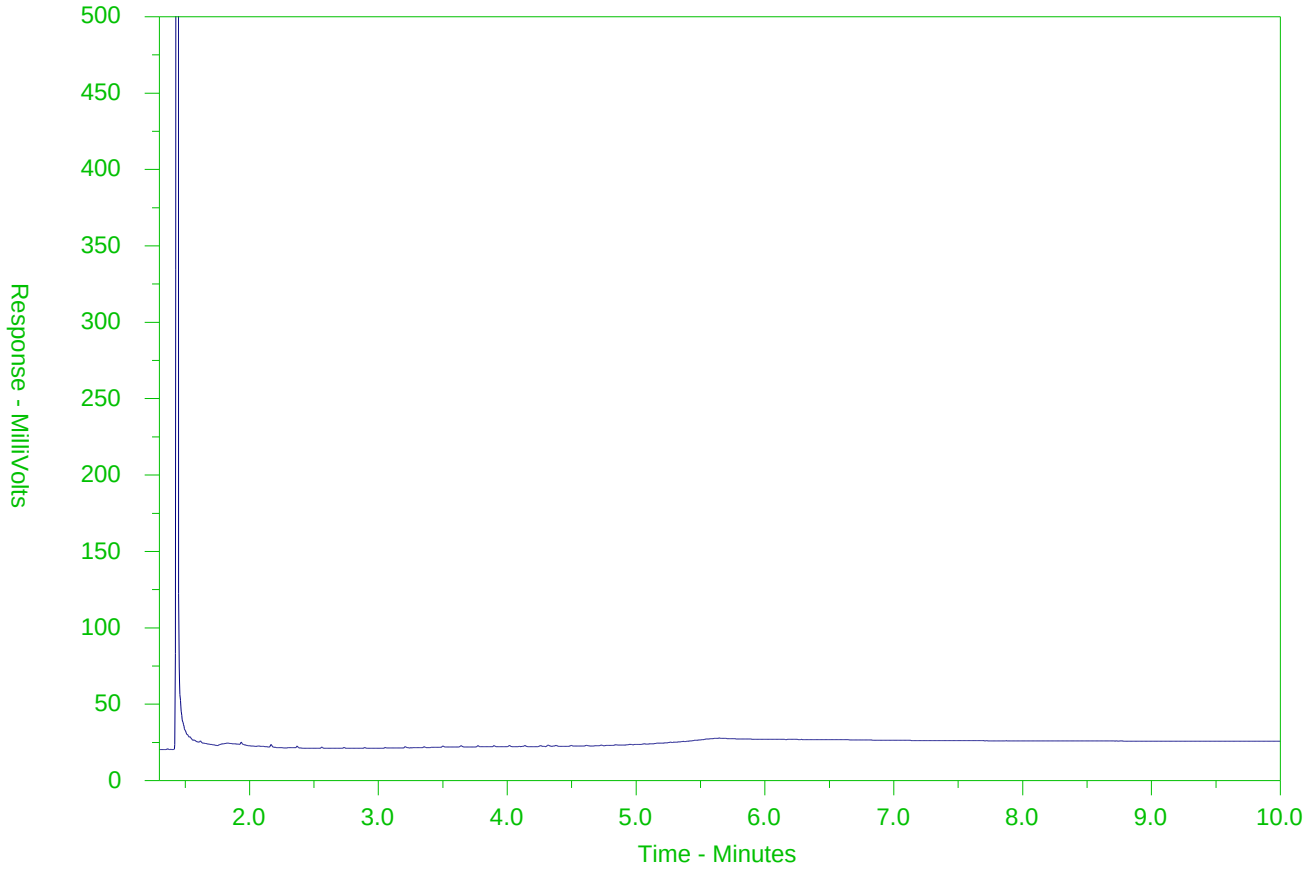
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2637321-21
Client Sample ID: EX15-21-78



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

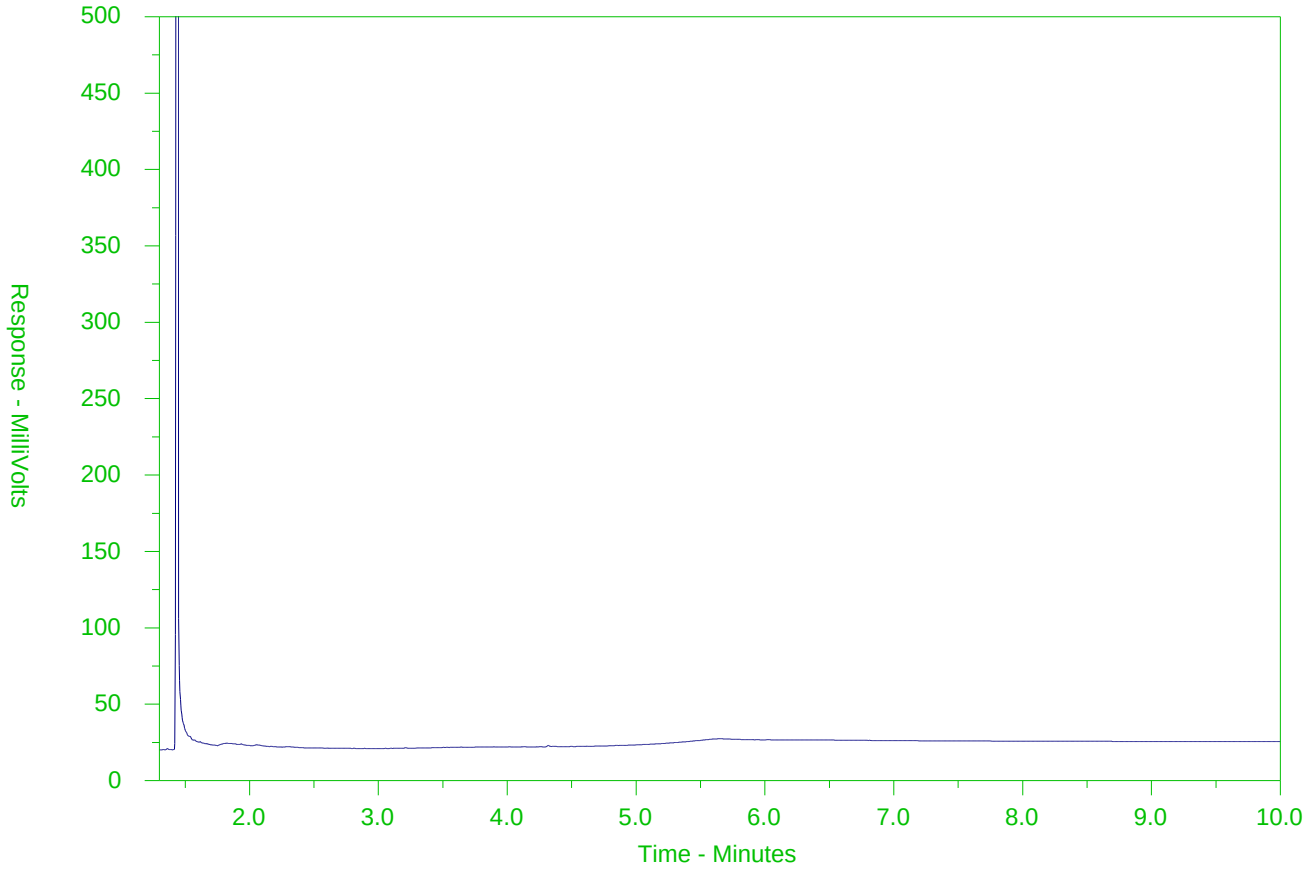
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2637321-22
Client Sample ID: EX15-21-79



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

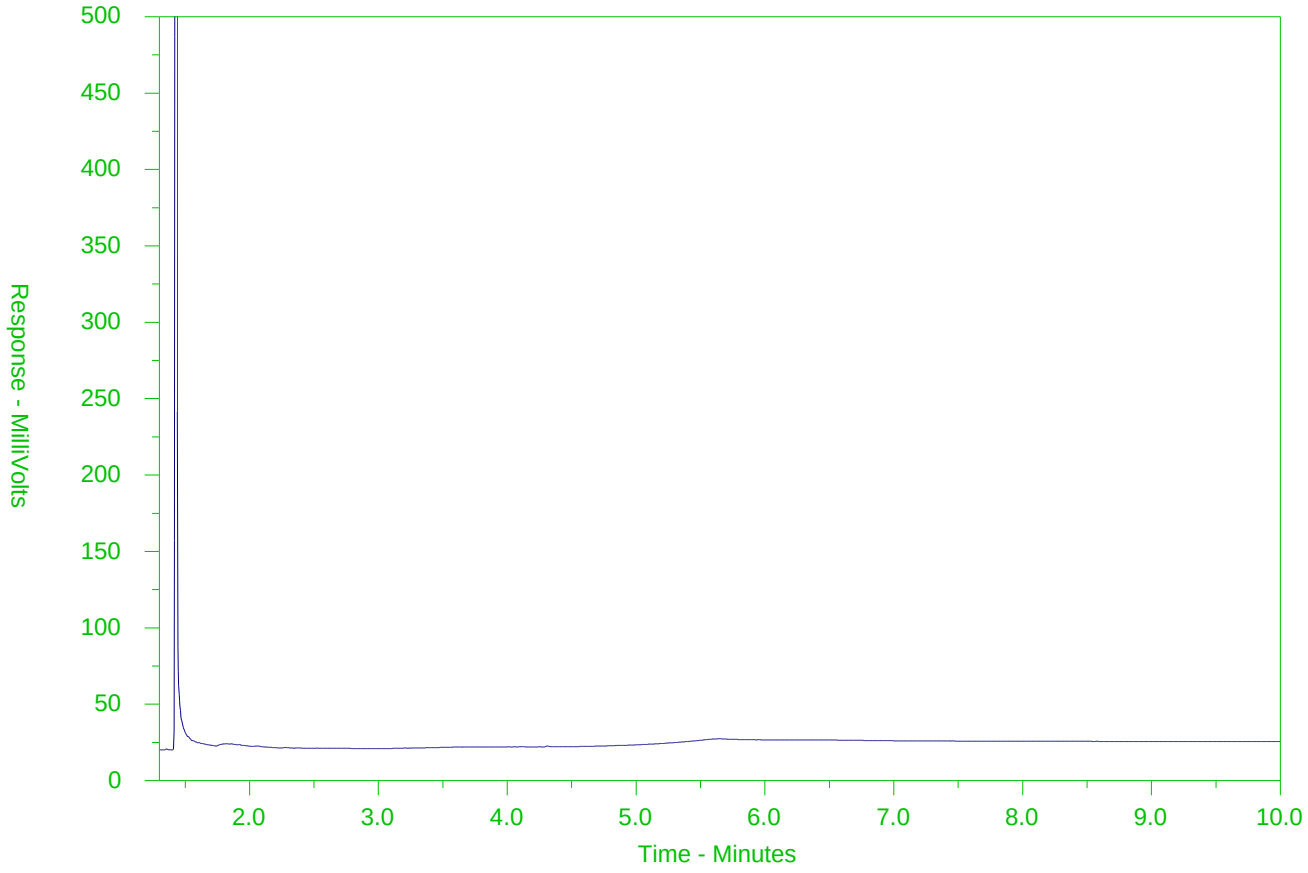
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2637321-23
Client Sample ID: EX15-21-80



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

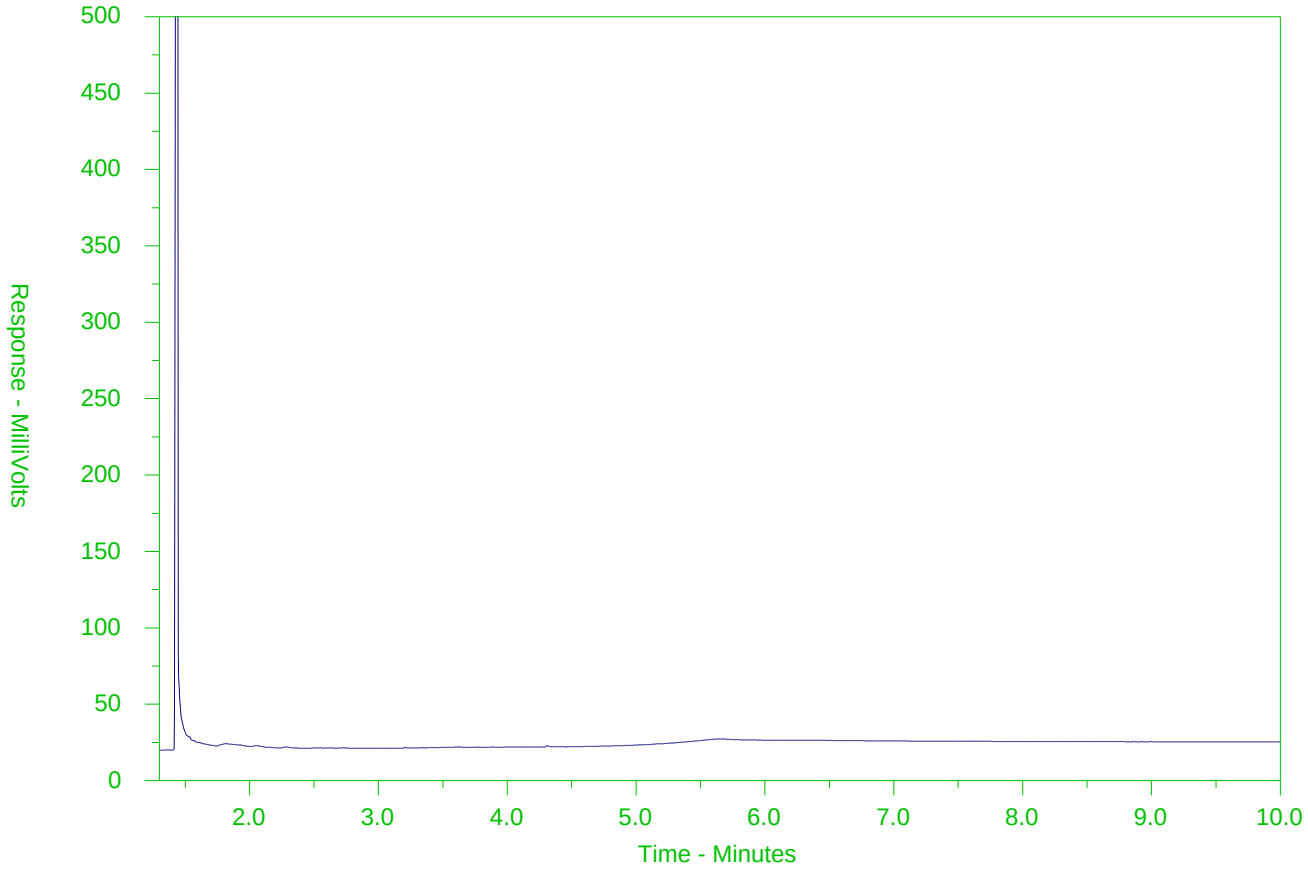
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2637321-24
Client Sample ID: EX15-21-81



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number:

Page 1 of 2

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report ☑ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax: k.lewis@mandalayresources.com
Email 2: sfiddler@golder.com
Email 3: jmusijowski@golder.com

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax:
Email 2:

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☑ | Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #: Q80711
Job #: 2044652 1
PO / AFE:
LSD: Lupin Mine

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only): L2637321

ALS Contact: Oliver Gregg Sampler:

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	Lead	Arsenic	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	EX15-21-11	07-Sep-21		Soil	4	X	X			
	EX15-21-25					X	X			
	EX15-21-29					X	X			
	EX15-21-30					X	X			
	EX15-21-45					X	X			
	EX15-21-46					X	X			
	EX15-21-47					X	X			
	EX15-21-52					X	X			
	EX15-21-55					X	X			
	EX15-21-65					X	X			
	EX15-21-65D					X	X			
	EX15-21 57					X	X			

L2637321-COFC

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO
Are samples for human consumption/ use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			

SHIPMENT RELEASE (client use)

Released by:	Date:	Time:
Rebecca Boyce RBB	Sept 8/21	9:00

INITIAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:

FINAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

OCT 2018 FRONT

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number:

Page 2 of 2

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)

Quality Control (QC) Report with Report ☑ YES ☐ NO

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax	k.lewis@mandalayresources.com
Email 2	sfiddler@golder.com
Email 3	jmusijowski@golder.com

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax	
Email 2	

Project Information

ALS Account # / Quote #:	Q80711
Job #:	20446521
PO / AFE:	
LSD:	Lupin Mine

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (lab use only):

ALS Contact: Oliver Gregg **Sampler:**

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☒ | Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	Lead	Arsenic	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	EXIS-21-69	07-Sep-21		Soil	4	X	X			
	EXIS-21-71					X	X			
	EXIS-21-72					X	X			
	EXIS-21-73					X	X			
	EXIS-21-74					X	X			
	EXIS-21-75					X	X			
	EXIS-21-76					X	X			
	EXIS-21-77					X	X			
	EXIS-21-78					X	X			
	EXIS-21-79					X	X			
	EXIS-21-80					X	X			
	EXIS-21-81					X	X			

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human consumption/ use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			

SHIPMENT RELEASE (client use)

Released by:	Date:	Time:
Rebecca Boyce	Sept 8/21	9:00

INITIAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:

FINAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCT 2018 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

GOLDER ASSOCIATES LTD
ATTN: Steven Fiddler
16820 107 Ave NW
Edmonton AB T5P 4C3

Date Received: 08-SEP-21
Report Date: 12-SEP-21 08:05 (MT)
Version: FINAL

Client Phone: 780-483-3499

Certificate of Analysis

Lab Work Order #: L2637412

Project P.O. #: NOT SUBMITTED
Job Reference: 20446521
C of C Numbers:
Legal Site Desc: LUPIN MINE

Harman Bhullar
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2637412-1 EX15-21-82							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582751
Toluene	0.501		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582751
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Surrogate: 1,4-Difluorobenzene	101.1		70-130	%	10-SEP-21	11-SEP-21	R5582751
Surrogate: 4-Bromofluorobenzene	77.0		70-130	%	10-SEP-21	11-SEP-21	R5582751
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	103.1		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		11-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	130.0		70-130	%	10-SEP-21	11-SEP-21	R5582756
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	4.08		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	4.07		0.25	%		10-SEP-21	R5582548
L2637412-2 EX15-21-83							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582751
Toluene	0.150		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582751
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Surrogate: 1,4-Difluorobenzene	90.4		70-130	%	10-SEP-21	11-SEP-21	R5582751
Surrogate: 4-Bromofluorobenzene	70.3		70-130	%	10-SEP-21	11-SEP-21	R5582751
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	102.0		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		11-SEP-21	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2637412-2 EX15-21-83							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	122.3		70-130	%	10-SEP-21	11-SEP-21	R5582756
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	4.91		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	6.46		0.25	%		10-SEP-21	R5582548
L2637412-3 EX15-21-84							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582751
Toluene	0.028		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582751
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Surrogate: 1,4-Difluorobenzene	88.4		70-130	%	10-SEP-21	11-SEP-21	R5582751
Surrogate: 4-Bromofluorobenzene	74.0		70-130	%	10-SEP-21	11-SEP-21	R5582751
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	107.0		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		11-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	113.7		70-130	%	10-SEP-21	11-SEP-21	R5582756
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	3.62		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	3.33		0.25	%		10-SEP-21	R5582548
L2637412-4 EX15-21-85							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582751
Toluene	0.334		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582751
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Surrogate: 1,4-Difluorobenzene	99.3		70-130	%	10-SEP-21	11-SEP-21	R5582751

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2637412-4 EX15-21-85							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX and Styrene							
Surrogate: 4-Bromofluorobenzene	71.7		70-130	%	10-SEP-21	11-SEP-21	R5582751
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	107.1		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		11-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	127.8		70-130	%	10-SEP-21	11-SEP-21	R5582756
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	2.42		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	3.36		0.25	%		10-SEP-21	R5582548
L2637412-5 EX15-21-86							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582751
Toluene	0.093		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582751
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Surrogate: 1,4-Difluorobenzene	88.1		70-130	%	10-SEP-21	11-SEP-21	R5582751
Surrogate: 4-Bromofluorobenzene	76.5		70-130	%	10-SEP-21	11-SEP-21	R5582751
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	106.3		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		11-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	113.5		70-130	%	10-SEP-21	11-SEP-21	R5582756
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	4.10		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2637412-5 EX15-21-86							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
Moisture	3.94		0.25	%		10-SEP-21	R5582548
L2637412-6 EX15-21-86D							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582751
Toluene	0.068		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582751
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Surrogate: 1,4-Difluorobenzene	81.4		70-130	%	10-SEP-21	11-SEP-21	R5582751
Surrogate: 4-Bromofluorobenzene	76.5		70-130	%	10-SEP-21	11-SEP-21	R5582751
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	81.9		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		11-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	93.5		70-130	%	10-SEP-21	11-SEP-21	R5582756
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	4.11		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	4.06		0.25	%		10-SEP-21	R5582548
L2637412-7 EX15-21-87							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582751
Toluene	0.205		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582751
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Surrogate: 1,4-Difluorobenzene	89.4		70-130	%	10-SEP-21	11-SEP-21	R5582751
Surrogate: 4-Bromofluorobenzene	76.6		70-130	%	10-SEP-21	11-SEP-21	R5582751
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	91.1		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2637412-7 EX15-21-87							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
CCME Total Hydrocarbons							
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		11-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	117.8		70-130	%	10-SEP-21	11-SEP-21	R5582756
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	6.87		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	2.95		0.25	%		10-SEP-21	R5582548
L2637412-8 EX15-21-89							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582751
Toluene	0.028		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582751
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Surrogate: 1,4-Difluorobenzene	90.3		70-130	%	10-SEP-21	11-SEP-21	R5582751
Surrogate: 4-Bromofluorobenzene	74.0		70-130	%	10-SEP-21	11-SEP-21	R5582751
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	83.8		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		11-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	116.3		70-130	%	10-SEP-21	11-SEP-21	R5582756
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	6.58		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	4.00		0.25	%		10-SEP-21	R5582548
L2637412-9 EX15-21-89D							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582751

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2637412-9 EX15-21-89D							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX and Styrene							
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582751
Toluene	0.037		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582751
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Surrogate: 1,4-Difluorobenzene	86.3		70-130	%	10-SEP-21	11-SEP-21	R5582751
Surrogate: 4-Bromofluorobenzene	71.8		70-130	%	10-SEP-21	11-SEP-21	R5582751
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	90.6		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		11-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	107.7		70-130	%	10-SEP-21	11-SEP-21	R5582756
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	5.75		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	5.04		0.25	%		10-SEP-21	R5582548
L2637412-10 EX15-21-88							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582751
Toluene	0.029		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582751
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Surrogate: 1,4-Difluorobenzene	90.8		70-130	%	10-SEP-21	11-SEP-21	R5582751
Surrogate: 4-Bromofluorobenzene	82.1		70-130	%	10-SEP-21	11-SEP-21	R5582751
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	81.8		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		11-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	113.9		70-130	%	10-SEP-21	11-SEP-21	R5582756

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2637412-10 EX15-21-88							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	4.46		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	5.17		0.25	%		10-SEP-21	R5582548
L2637412-11 EX15-21-90							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	0.0066		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582751
Toluene	1.12		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582751
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Surrogate: 1,4-Difluorobenzene	101.5		70-130	%	10-SEP-21	11-SEP-21	R5582751
Surrogate: 4-Bromofluorobenzene	72.8		70-130	%	10-SEP-21	11-SEP-21	R5582751
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	91.8		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		11-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	121.4		70-130	%	10-SEP-21	11-SEP-21	R5582756
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	6.37		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	5.79		0.25	%		10-SEP-21	R5582548
L2637412-12 EX15-21-92							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582751
Toluene	0.116		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582751
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Surrogate: 1,4-Difluorobenzene	91.3		70-130	%	10-SEP-21	11-SEP-21	R5582751
Surrogate: 4-Bromofluorobenzene	79.7		70-130	%	10-SEP-21	11-SEP-21	R5582751
CCME F2-4 Hydrocarbons							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2637412-12 EX15-21-92							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	97.3		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		11-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	120.0		70-130	%	10-SEP-21	11-SEP-21	R5582756
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	3.98		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	3.41		0.25	%		10-SEP-21	R5582548
L2637412-13 EX15-21-93							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582751
Toluene	0.044		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582751
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Surrogate: 1,4-Difluorobenzene	96.4		70-130	%	10-SEP-21	11-SEP-21	R5582751
Surrogate: 4-Bromofluorobenzene	85.1		70-130	%	10-SEP-21	11-SEP-21	R5582751
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	88.0		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		11-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	121.3		70-130	%	10-SEP-21	11-SEP-21	R5582756
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	2.83		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	3.93		0.25	%		10-SEP-21	R5582548

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2637412-14 EX15-21-93D							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582751
Toluene	0.062		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582751
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Surrogate: 1,4-Difluorobenzene	87.7		70-130	%	10-SEP-21	11-SEP-21	R5582751
Surrogate: 4-Bromofluorobenzene	74.2		70-130	%	10-SEP-21	11-SEP-21	R5582751
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	89.9		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		11-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	111.8		70-130	%	10-SEP-21	11-SEP-21	R5582756
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	2.50		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	5.76		0.25	%		10-SEP-21	R5582548
L2637412-15 EX15-21-94							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582751
Toluene	0.043		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582751
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Surrogate: 1,4-Difluorobenzene	93.2		70-130	%	10-SEP-21	11-SEP-21	R5582751
Surrogate: 4-Bromofluorobenzene	80.0		70-130	%	10-SEP-21	11-SEP-21	R5582751
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	95.8		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		11-SEP-21	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2637412-15 EX15-21-94							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	101.9		70-130	%	10-SEP-21	11-SEP-21	R5582756
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	7.26		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	6.64		0.25	%		10-SEP-21	R5582548
L2637412-16 EX15-21-91							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582751
Toluene	0.239		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582751
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Surrogate: 1,4-Difluorobenzene	102.7		70-130	%	10-SEP-21	11-SEP-21	R5582751
Surrogate: 4-Bromofluorobenzene	70.8		70-130	%	10-SEP-21	11-SEP-21	R5582751
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	81.2		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		11-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	127.4		70-130	%	10-SEP-21	11-SEP-21	R5582756
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	2.72		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	6.20		0.25	%		10-SEP-21	R5582548
L2637412-17 EX15-21-95							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582751
Toluene	0.051		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582751
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Surrogate: 1,4-Difluorobenzene	103.7		70-130	%	10-SEP-21	11-SEP-21	R5582751

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2637412-17 EX15-21-95							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX and Styrene							
Surrogate: 4-Bromofluorobenzene	70.8		70-130	%	10-SEP-21	11-SEP-21	R5582751
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	85.3		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		11-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	115.9		70-130	%	10-SEP-21	11-SEP-21	R5582756
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	7.43		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	5.98		0.25	%		10-SEP-21	R5582564
L2637412-18 EX15-21-96							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582751
Toluene	0.216		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582751
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Surrogate: 1,4-Difluorobenzene	107.6		70-130	%	10-SEP-21	11-SEP-21	R5582751
Surrogate: 4-Bromofluorobenzene	75.3		70-130	%	10-SEP-21	11-SEP-21	R5582751
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	85.2		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		11-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	118.0		70-130	%	10-SEP-21	11-SEP-21	R5582756
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	4.44		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2637412-18 EX15-21-96							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
Moisture	6.35		0.25	%		10-SEP-21	R5582564
L2637412-19 EX15-21-97							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582751
Toluene	<0.014		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582751
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Surrogate: 1,4-Difluorobenzene	99.6		70-130	%	10-SEP-21	11-SEP-21	R5582751
Surrogate: 4-Bromofluorobenzene	72.1		70-130	%	10-SEP-21	11-SEP-21	R5582751
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	85.7		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		11-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	115.0		70-130	%	10-SEP-21	11-SEP-21	R5582756
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	4.31		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	5.06		0.25	%		10-SEP-21	R5582564
L2637412-20 EX15-21-98							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	0.0080		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582751
Toluene	0.041		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582751
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Surrogate: 1,4-Difluorobenzene	115.8		70-130	%	10-SEP-21	11-SEP-21	R5582751
Surrogate: 4-Bromofluorobenzene	82.0		70-130	%	10-SEP-21	11-SEP-21	R5582751
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	82.6		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2637412-20 EX15-21-98							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
CCME Total Hydrocarbons							
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	68		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	68		50	mg/kg		11-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	127.4		70-130	%	10-SEP-21	11-SEP-21	R5582756
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	3.97		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	3.91		0.25	%		10-SEP-21	R5582564
L2637412-21 EX15-21-99							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050	VOCJ	0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Ethylbenzene	<0.015	VOCJ	0.015	mg/kg	10-SEP-21	11-SEP-21	R5582751
Toluene	<0.014	VOCJ	0.014	mg/kg	10-SEP-21	11-SEP-21	R5582751
o-Xylene	<0.050	VOCJ	0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
m+p-Xylene	<0.050	VOCJ	0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Surrogate: 1,4-Difluorobenzene	94.9		70-130	%	10-SEP-21	11-SEP-21	R5582751
Surrogate: 4-Bromofluorobenzene	87.3		70-130	%	10-SEP-21	11-SEP-21	R5582751
Note: Sample was weighed out from Jar							
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	81.3		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	95		50	mg/kg		11-SEP-21	
F4 (C34-C50)	57		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	152		50	mg/kg		11-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	95.7		70-130	%	10-SEP-21	11-SEP-21	R5582756
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	2.57		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	3.93		0.25	%		10-SEP-21	R5582564
L2637412-22 EX15-21-100							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2637412-22 EX15-21-100							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582751
Toluene	<0.014		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582751
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Surrogate: 1,4-Difluorobenzene	101.1		70-130	%	10-SEP-21	11-SEP-21	R5582751
Surrogate: 4-Bromofluorobenzene	70.8		70-130	%	10-SEP-21	11-SEP-21	R5582751
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	86.1		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		11-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	113.9		70-130	%	10-SEP-21	11-SEP-21	R5582756
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	3.28		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	3.35		0.25	%		10-SEP-21	R5582564
L2637412-23 EX15-21-102							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582751
Toluene	<0.014		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582751
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Surrogate: 1,4-Difluorobenzene	96.8		70-130	%	10-SEP-21	11-SEP-21	R5582751
Surrogate: 4-Bromofluorobenzene	73.9		70-130	%	10-SEP-21	11-SEP-21	R5582751
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	86.7		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		11-SEP-21	
F1(C6-C10)							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2637412-23 EX15-21-102							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	111.7		70-130	%	10-SEP-21	11-SEP-21	R5582756
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	12.1		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	5.75		0.25	%		10-SEP-21	R5582564
L2637412-24 EX15-21-104							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	0.0093		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582751
Toluene	0.033		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582751
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Surrogate: 1,4-Difluorobenzene	102.3		70-130	%	10-SEP-21	11-SEP-21	R5582751
Surrogate: 4-Bromofluorobenzene	79.2		70-130	%	10-SEP-21	11-SEP-21	R5582751
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	85.3		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		11-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	107.4		70-130	%	10-SEP-21	11-SEP-21	R5582756
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	12.8		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	6.09		0.25	%		10-SEP-21	R5582564
L2637412-25 EX15-21-106							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582751
Toluene	<0.014		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582751
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Surrogate: 1,4-Difluorobenzene	82.3		70-130	%	10-SEP-21	11-SEP-21	R5582751

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2637412-25 EX15-21-106							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX and Styrene							
Surrogate: 4-Bromofluorobenzene	76.9		70-130	%	10-SEP-21	11-SEP-21	R5582751
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	86.3		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		11-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	89.0		70-130	%	10-SEP-21	11-SEP-21	R5582756
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	88.6		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	7.95		0.25	%		10-SEP-21	R5582564
L2637412-26 EX15-21-106D							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582751
Toluene	<0.014		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582751
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Surrogate: 1,4-Difluorobenzene	106.1		70-130	%	10-SEP-21	11-SEP-21	R5582751
Surrogate: 4-Bromofluorobenzene	74.8		70-130	%	10-SEP-21	11-SEP-21	R5582751
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	88.6		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		11-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	121.3		70-130	%	10-SEP-21	11-SEP-21	R5582756
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	87.2		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2637412-26 EX15-21-106D							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
Moisture	8.21		0.25	%		10-SEP-21	R5582564
L2637412-27 EX15-21-108							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582751
Toluene	<0.014		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582751
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Surrogate: 1,4-Difluorobenzene	98.5		70-130	%	10-SEP-21	11-SEP-21	R5582751
Surrogate: 4-Bromofluorobenzene	76.3		70-130	%	10-SEP-21	11-SEP-21	R5582751
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	80.0		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	35		25	mg/kg		11-SEP-21	
F3 (C16-C34)	62		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	97		50	mg/kg		11-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	106.9		70-130	%	10-SEP-21	11-SEP-21	R5582756
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	6.48		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	4.53		0.25	%		10-SEP-21	R5582564
L2637412-28 EX15-21-110							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582751
Toluene	<0.014		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582751
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Surrogate: 1,4-Difluorobenzene	93.3		70-130	%	10-SEP-21	11-SEP-21	R5582751
Surrogate: 4-Bromofluorobenzene	76.6		70-130	%	10-SEP-21	11-SEP-21	R5582751
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	92.7		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2637412-28 EX15-21-110							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
CCME Total Hydrocarbons							
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		11-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	101.8		70-130	%	10-SEP-21	11-SEP-21	R5582756
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	3.25		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	5.20		0.25	%		10-SEP-21	R5582564
L2637412-29 EX15-21-111							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582751
Toluene	<0.014		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582751
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Surrogate: 1,4-Difluorobenzene	103.5		70-130	%	10-SEP-21	11-SEP-21	R5582751
Surrogate: 4-Bromofluorobenzene	71.4		70-130	%	10-SEP-21	11-SEP-21	R5582751
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	93.4		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		11-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	110.6		70-130	%	10-SEP-21	11-SEP-21	R5582756
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	2.53		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	4.94		0.25	%		10-SEP-21	R5582564
L2637412-30 EX15-21-112							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	10-SEP-21	11-SEP-21	R5582751

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2637412-30 EX15-21-112							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX and Styrene							
Ethylbenzene	<0.015		0.015	mg/kg	10-SEP-21	11-SEP-21	R5582751
Toluene	<0.014		0.014	mg/kg	10-SEP-21	11-SEP-21	R5582751
o-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
m+p-Xylene	<0.050		0.050	mg/kg	10-SEP-21	11-SEP-21	R5582751
Surrogate: 1,4-Difluorobenzene	101.4		70-130	%	10-SEP-21	11-SEP-21	R5582751
Surrogate: 4-Bromofluorobenzene	81.7		70-130	%	10-SEP-21	11-SEP-21	R5582751
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-SEP-21	11-SEP-21	R5582622
Prep/Analysis Dates					10-SEP-21	11-SEP-21	R5582622
Surrogate: 2-Bromobenzotrifluoride	89.2		70-130	%	10-SEP-21	11-SEP-21	R5582622
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		11-SEP-21	
F1-BTEX	<10		10	mg/kg		11-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		11-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		11-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		11-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		11-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	95.9		70-130	%	10-SEP-21	11-SEP-21	R5582756
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		11-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	8.74		0.50	mg/kg	11-SEP-21	11-SEP-21	R5582823
Miscellaneous Parameters							
Moisture	8.32		0.25	%		10-SEP-21	R5582564

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
VOCJ	Soil jar was submitted as VOC sample container. VOC results may be biased low, and do not meet federal (CCME) or provincial requirements (for BC, AB-Tier1, MB, ON, SK).

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BTXS-MEOH-HS-MS-CL	Soil	BTEX and Styrene	EPA 8260C/5021A

The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. Target compound concentrations are measured using mass spectrometry detection.

F1-4-CALC-CL	Soil	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-MEOH-HS-FID-CL	Soil	F1(C6-C10)	CWS PHC Tier 1

The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. The F1 fraction concentration is measured using flame ionization detection.

F2-4-TMB-H/A-FID-CL	Soil	CCME F2-4 Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

This analysis is carried out in accordance with the "Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method, Canadian Council of Ministers of the Environment, December 2001." For C10 to C50 hydrocarbons (F2, F3, F4) and gravimetric heavy hydrocarbons (F4G-sg), a subsample of the sediment/soil is extracted with 1:1 hexane:acetone using a rotary extractor. The extract undergoes a silica-gel clean-up to remove polar compounds. F2, F3 & F4 are analyzed by on-column GC/FID, and F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where F4 (C34-C50) and F4G-sg results are reported for a sample, the larger of the reported values is used for comparison against the relevant CCME standard for F4.
7. The gravimetric heavy hydrocarbon results (F4G-sg), cannot be added to the C6 to C50 hydrocarbon results.
8. This method is validated for use.
9. Data from analysis of quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram.

MET-200.2-CCMS-ED	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020A (mod)

Soil/sediment is dried, disaggregated, and sieved (2 mm). Strong Acid Leachable Metals in the <2mm fraction are solubilized by heated digestion with nitric and hydrochloric acids. Instrumental analysis is by Collision / Reaction Cell ICPMS.

Limitations: This method is intended to liberate environmentally available metals. Silicate minerals are not solubilized. Some metals may be only partially recovered (matrix dependent), including Al, Ba, Be, Cr, S, Sr, Ti, Tl, V, W, and Zr. Elemental Sulfur may be poorly recovered by this method. Volatile forms of sulfur (e.g. sulfide, H2S) may be excluded if lost during sampling, storage, or digestion.

MOISTURE-CL	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
This analysis is carried out gravimetrically by drying the sample at 105 C			
XYLENES-SUM-CALC-CL	Soil	Sum of Xylene Isomer Concentrations	CALCULATED RESULT
Total xylenes represents the sum of o-xylene and m&p-xylene.			

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
ED	ALS ENVIRONMENTAL - EDMONTON, ALBERTA, CANADA
CL	ALS ENVIRONMENTAL - CALGARY, ALBERTA, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Client: GOLDER ASSOCIATES LTD
16820 107 Ave NW
Edmonton AB T5P 4C3
Contact: Steven Fiddler

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTXS-MEOH-HS-MS-CL	**Soil**							
Batch R5582751								
WG3615192-3 DUP		**L2637412-17**						
Benzene		<0.0050	<0.0050	RPD-NA	mg/kg	N/A	30	11-SEP-21
Ethylbenzene		<0.015	<0.015	RPD-NA	mg/kg	N/A	30	11-SEP-21
Toluene		0.051	0.050		mg/kg	2.5	30	11-SEP-21
o-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	11-SEP-21
m+p-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	11-SEP-21
WG3615192-4 DUP		**L2637412-21**						
Benzene		<0.0050	<0.0050	RPD-NA	mg/kg	N/A	30	11-SEP-21
Ethylbenzene		<0.015	<0.015	RPD-NA	mg/kg	N/A	30	11-SEP-21
Toluene		<0.014	<0.014	RPD-NA	mg/kg	N/A	30	11-SEP-21
o-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	11-SEP-21
m+p-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	11-SEP-21
WG3615185-2 LCS								
Benzene			121.4		%		70-130	11-SEP-21
Ethylbenzene			102.0		%		70-130	11-SEP-21
Toluene			102.8		%		70-130	11-SEP-21
o-Xylene			121.3		%		70-130	11-SEP-21
m+p-Xylene			112.0		%		70-130	11-SEP-21
WG3615192-2 LCS								
Benzene			106.9		%		70-130	11-SEP-21
Ethylbenzene			75.5		%		70-130	11-SEP-21
Toluene			81.2		%		70-130	11-SEP-21
o-Xylene			94.3		%		70-130	11-SEP-21
m+p-Xylene			85.8		%		70-130	11-SEP-21
WG3615185-1 MB								
Benzene			<0.0050		mg/kg		0.005	11-SEP-21
Ethylbenzene			<0.015		mg/kg		0.015	11-SEP-21
Toluene			<0.014		mg/kg		0.014	11-SEP-21
o-Xylene			<0.050		mg/kg		0.05	11-SEP-21
m+p-Xylene			<0.050		mg/kg		0.05	11-SEP-21
Surrogate: 1,4-Difluorobenzene			97.5		%		70-130	11-SEP-21
Surrogate: 4-Bromofluorobenzene			71.4		%		70-130	11-SEP-21
WG3615192-1 MB								
Benzene			<0.0050		mg/kg		0.005	11-SEP-21
Ethylbenzene			<0.015		mg/kg		0.015	11-SEP-21
Toluene			<0.014		mg/kg		0.014	11-SEP-21

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTXS-MEOH-HS-MS-CL	**Soil**							
Batch R5582751								
WG3615192-1 MB								
o-Xylene			<0.050		mg/kg		0.05	11-SEP-21
m+p-Xylene			<0.050		mg/kg		0.05	11-SEP-21
Surrogate: 1,4-Difluorobenzene			93.8		%		70-130	11-SEP-21
Surrogate: 4-Bromofluorobenzene			83.0		%		70-130	11-SEP-21
F1-MEOH-HS-FID-CL	**Soil**							
Batch R5582756								
WG3615192-3 DUP		**L2637412-17**						
F1(C6-C10)		<10	<10	RPD-NA	mg/kg	N/A	30	11-SEP-21
WG3615192-4 DUP		**L2637412-21**						
F1(C6-C10)		<10	<10	RPD-NA	mg/kg	N/A	30	11-SEP-21
WG3615185-2 LCS								
F1(C6-C10)			111.1		%		70-130	11-SEP-21
WG3615192-2 LCS								
F1(C6-C10)			85.9		%		70-130	11-SEP-21
WG3615185-1 MB								
F1(C6-C10)			<10		mg/kg		10	11-SEP-21
Surrogate: 3,4-Dichlorotoluene			97.5		%		70-130	11-SEP-21
WG3615192-1 MB								
F1(C6-C10)			<10		mg/kg		10	11-SEP-21
Surrogate: 3,4-Dichlorotoluene			90.0		%		70-130	11-SEP-21
F2-4-TMB-H/A-FID-CL	**Soil**							
Batch R5582622								
WG3615168-4 DUP		**L2637412-1**						
F2: (C10-C16)		<25	<25	RPD-NA	mg/kg	N/A	40	11-SEP-21
F3: (C16-C34)		<50	<50	RPD-NA	mg/kg	N/A	40	11-SEP-21
F4: (C34-C50)		<50	<50	RPD-NA	mg/kg	N/A	40	11-SEP-21
WG3615190-4 DUP		**L2637412-17**						
F2: (C10-C16)		<25	<25	RPD-NA	mg/kg	N/A	40	11-SEP-21
F3: (C16-C34)		<50	<50	RPD-NA	mg/kg	N/A	40	11-SEP-21
F4: (C34-C50)		<50	<50	RPD-NA	mg/kg	N/A	40	11-SEP-21
WG3615168-3 IRM		**ALS PHC3 RM**						
F2: (C10-C16)			101.4		%		70-130	11-SEP-21
F3: (C16-C34)			120.7		%		70-130	11-SEP-21
F4: (C34-C50)			114.6		%		70-130	11-SEP-21
WG3615190-3 IRM		**ALS PHC3 RM**						
F2: (C10-C16)			111.5		%		70-130	11-SEP-21

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-4-TMB-H/A-FID-CL	**Soil**							
Batch R5582622								
WG3615190-3 IRM		**ALS PHC3 RM**						
F3: (C16-C34)			103.8		%		70-130	11-SEP-21
F4: (C34-C50)			71.1		%		70-130	11-SEP-21
WG3615168-2 LCS								
F2: (C10-C16)			105.8		%		70-130	11-SEP-21
F3: (C16-C34)			111.6		%		70-130	11-SEP-21
F4: (C34-C50)			118.0		%		70-130	11-SEP-21
WG3615190-2 LCS								
F2: (C10-C16)			103.1		%		70-130	11-SEP-21
F3: (C16-C34)			104.1		%		70-130	11-SEP-21
F4: (C34-C50)			88.0		%		70-130	11-SEP-21
WG3615168-1 MB								
F2: (C10-C16)			<25		mg/kg		25	11-SEP-21
F3: (C16-C34)			<50		mg/kg		50	11-SEP-21
F4: (C34-C50)			<50		mg/kg		50	11-SEP-21
Surrogate: 2-Bromobenzotrifluoride			113.9		%		70-130	11-SEP-21
WG3615190-1 MB								
F2: (C10-C16)			<25		mg/kg		25	11-SEP-21
F3: (C16-C34)			<50		mg/kg		50	11-SEP-21
F4: (C34-C50)			<50		mg/kg		50	11-SEP-21
Surrogate: 2-Bromobenzotrifluoride			87.4		%		70-130	11-SEP-21
MET-200.2-CCMS-ED	**Soil**							
Batch R5582823								
WG3615482-3 CRM		**SCP_SS-2_SOIL**						
Lead (Pb)			100.6		%		70-130	11-SEP-21
WG3615548-3 CRM		**SCP_SS-2_SOIL**						
Lead (Pb)			98.9		%		70-130	11-SEP-21
WG3615548-4 DUP		**L2637412-17**						
Lead (Pb)		7.43	8.08		mg/kg	8.4	40	11-SEP-21
WG3615482-2 LCS								
Lead (Pb)			105.2		%		80-120	11-SEP-21
WG3615548-2 LCS								
Lead (Pb)			102.6		%		80-120	11-SEP-21
WG3615482-1 MB								
Lead (Pb)			<0.50		mg/kg		0.5	11-SEP-21
WG3615548-1 MB								
Lead (Pb)			<0.50		mg/kg		0.5	11-SEP-21

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MOISTURE-CL	**Soil**							
Batch R5582548								
WG3615177-3 DUP		**L2637412-1**						
Moisture		4.07	3.98		%	2.4	20	10-SEP-21
WG3615177-2 LCS								
Moisture			99.3		%		90-110	10-SEP-21
WG3615177-1 MB								
Moisture			<0.25		%		0.25	10-SEP-21
Batch R5582564								
WG3615191-3 DUP		**L2637412-17**						
Moisture		5.98	5.37		%	11	20	10-SEP-21
WG3615191-2 LCS								
Moisture			98.0		%		90-110	10-SEP-21
WG3615191-1 MB								
Moisture			<0.25		%		0.25	10-SEP-21

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

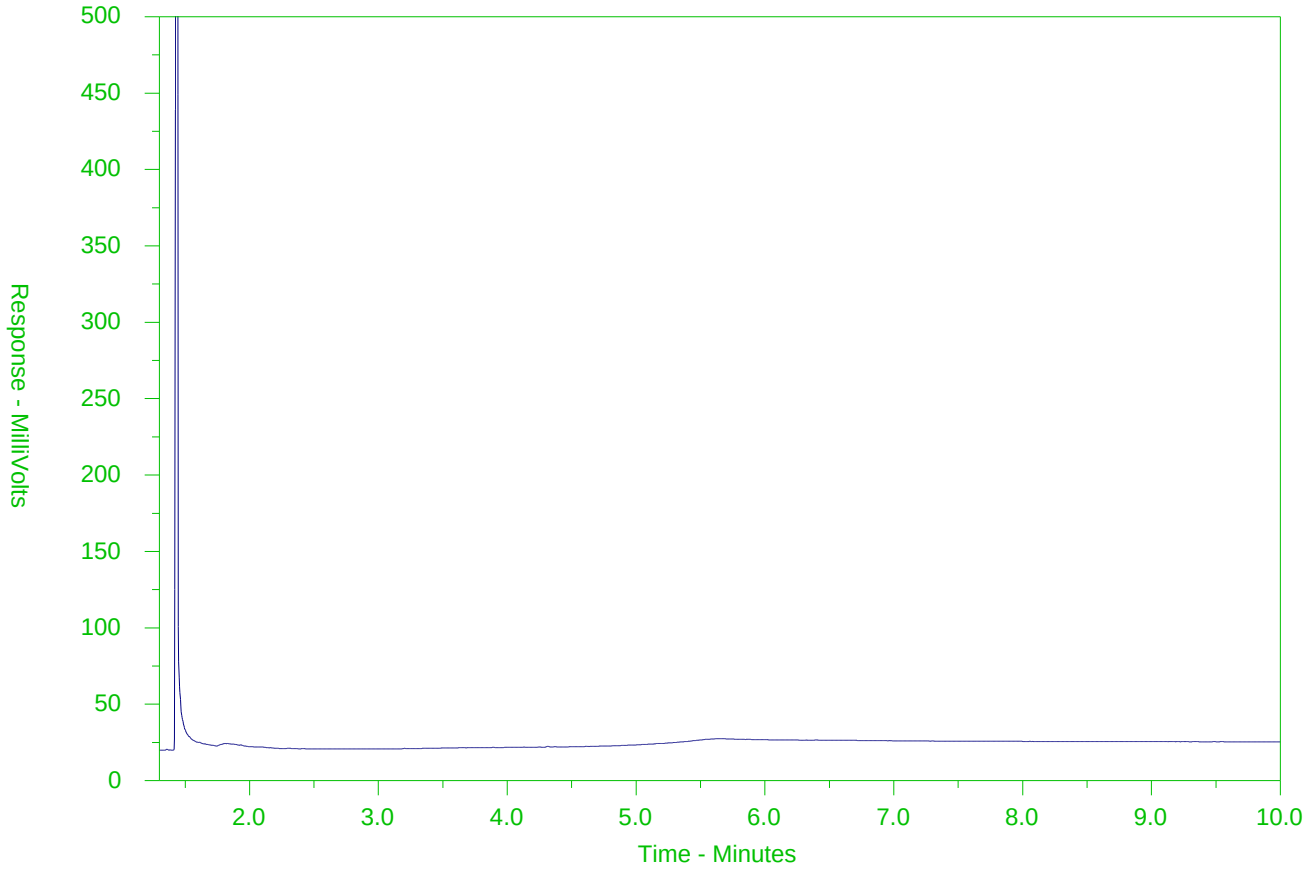
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2637412-1
Client Sample ID: EX15-21-82



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

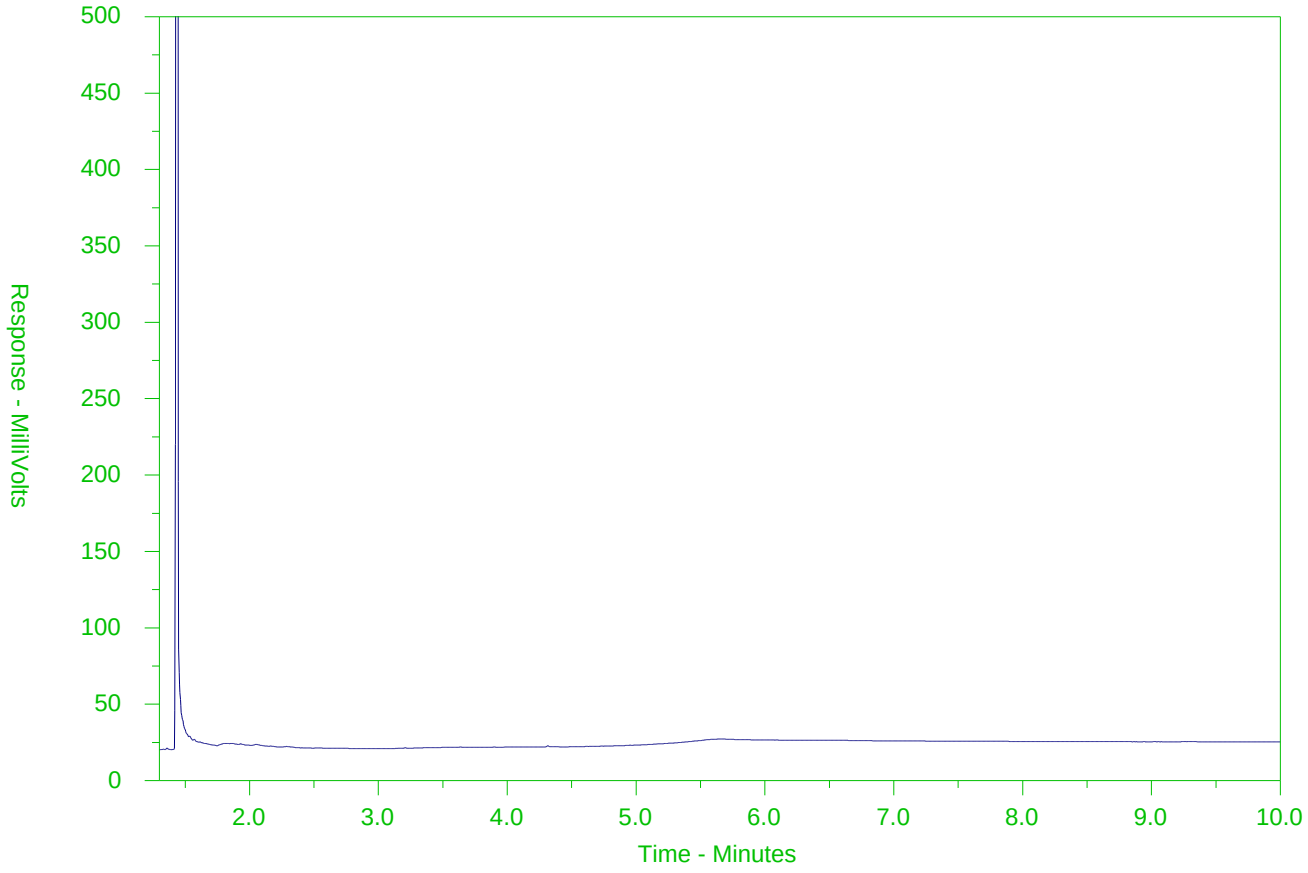
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2637412-2
Client Sample ID: EX15-21-83



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

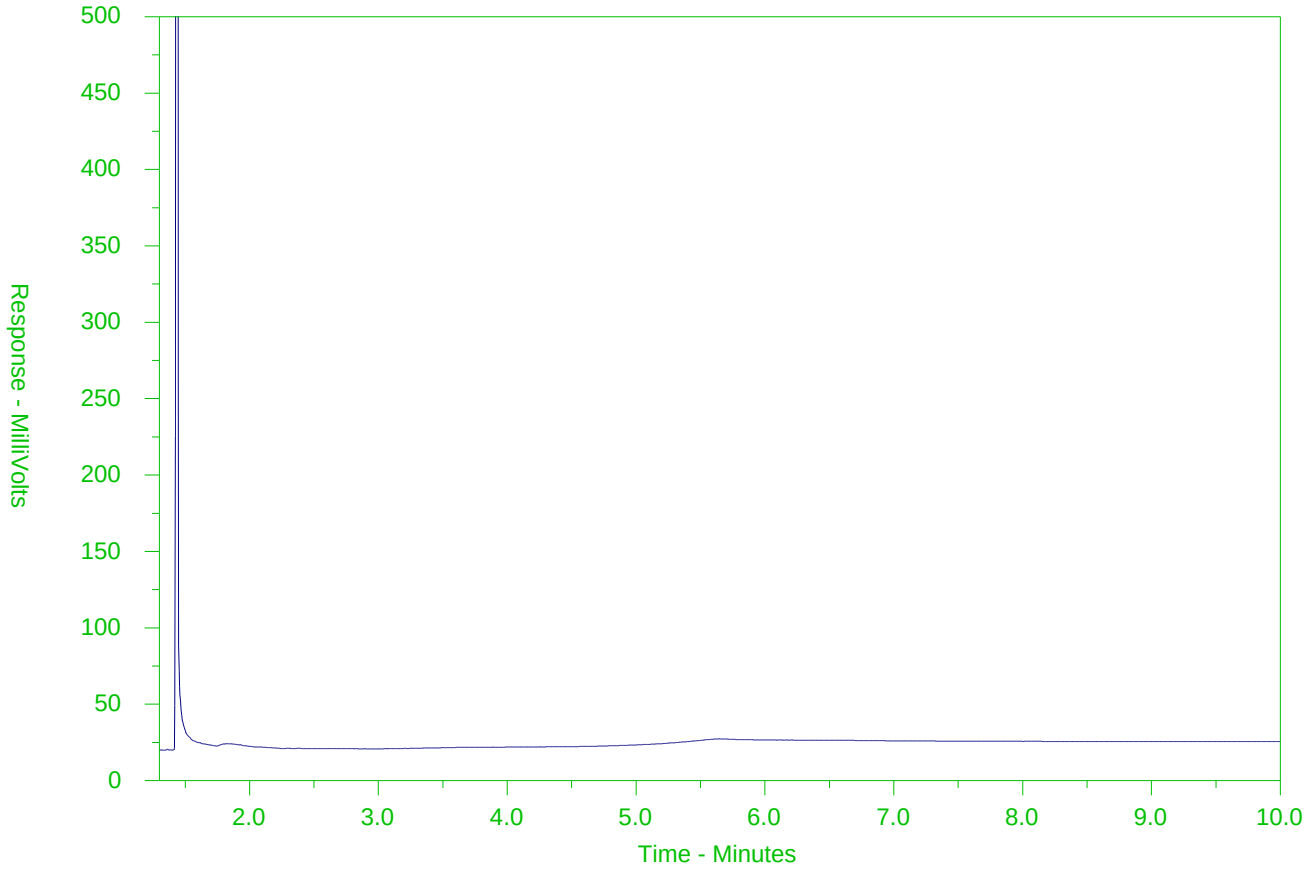
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2637412-3
Client Sample ID: EX15-21-84



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

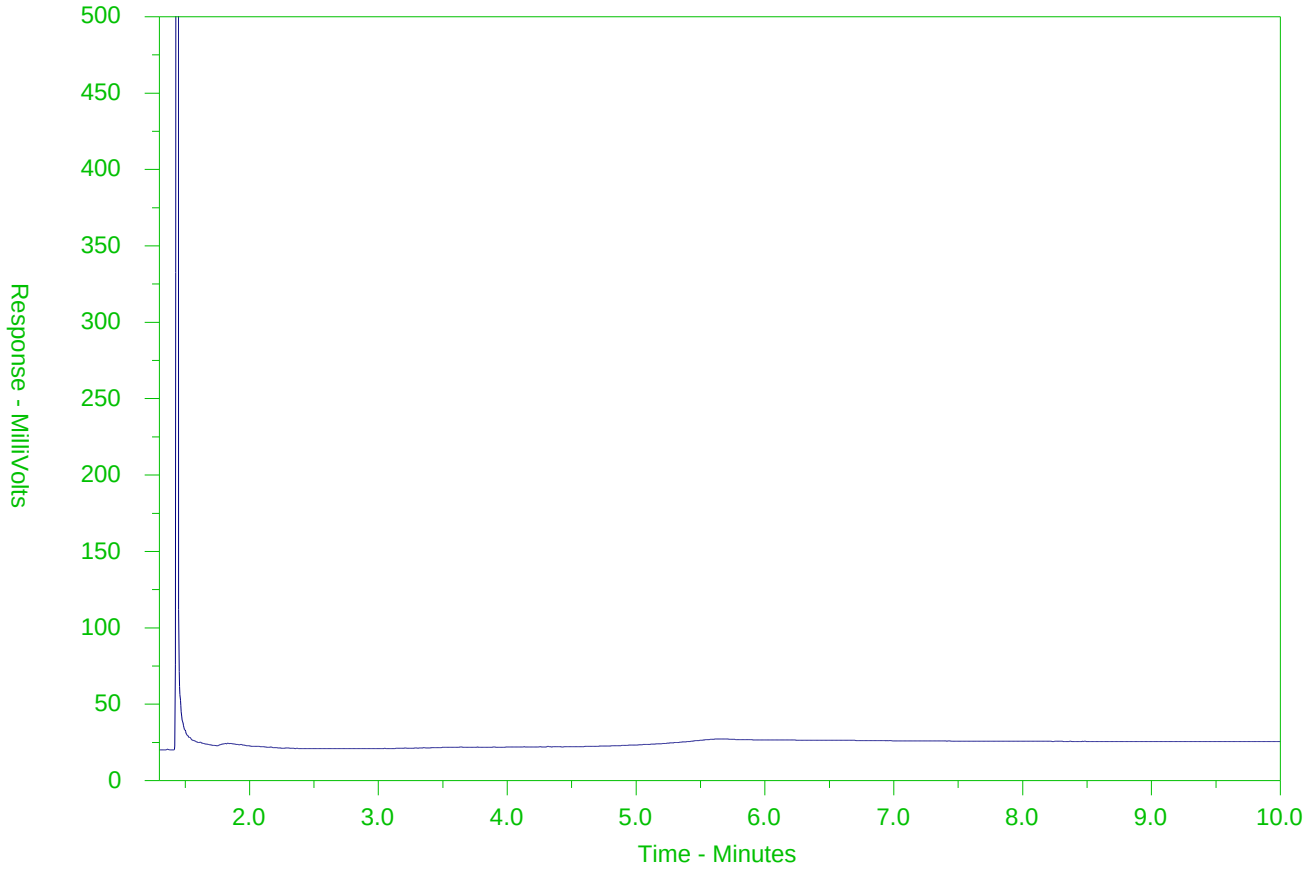
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2637412-4
Client Sample ID: EX15-21-85



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

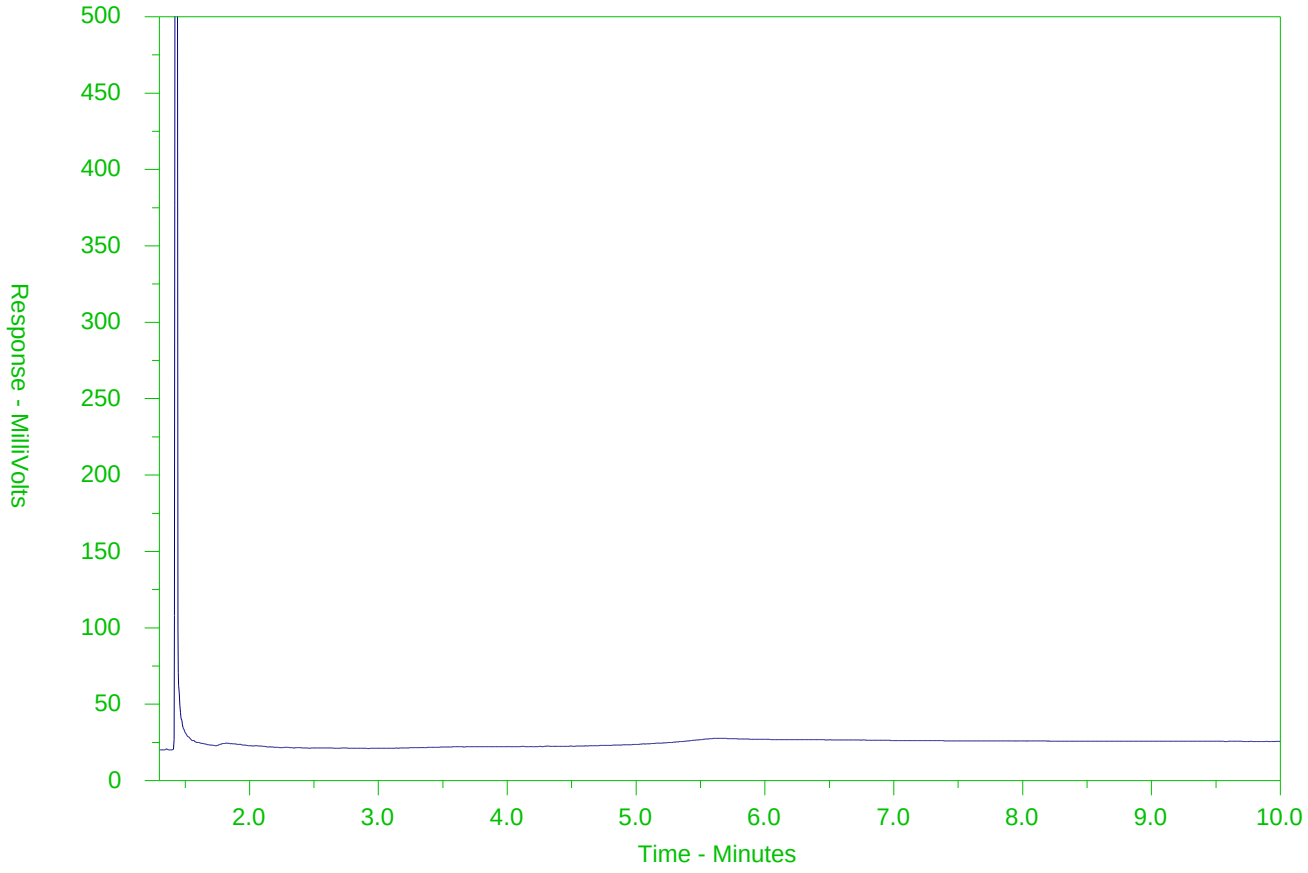
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2637412-5
Client Sample ID: EX15-21-86



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

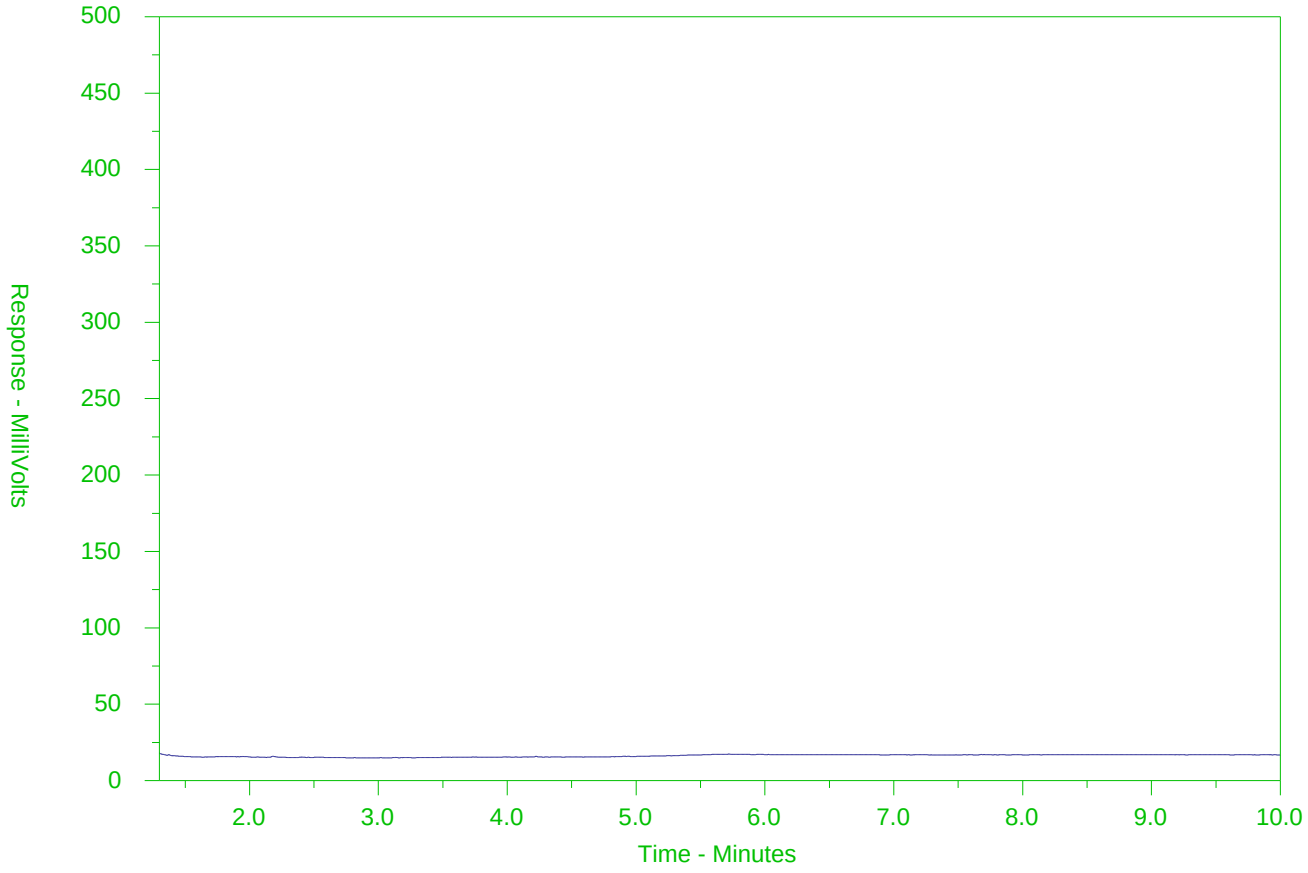
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2637412-6
Client Sample ID: EX15-21-86D



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

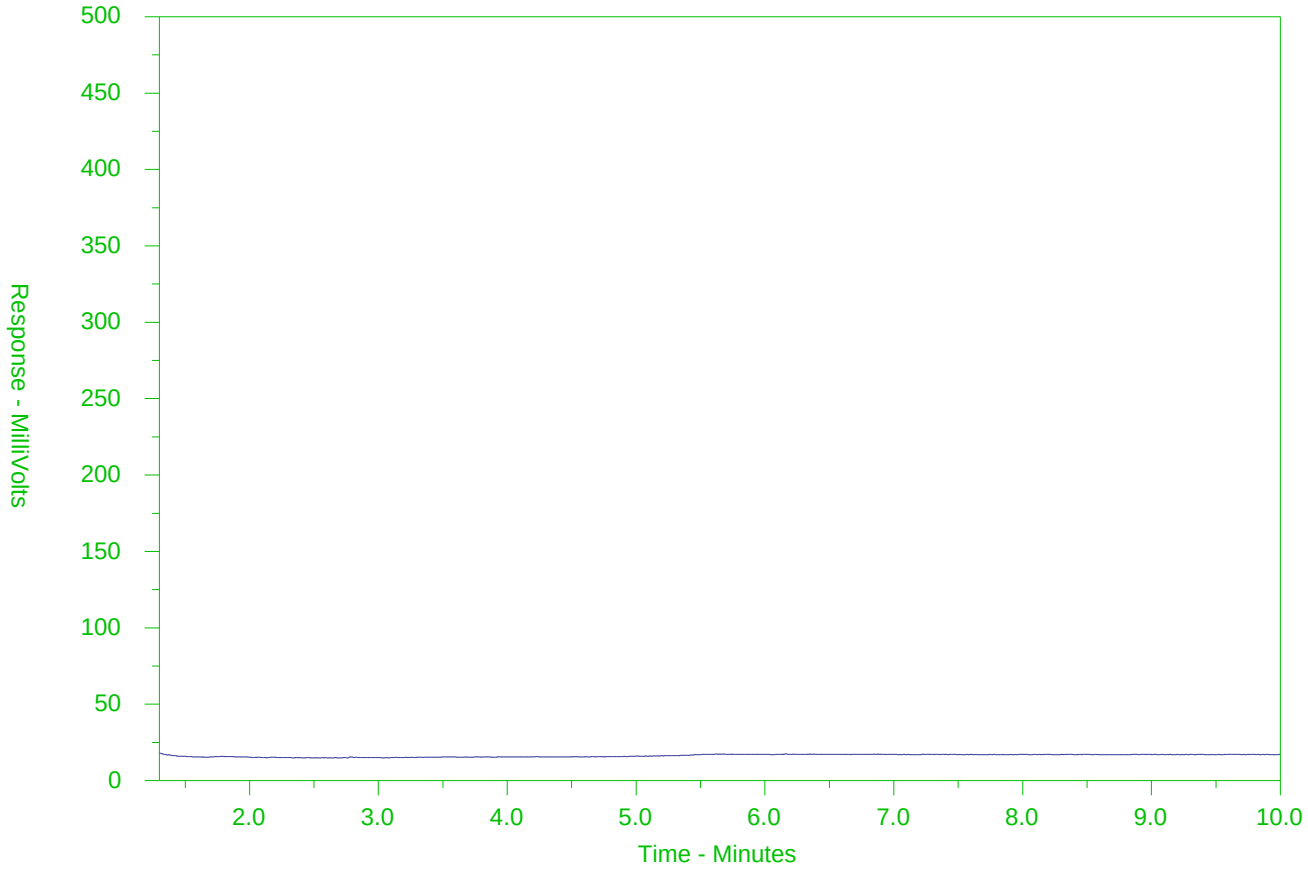
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2637412-7
Client Sample ID: EX15-21-87



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

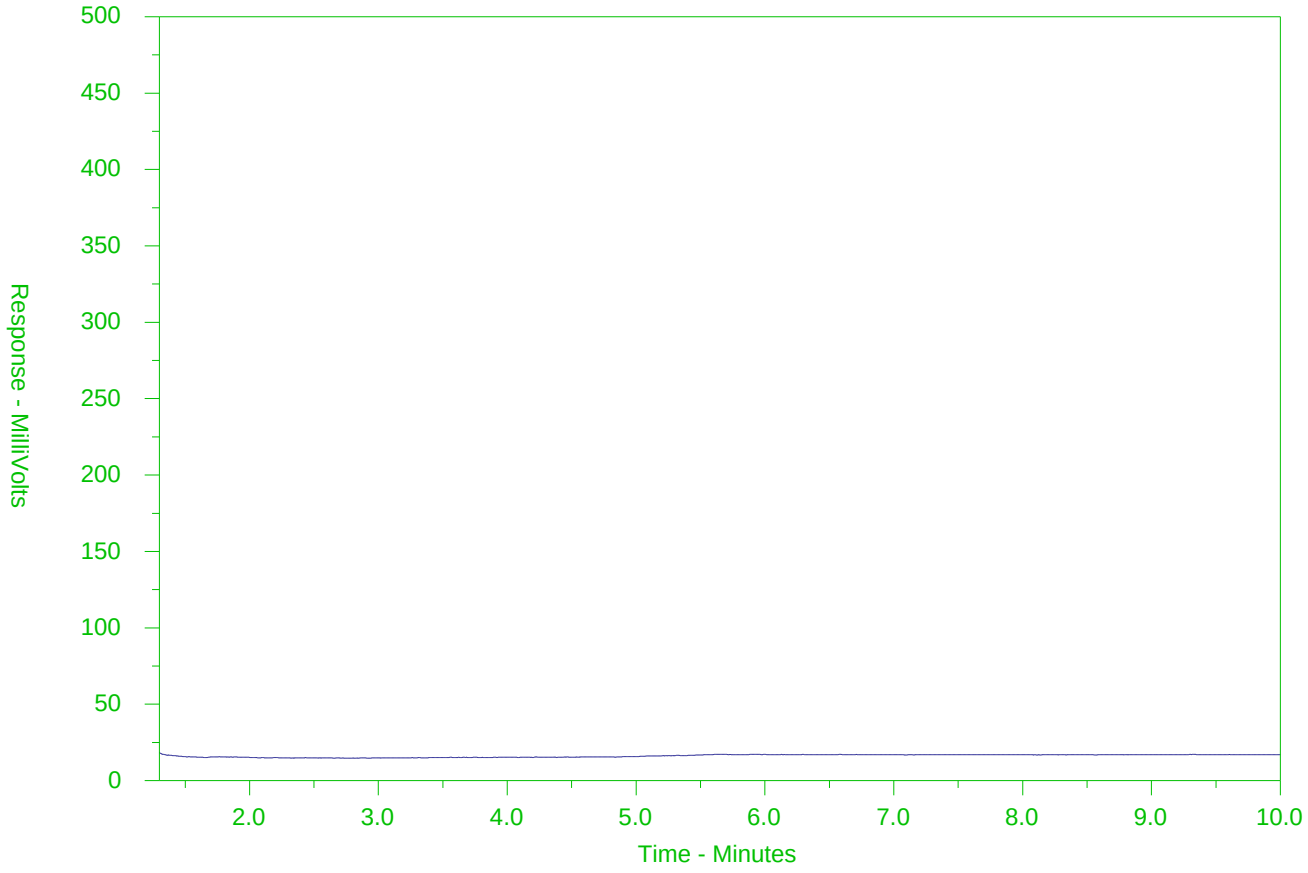
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2637412-8
Client Sample ID: EX15-21-89



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

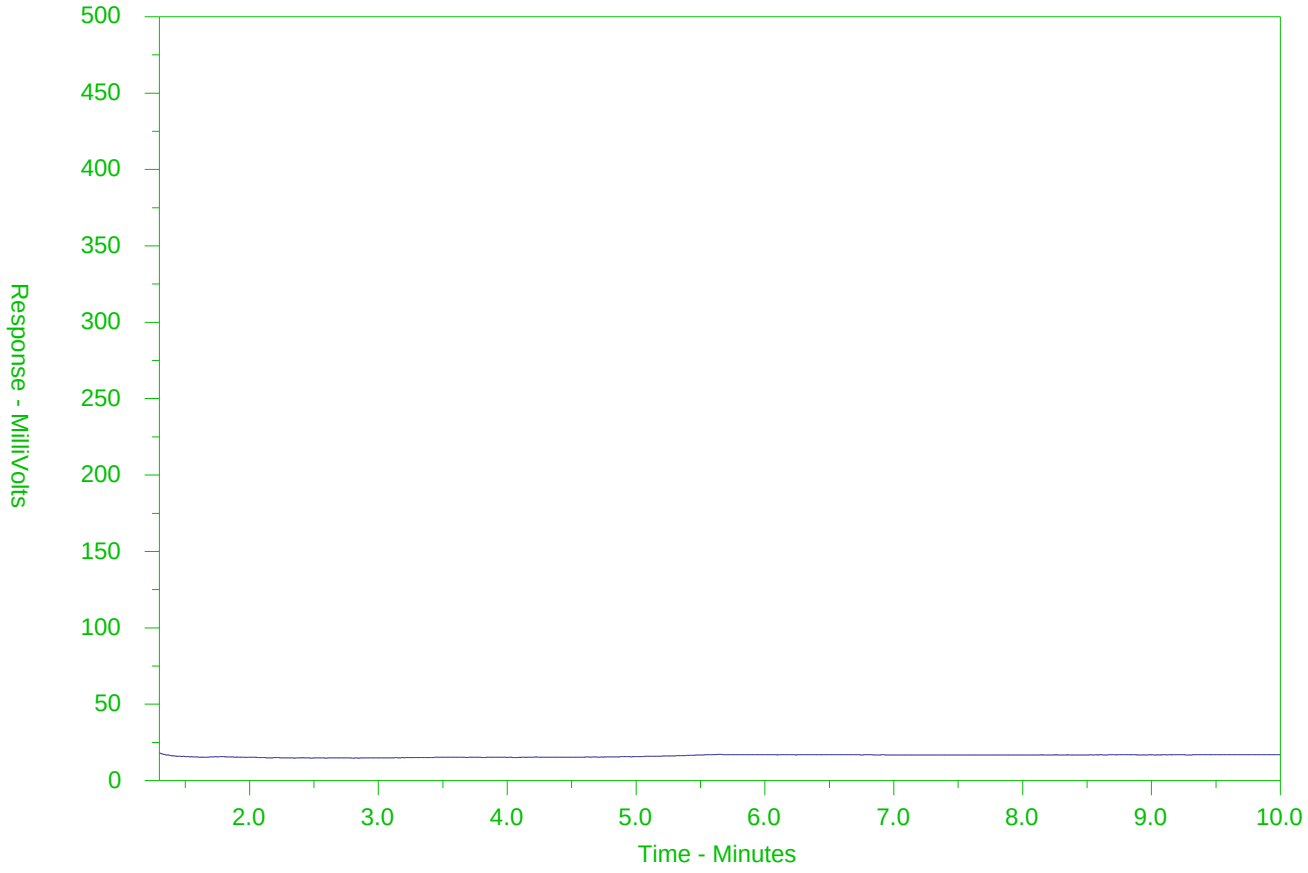
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2637412-9
Client Sample ID: EX15-21-89D



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

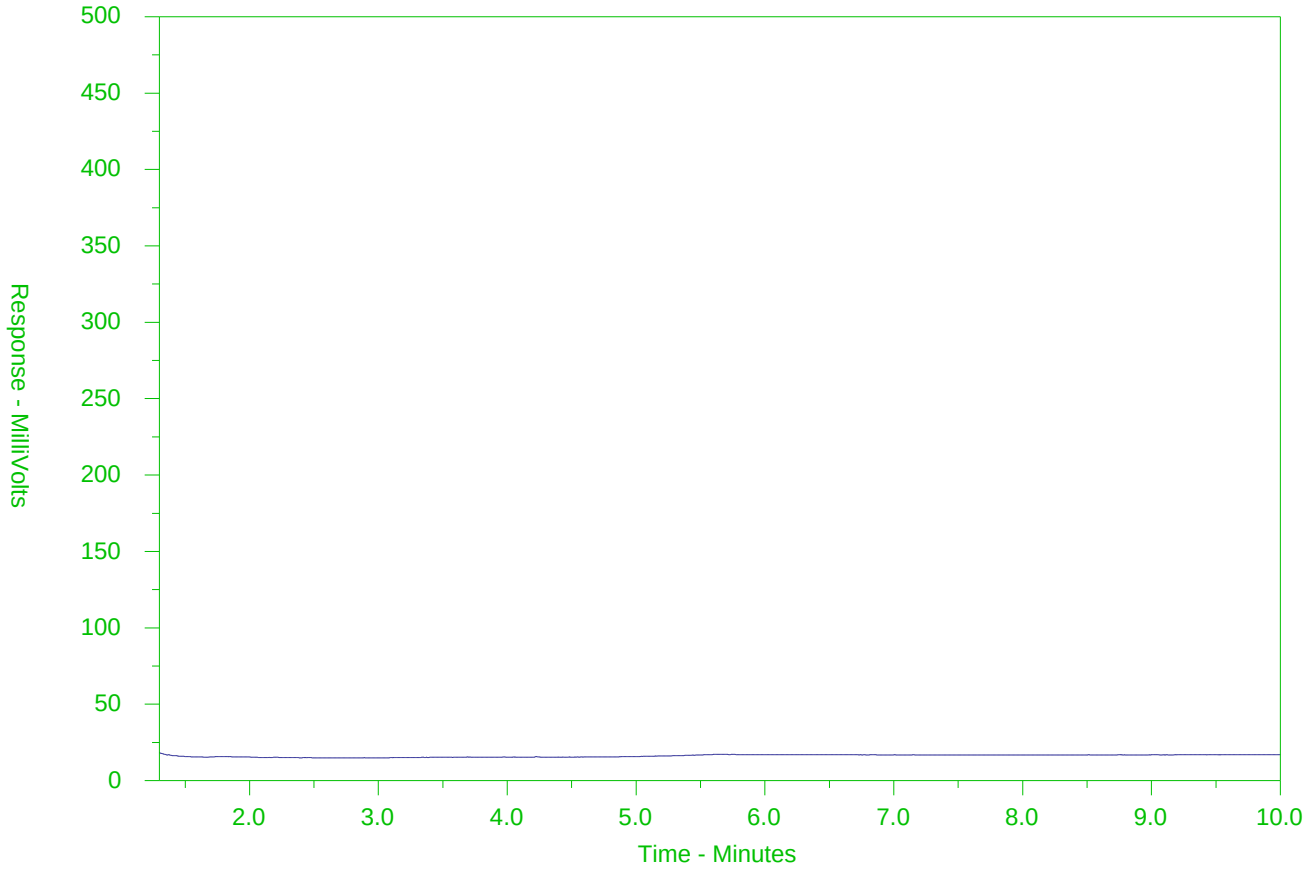
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2637412-10
Client Sample ID: EX15-21-88



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

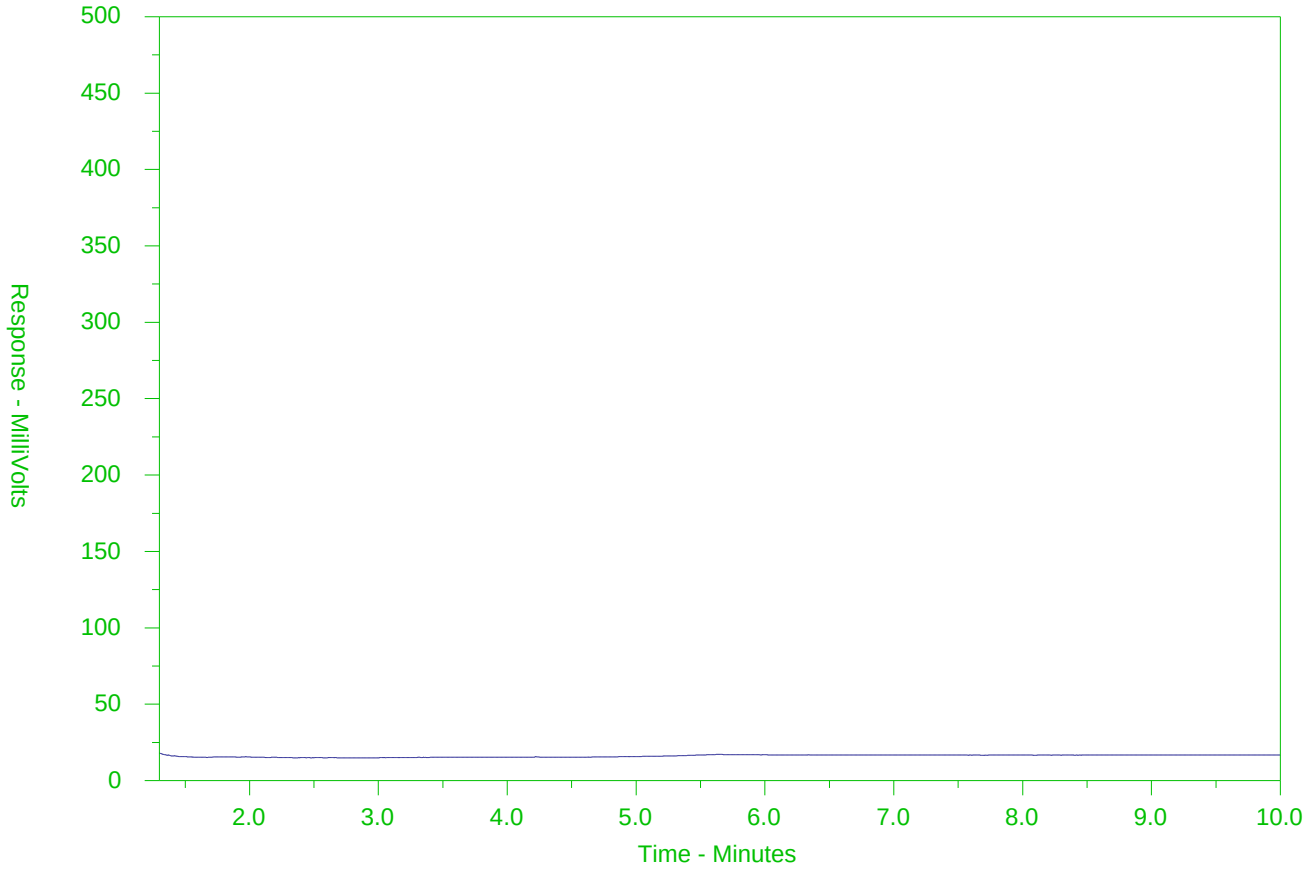
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2637412-11
Client Sample ID: EX15-21-90



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

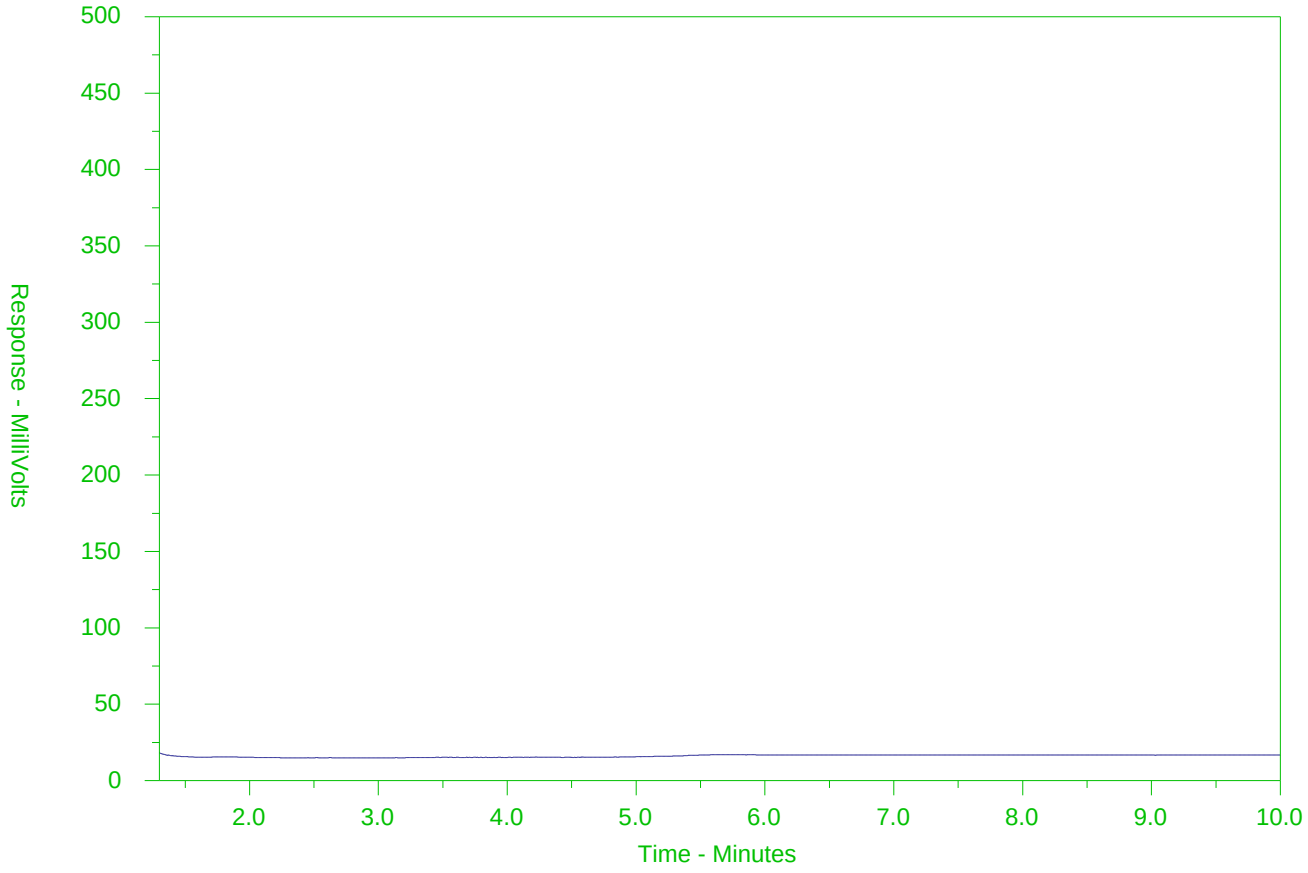
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2637412-12
Client Sample ID: EX15-21-92



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

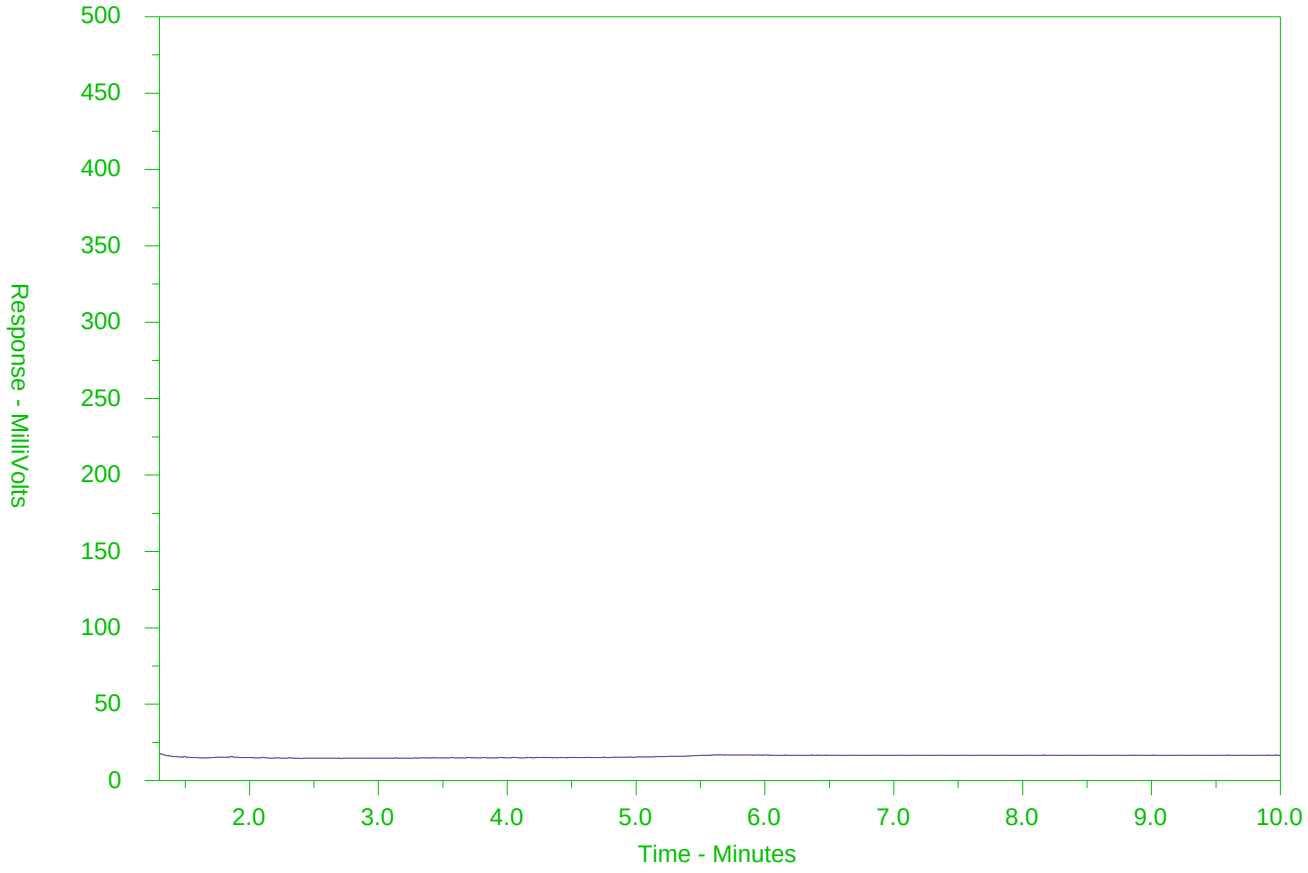
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2637412-13
Client Sample ID: EX15-21-93



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

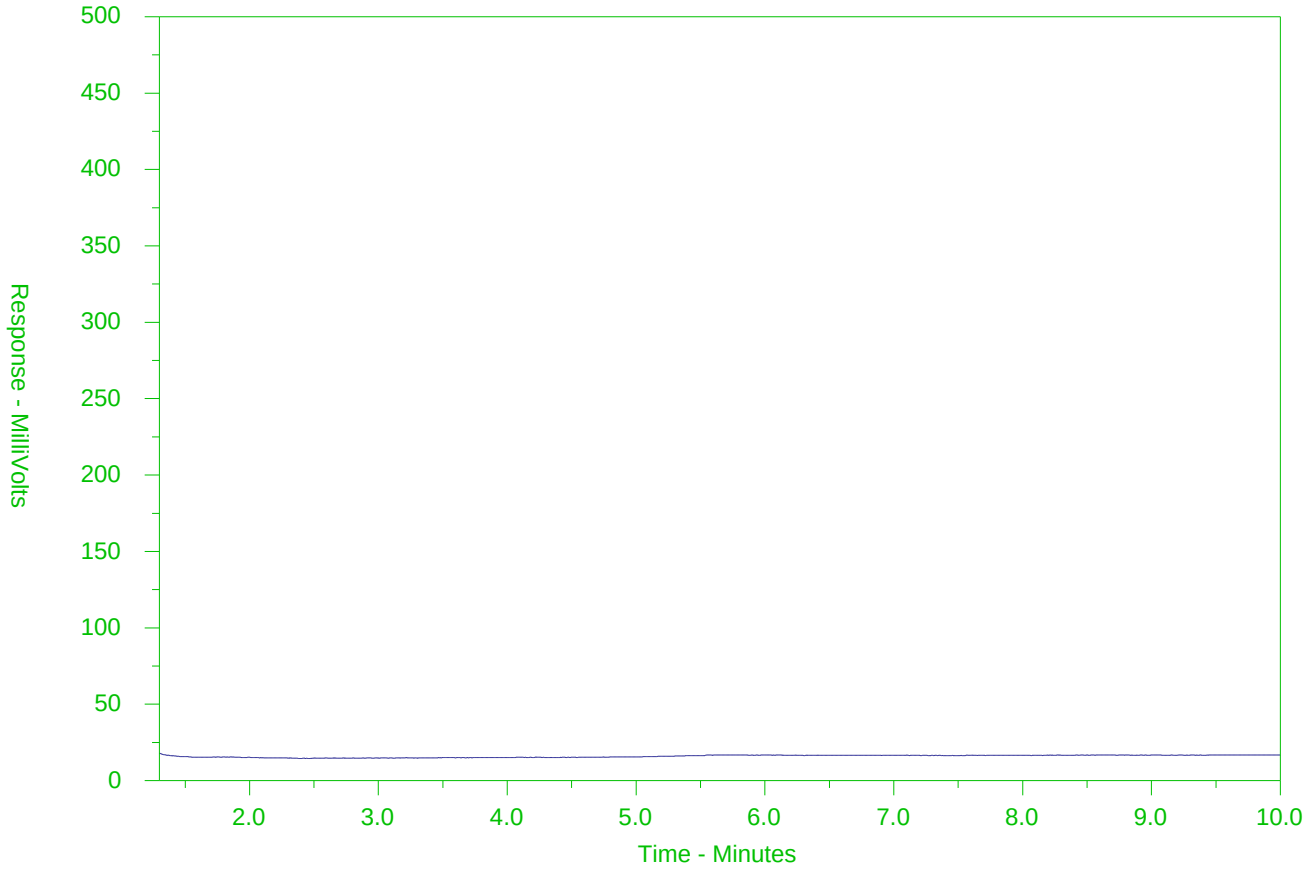
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2637412-14
Client Sample ID: EX15-21-93D



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

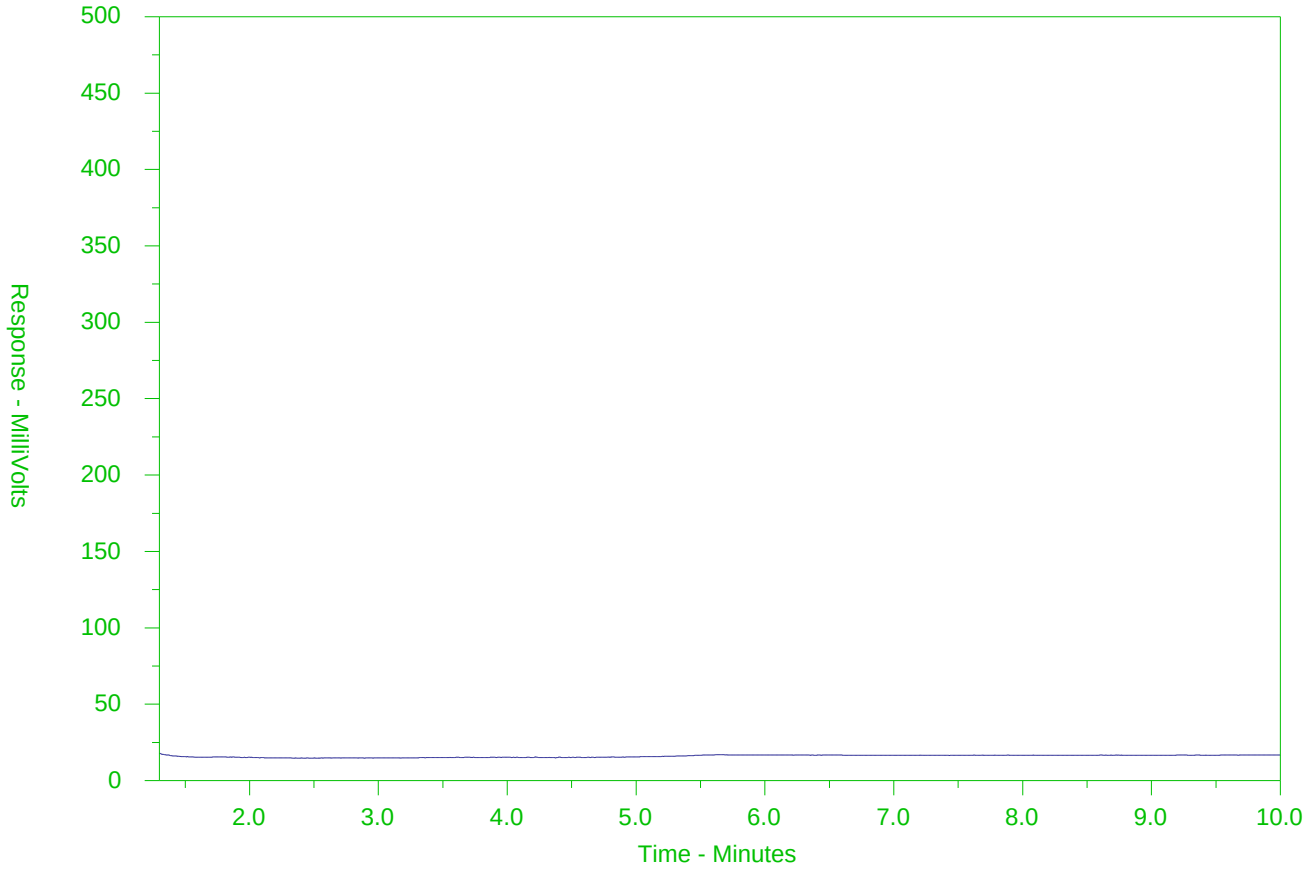
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2637412-15
Client Sample ID: EX15-21-94



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C 346°F	287°C 549°F	481°C 898°F	575°C 1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

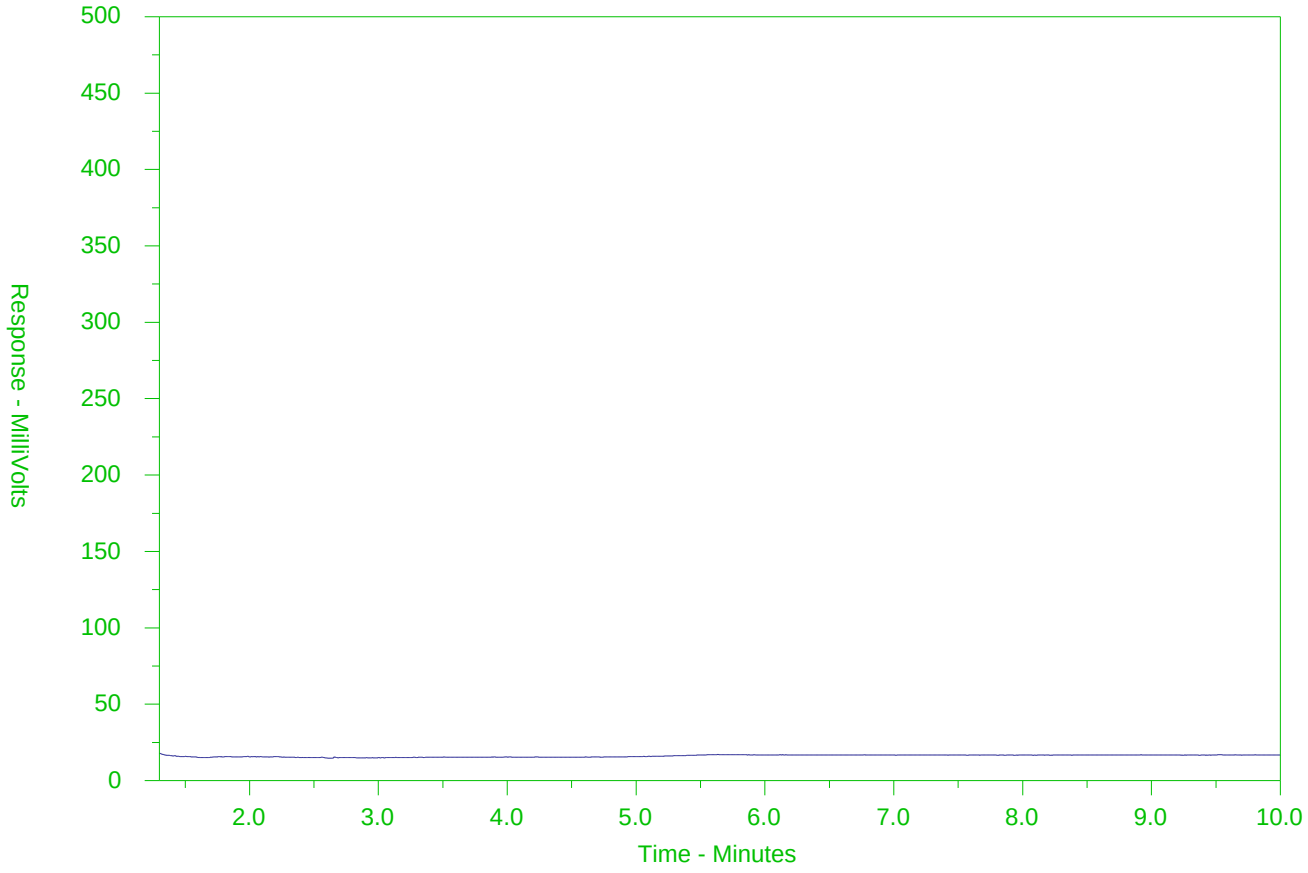
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2637412-16
Client Sample ID: EX15-21-91



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

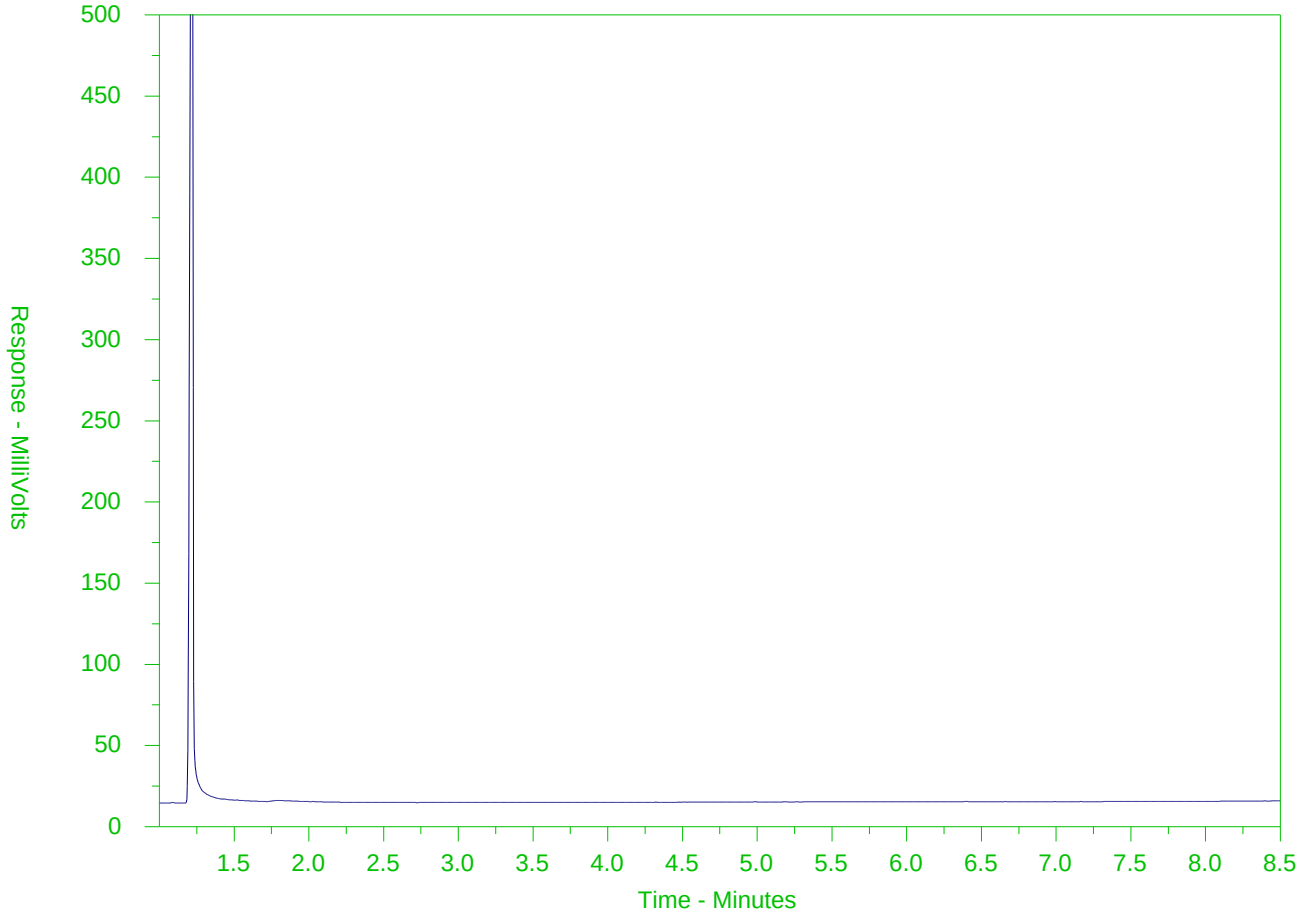
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

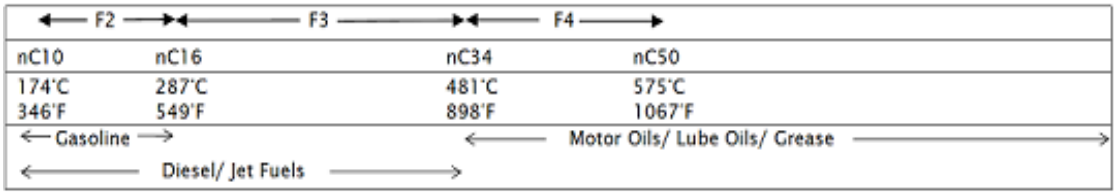
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2637412-17
Client Sample ID: EX15-21-95





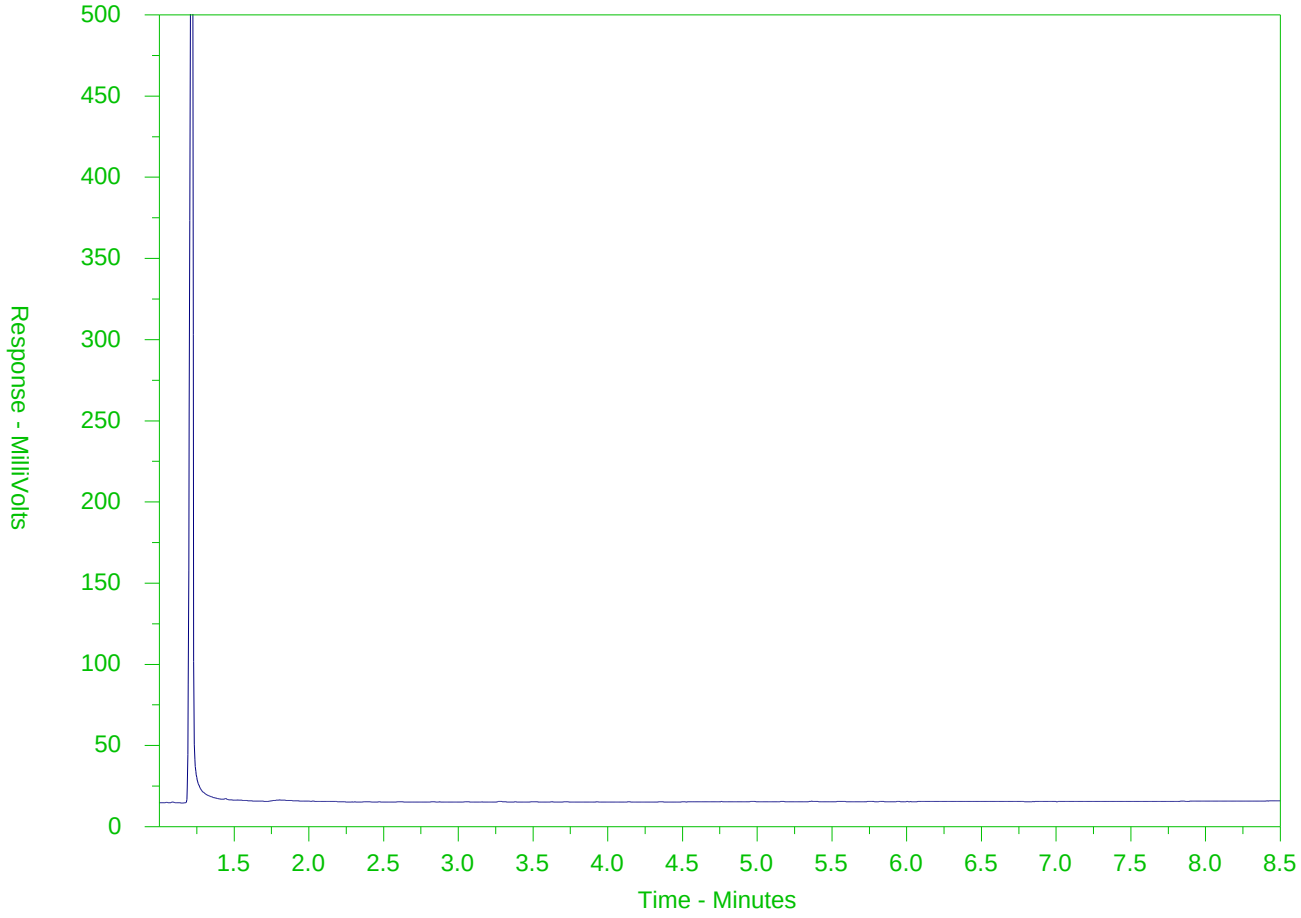
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

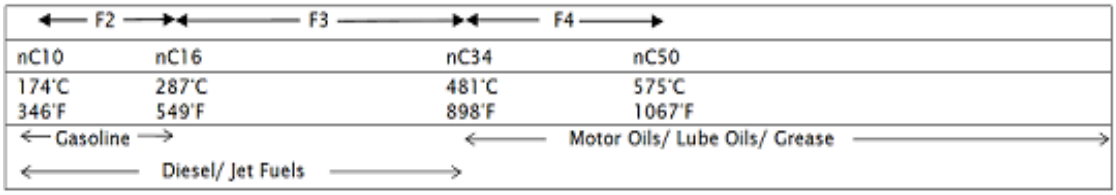
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2637412-18
Client Sample ID: EX15-21-96





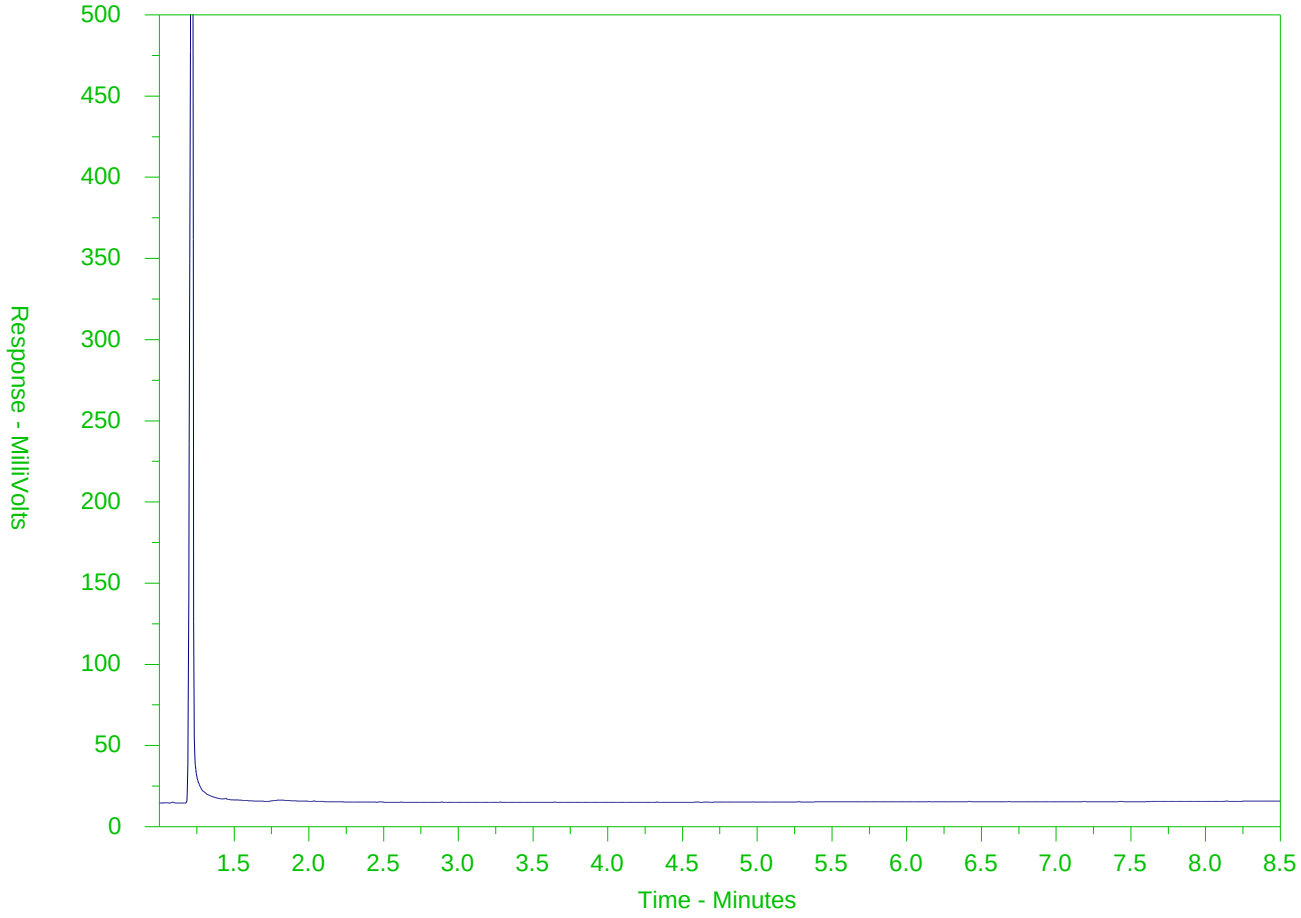
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

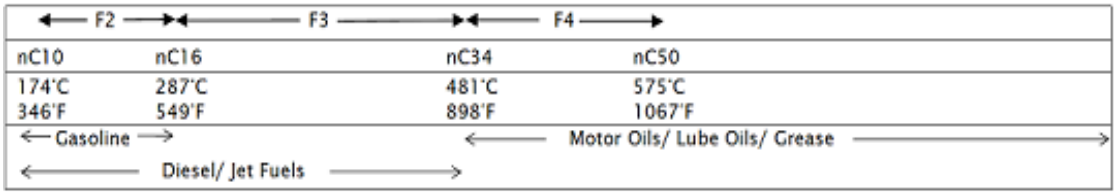
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2637412-19
Client Sample ID: EX15-21-97





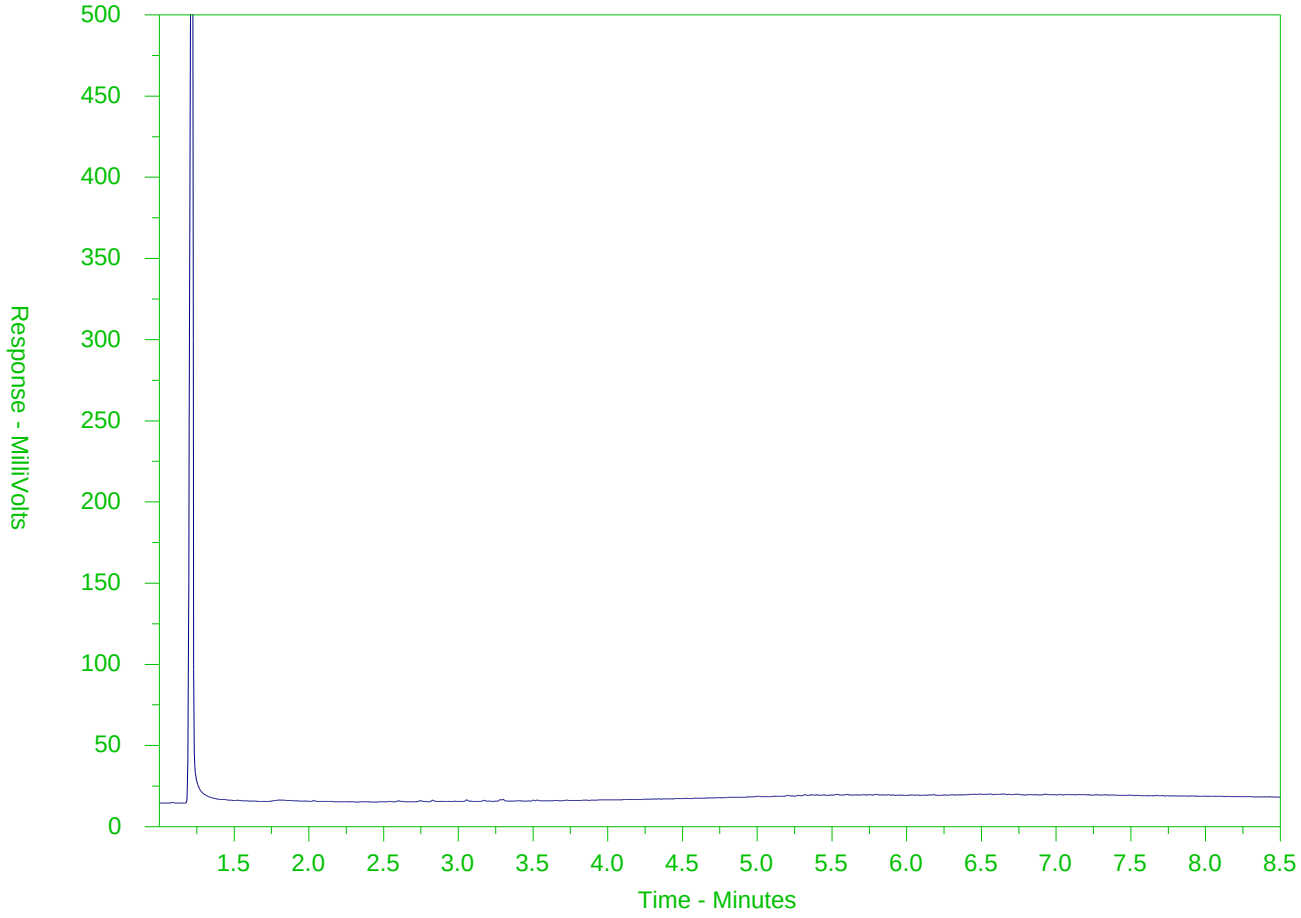
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

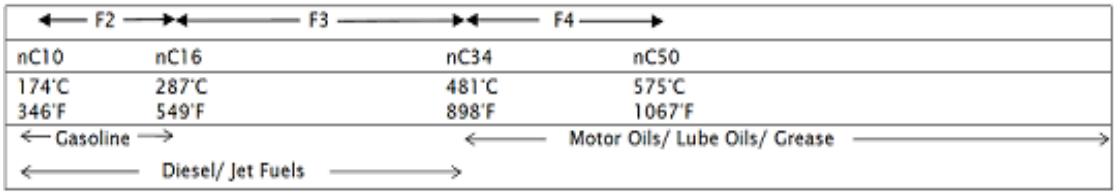
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2637412-20
Client Sample ID: EX15-21-98





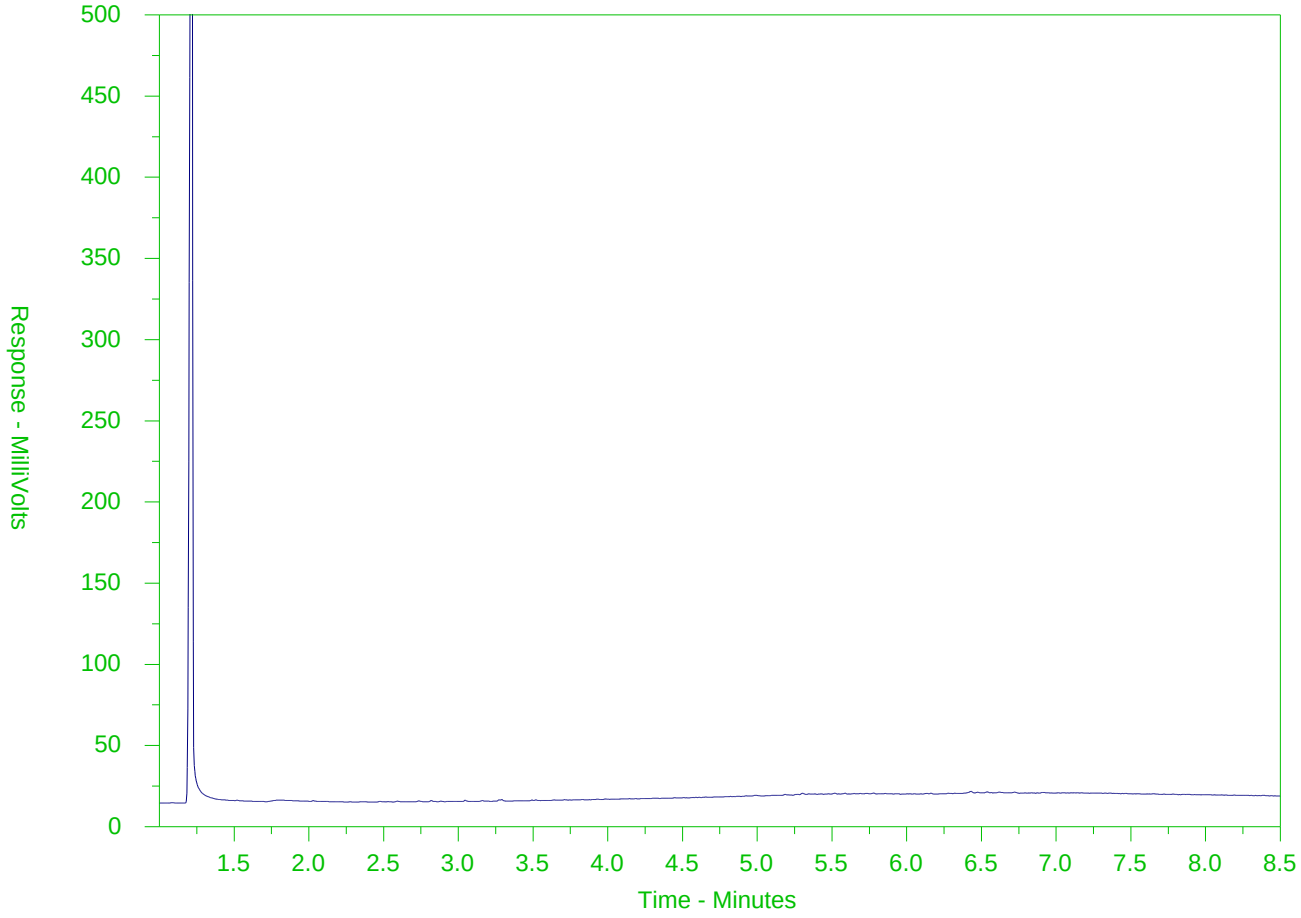
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

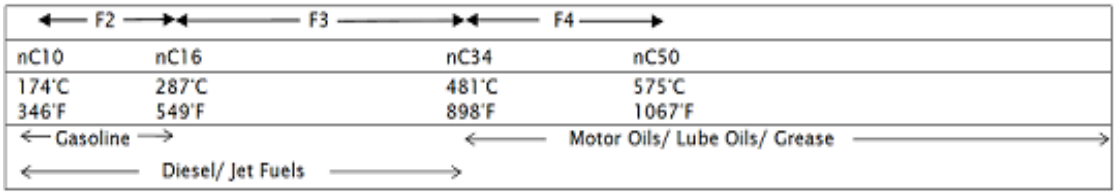
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2637412-21
Client Sample ID: EX15-21-99





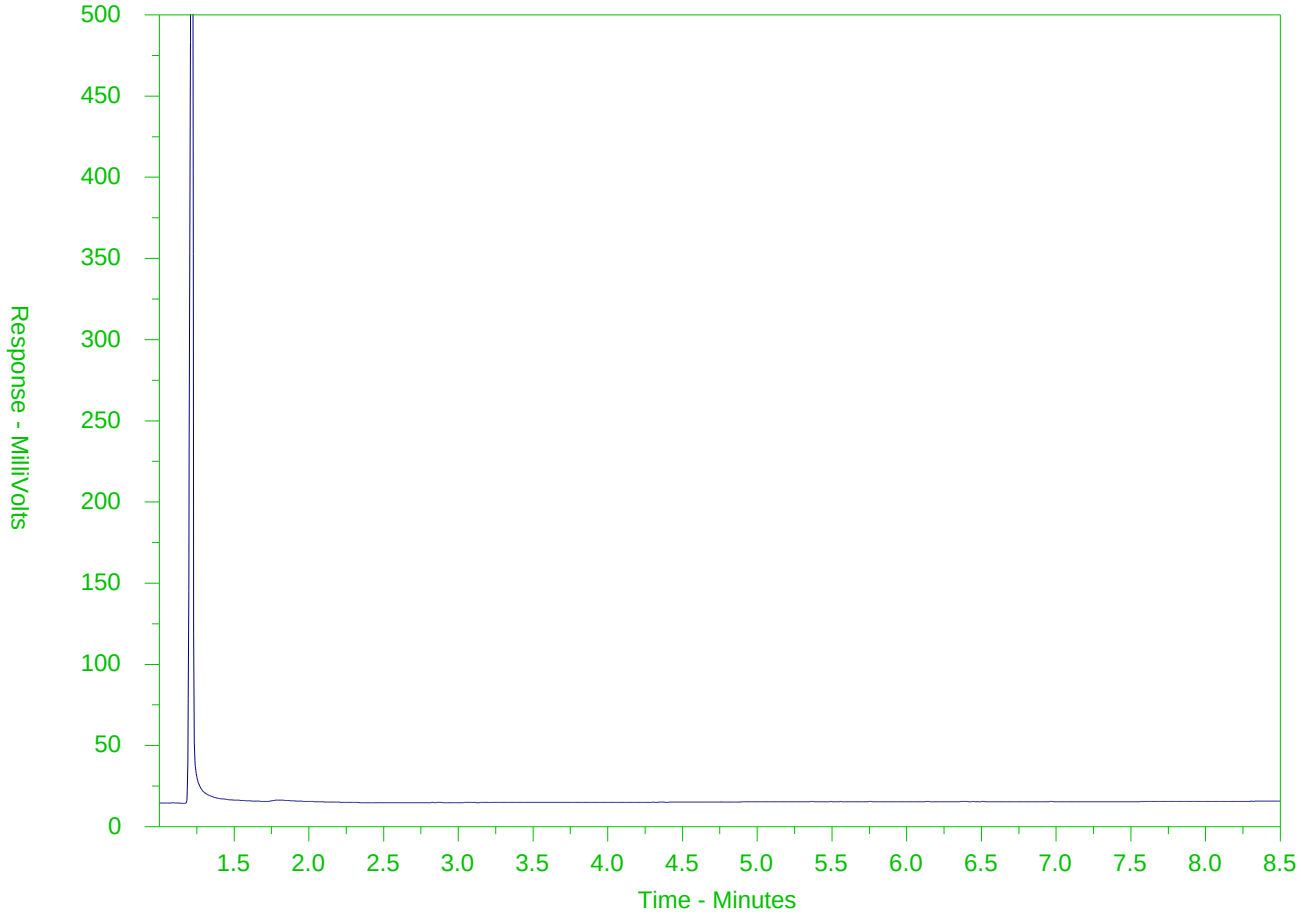
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

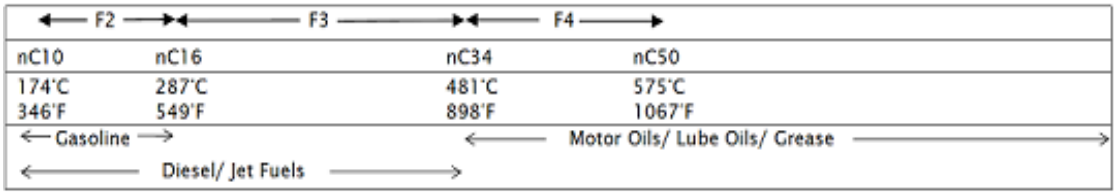
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2637412-22
Client Sample ID: EX15-21-100





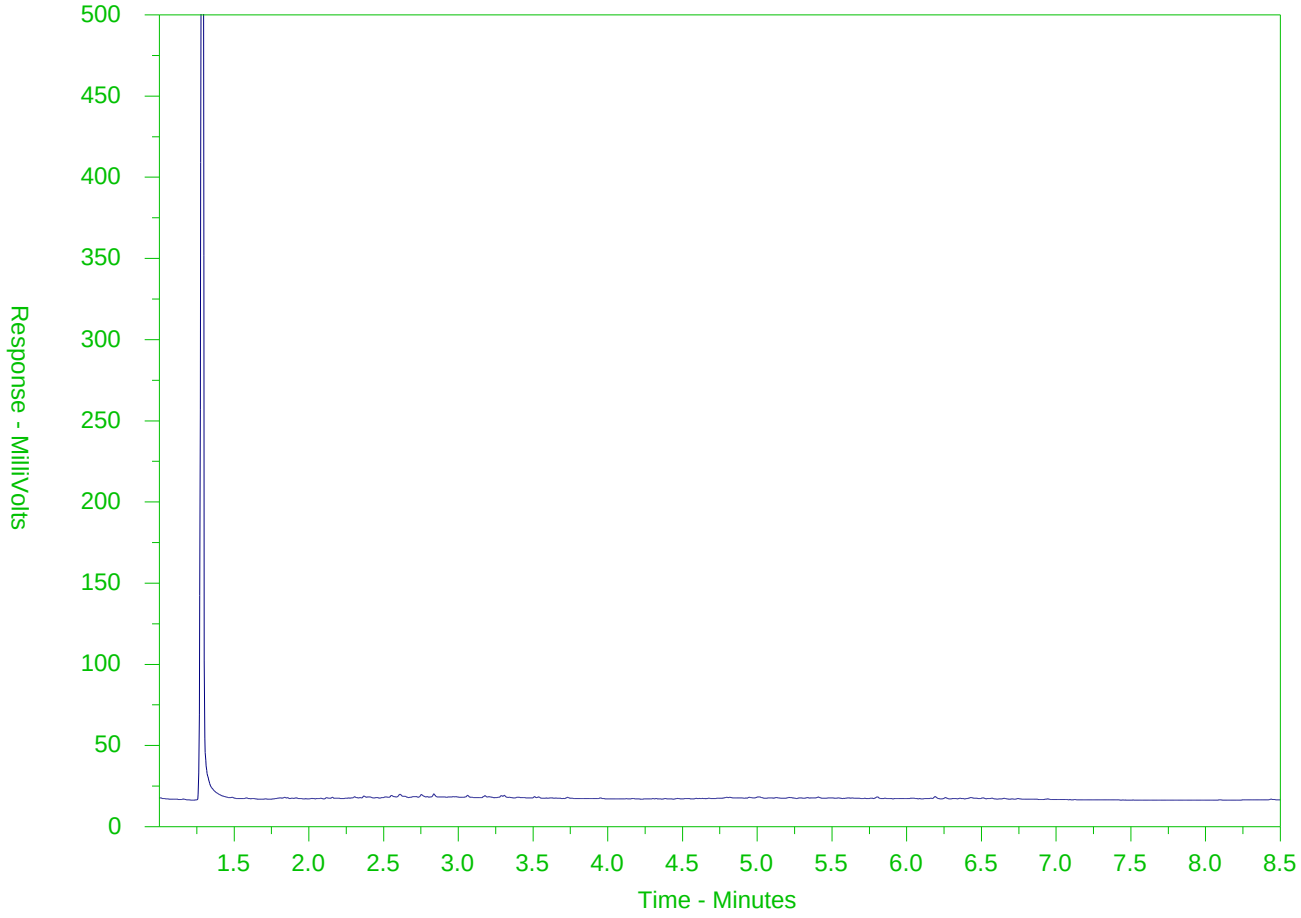
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

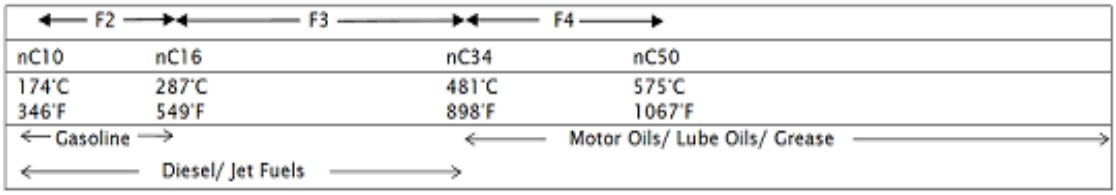
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2637412-23
Client Sample ID: EX15-21-102





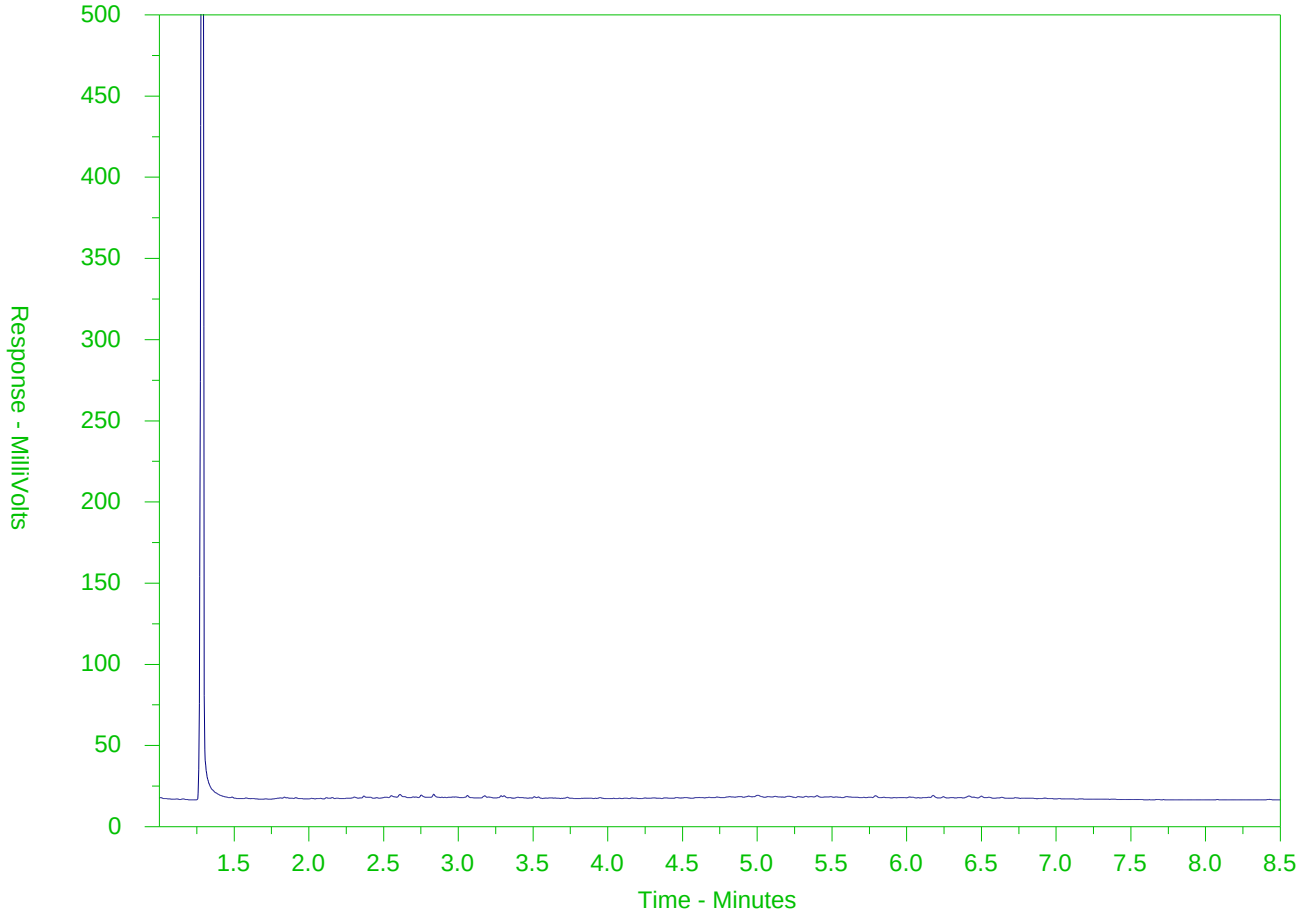
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

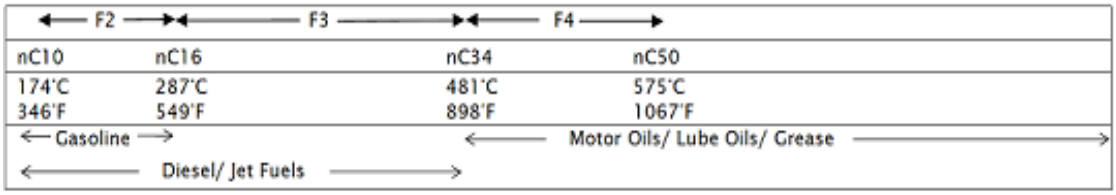
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2637412-24
Client Sample ID: EX15-21-104





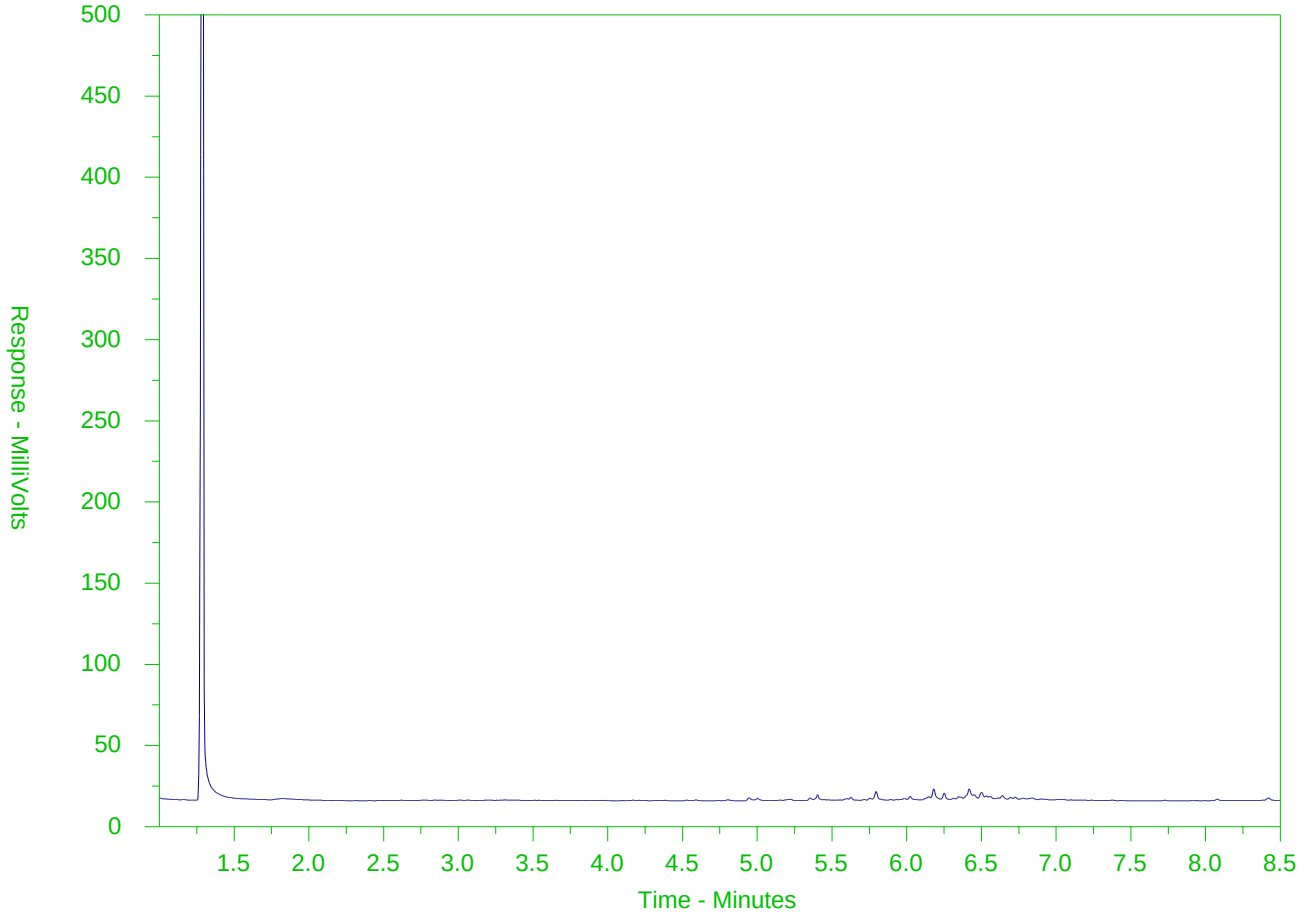
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

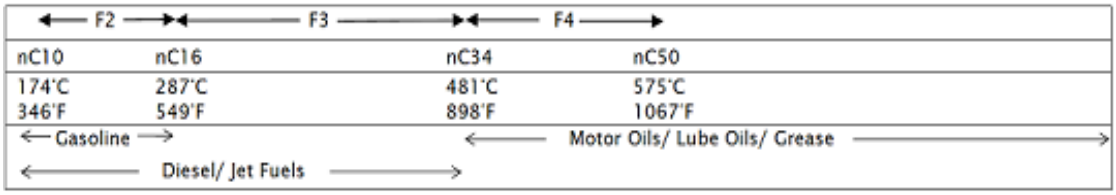
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2637412-25
Client Sample ID: EX15-21-106





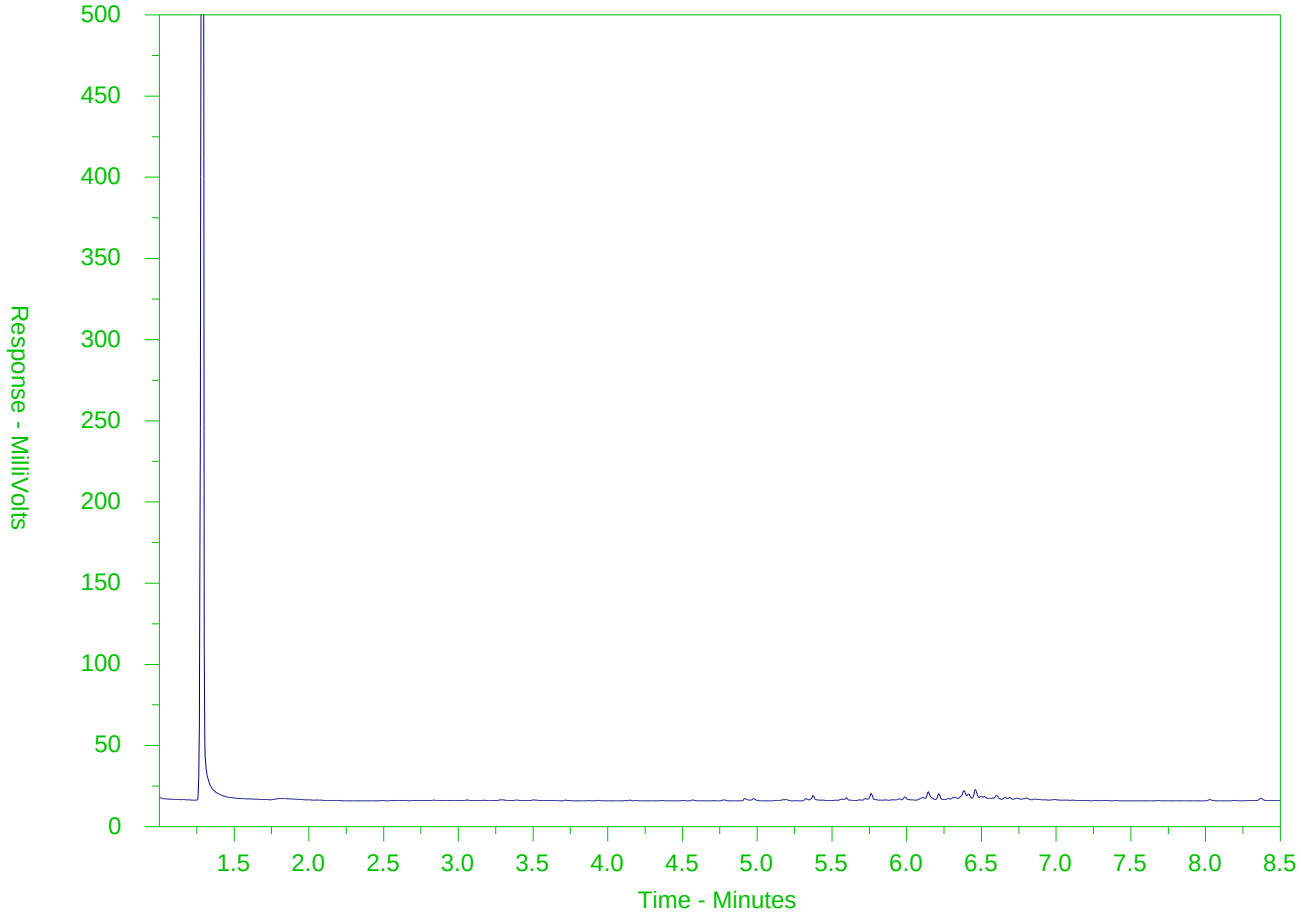
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

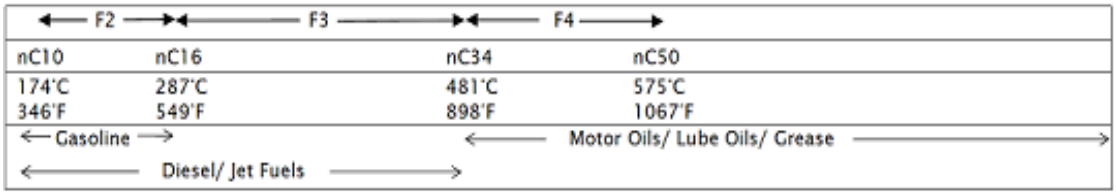
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2637412-26
Client Sample ID: EX15-21-106D





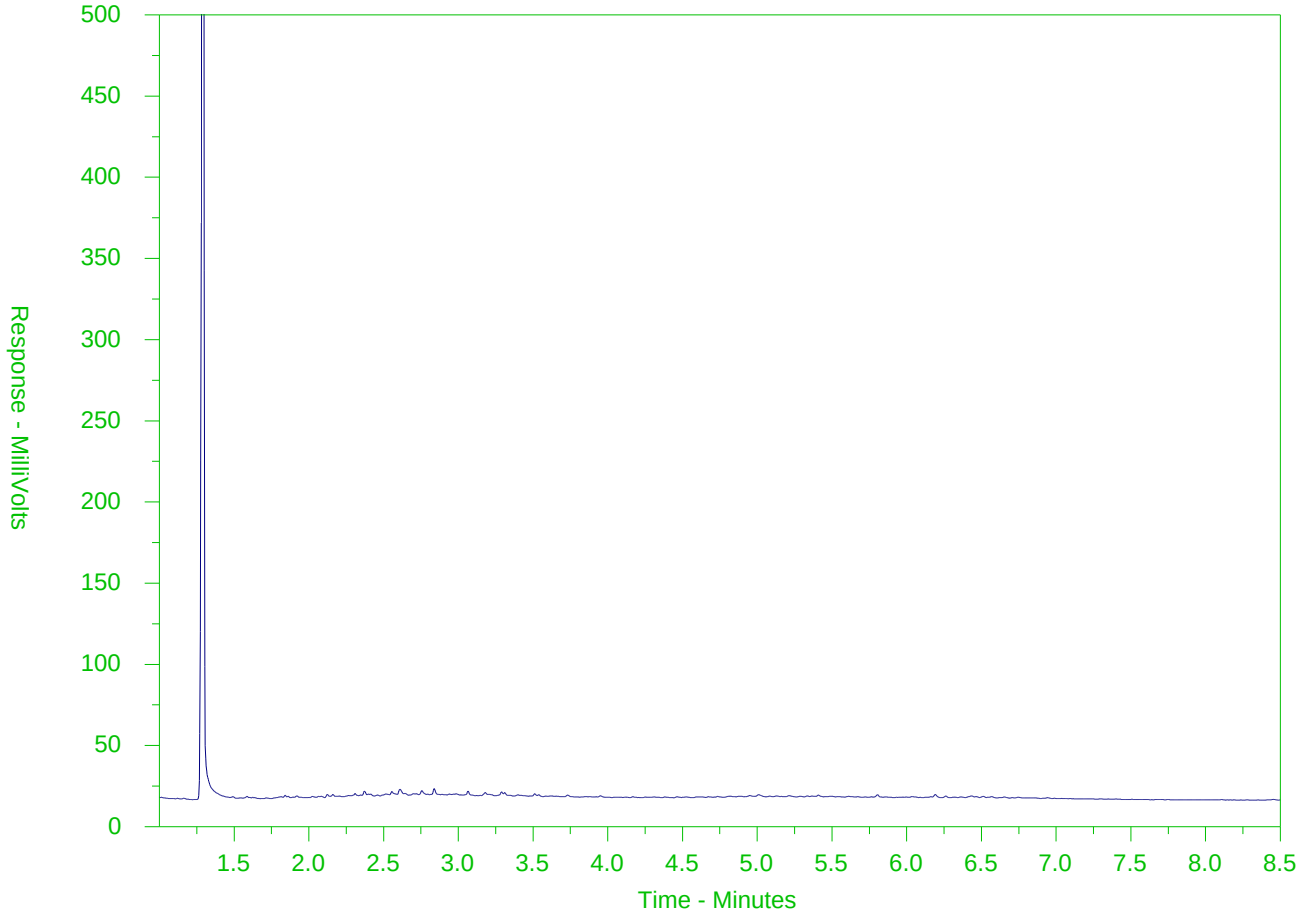
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

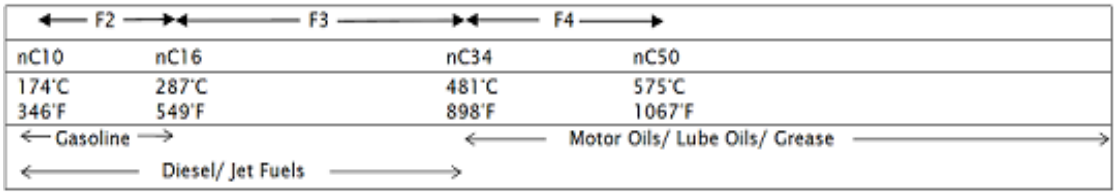
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2637412-27
Client Sample ID: EX15-21-108





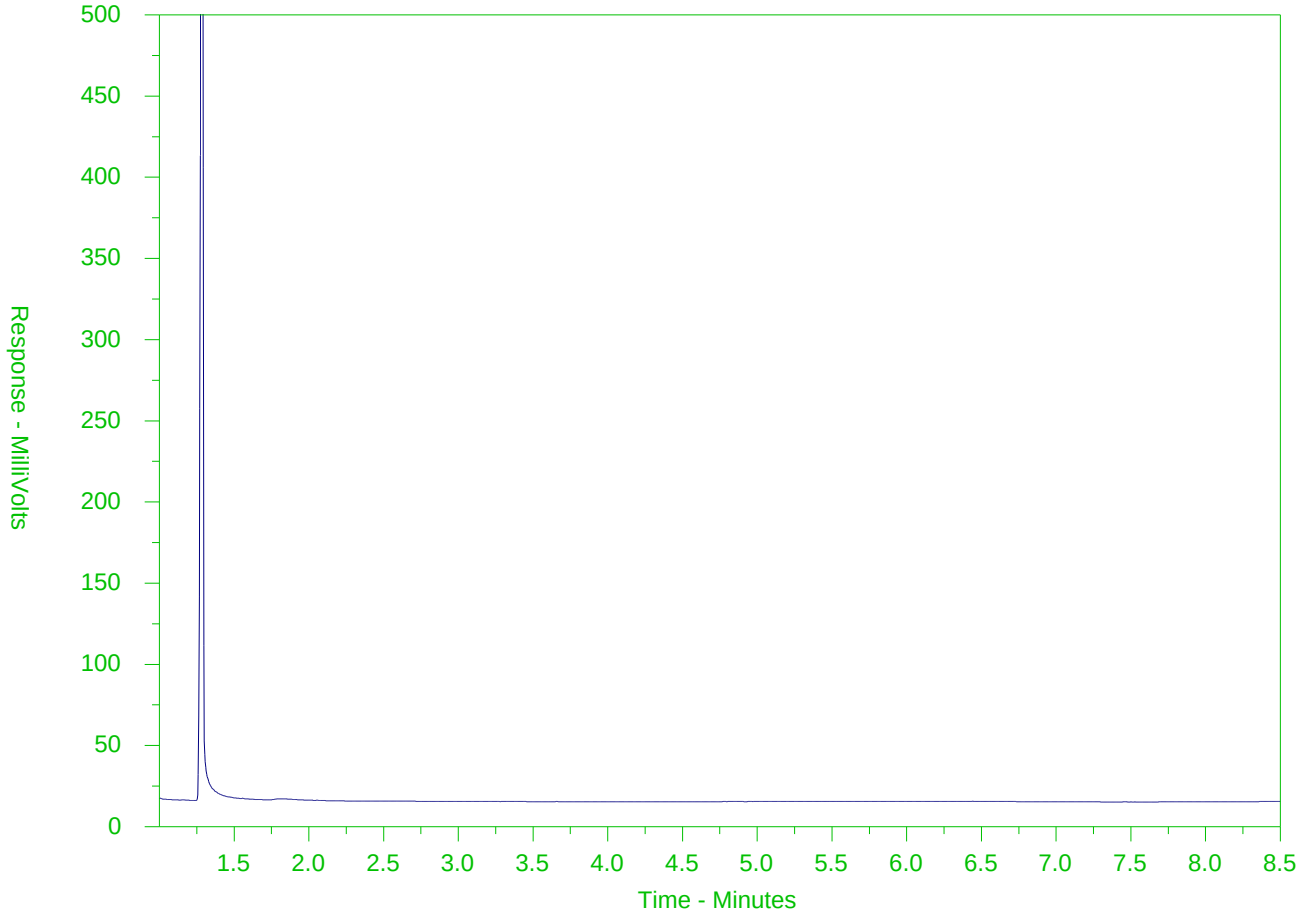
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

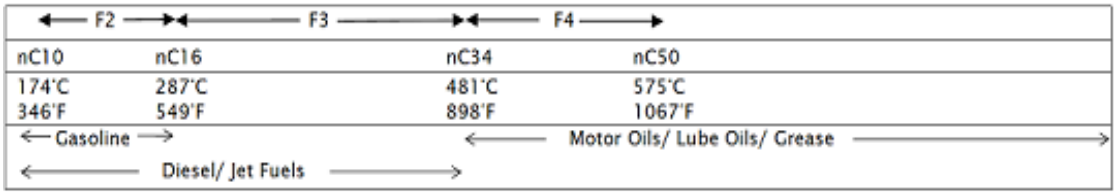
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2637412-28
Client Sample ID: EX15-21-110





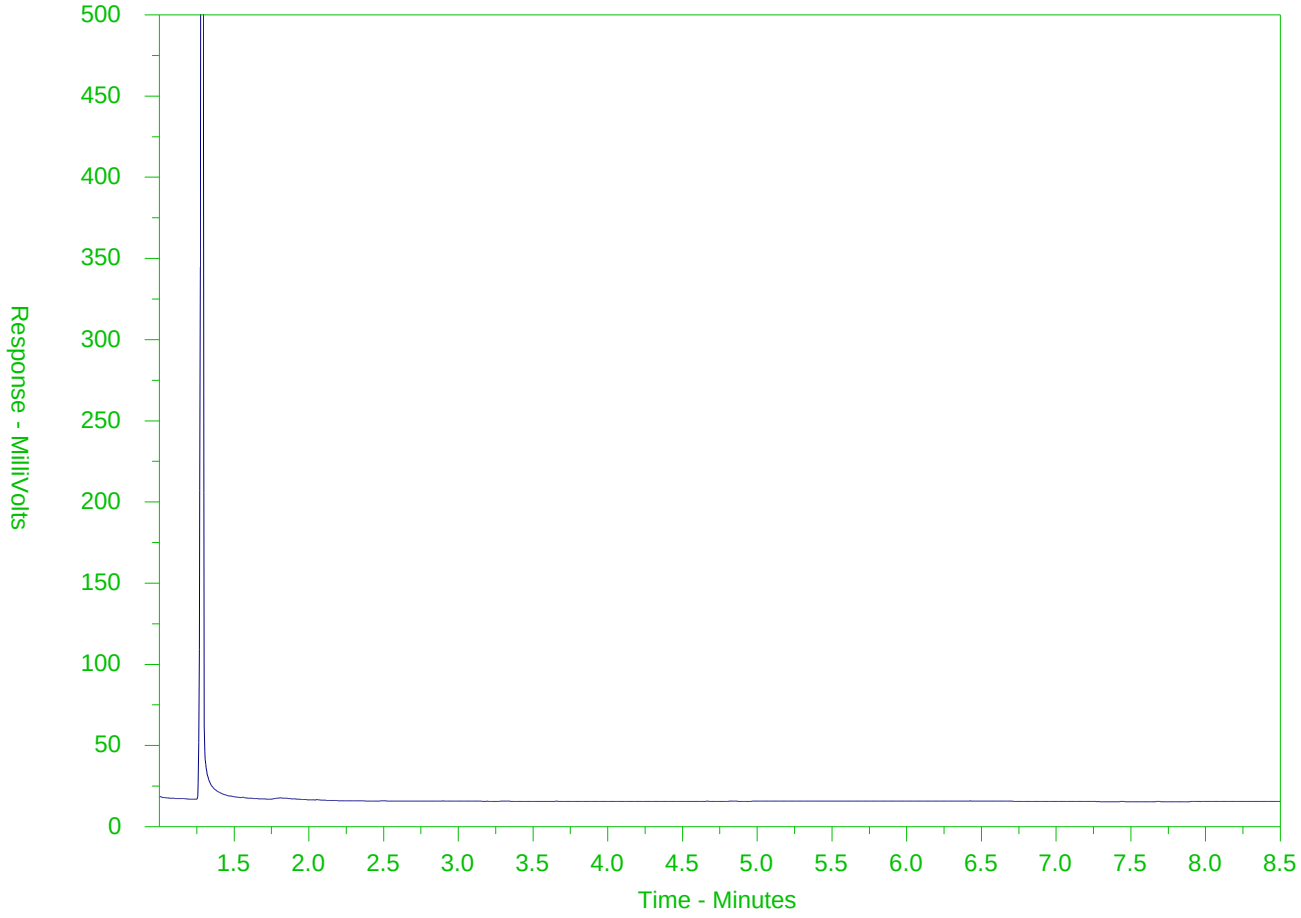
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

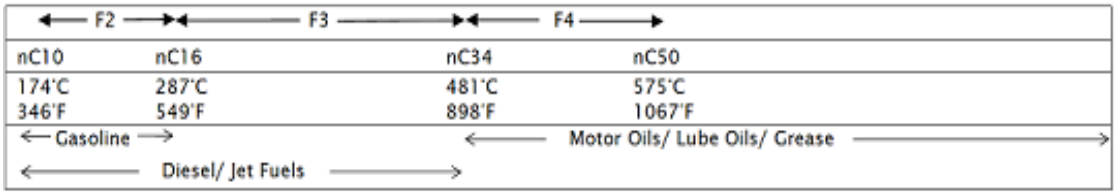
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2637412-29
Client Sample ID: EX15-21-111





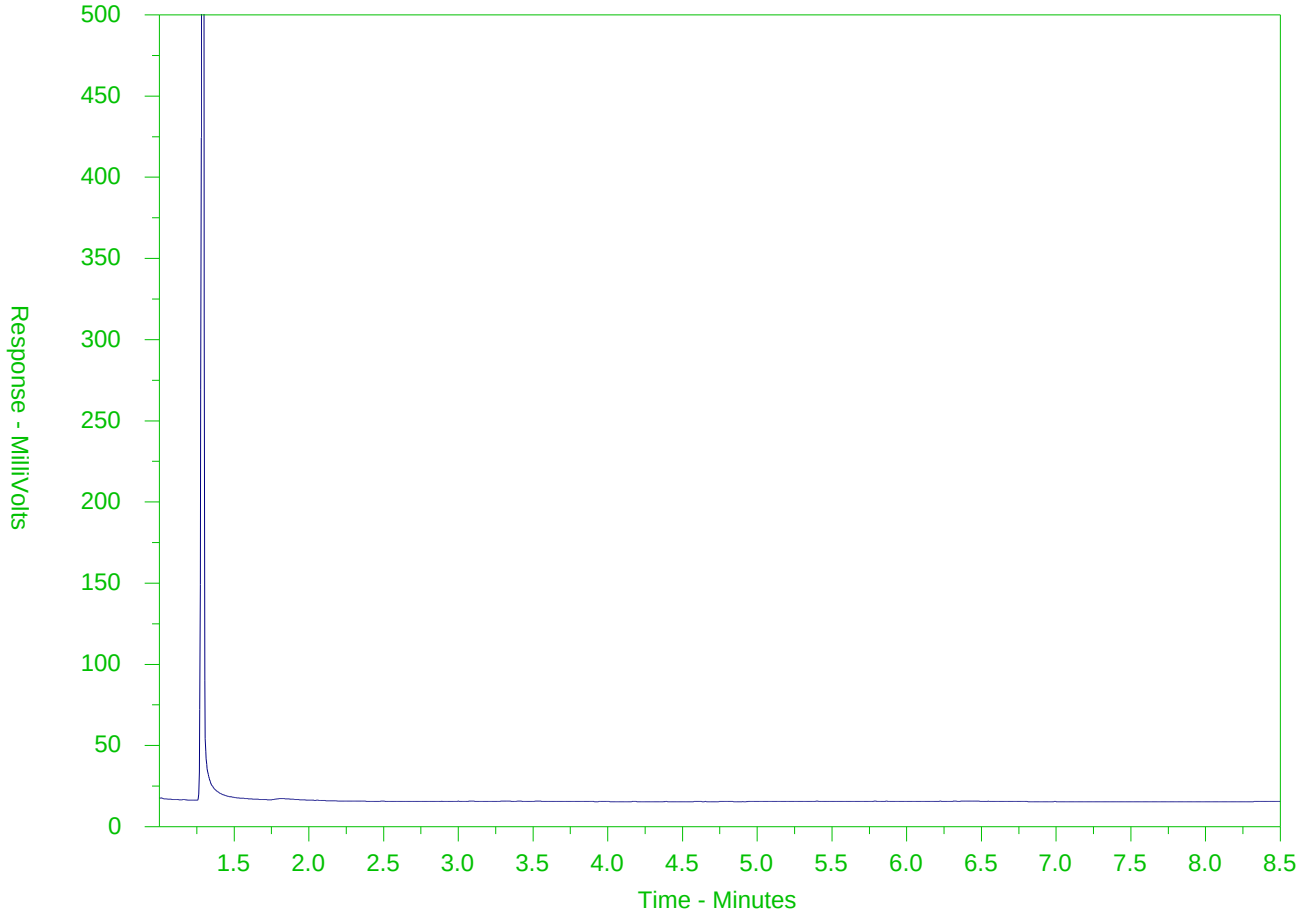
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

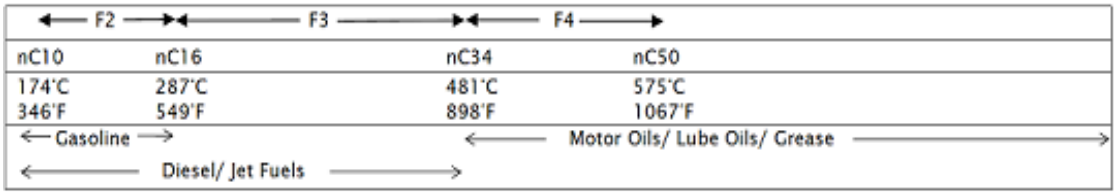
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2637412-30
Client Sample ID: EX15-21-112





The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number:

Page 1 of 3

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)

Quality Control (QC) Report with Report ☑ YES ☐ NO

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: k.lewis@mandalayresources.com

Email 2: sfiddler@golder.com

Email 3: jmusijowski@golder.com

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax:

Email 2:

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☐ | Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #: Q80711

Job #: 20446521

PO / AFE:

LSD: Lupin Mine

Oil and Gas Required Fields (client use)

AFE/Cost Center: | PO#

Major/Minor Code: | Routing Code:

Requisitioner:

Location:

ALS Lab Work Order # (lab use only): L2637412

ALS Contact: Oliver Gregg | Sampler:

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	Lead	Arsenic	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
1	EX15-21-82	07-Sep-21		Soil	4	X	X			
2	EX15-21-83					X	X			
3	EX15-21-84					X	X			
4	EX15-21-85					X	X			
5	EX15-21-86					X	X			
6	EX15-21-86D					X	X			
7	EX15-21-87					X	X			
8	EX15-21-89					X	X			
9	EX15-21-89D					X	X			
10	EX15-21-88					X	X			
11	EX15-21-90					X	X			
12	EX15-21-92					X	X			

L2637412-COFC

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human consumption/ use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ | SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ | Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			

SHIPMENT RELEASE (client use)

Released by:	Date:	Time:
R. Boyce	Sept 8/21	9:00

INITIAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:
MA	Sept 8/21	15:15

FINAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCT 2018 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**

ALS www.alsglobal.com

Request Form

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution

Select Report Format:	☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report	☑ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	k.lewis@mandalayresources.com
Email 2	sfiddler@golder.com
Email 3	jmusijowski@golder.com

Invoice Distribution

Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	
Email 2	

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☑ | Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #:	Q80711
Job #:	2044521
PO / AFE:	
LSD:	

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (lab use only):

ALS Contact: Oliver Gregg Sampler:

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	Lead	Arsenic	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
13	EXIS-21-93	07-Sep-21		Soil	4	X	X			
14	EXIS-21-93D					X	X			
15	EXIS-21-94					X	X			
16	EXIS-21-91					X	X			
17	EXIS-21-95					X	X			
18	EXIS-21-96					X	X			
19	EXIS-21-97					X	X			
20	EXIS-21-98					X	X			
21	EXIS-21-99					X	X			

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human consumption/ use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			

SHIPMENT RELEASE (client use)

Released by:	Date:	Time:
R. Boyce RLB	Sept 8/21	9:00

INITIAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:
	MM	15:15

FINAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number:

Page 3 of 3

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution	
Select Report Format:	☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report	☑ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	k.lewis@mandalayresources.com
Email 2	sfiddler@golder.com
Email 3	jmusijowski@golder.com

Invoice Distribution	
Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	
Email 2	

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days)		EMERGENCY	
	4 day [P4-20%] ☐		1 Business day [E - 100%] ☒
	3 day [P3-25%] ☐		Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐
	2 day [P2-50%] ☐		

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:	Q80711	AFE/Cost Center:	PO#
Job #:	20446521	Major/Minor Code:	Routing Code:
PO / AFE:		Requisitioner:	
LSD:		Location:	
ALS Lab Work Order # (lab use only):		ALS Contact: Oliver Gregg	Sampler:

Analysis Request

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	Lead	Arsenic	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	———			Soil						
	—									
22	EX15-21-100	07-Sep-21		Soil	4	X	X			
23	EX15-21-102				1	X	X			
24	EX15-21-104				1	X	X			
25	EX15-21-106				1	X	X			
26	EX15-21-106D				1	X	X			
27	EX15-21-108				1	X	X			
28	EX15-21-110				1	X	X			
29	EX15-21-111				1	X	X			
30	EX15-21-112				1	X	X			

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Are samples taken from a Regulated DW System? ☐ YES ☐ NO	Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427
Are samples for human consumption/ use? ☐ YES ☐ NO	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐		SIF Observations	Yes ☐	No ☐	
Ice Packs ☐	Ice Cubes ☐	Custody seal intact	Yes ☐	No ☐	
Cooling Initiated ☐					

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
R Boyce RJB	Sept 8/21	9:00						

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

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1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form.**

OCT 2018 FRONT

GOLDER ASSOCIATES LTD
ATTN: Steven Fiddler
16820 107 Ave NW
Edmonton AB T5P 4C3

Date Received: 07-SEP-21
Report Date: 20-SEP-21 17:16 (MT)
Version: FINAL

Client Phone: 780-483-3499

Certificate of Analysis

Lab Work Order #: L2637442

Project P.O. #: NOT SUBMITTED
Job Reference: 20446521
C of C Numbers:
Legal Site Desc: Lupin Mine

Harman Bhullar
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2637442-1 EX19-21-13							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	11-SEP-21	12-SEP-21	R5582849
Ethylbenzene	<0.015		0.015	mg/kg	11-SEP-21	12-SEP-21	R5582849
Toluene	0.059		0.014	mg/kg	11-SEP-21	12-SEP-21	R5582849
o-Xylene	<0.050		0.050	mg/kg	11-SEP-21	12-SEP-21	R5582849
m+p-Xylene	<0.050		0.050	mg/kg	11-SEP-21	12-SEP-21	R5582849
Surrogate: 1,4-Difluorobenzene	92.0		70-130	%	11-SEP-21	12-SEP-21	R5582849
Surrogate: 4-Bromofluorobenzene	88.8		70-130	%	11-SEP-21	12-SEP-21	R5582849
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	11-SEP-21	12-SEP-21	R5582855
Prep/Analysis Dates					11-SEP-21	12-SEP-21	R5582855
Surrogate: 2-Bromobenzotrifluoride	88.9		70-130	%	11-SEP-21	12-SEP-21	R5582855
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		12-SEP-21	
F1-BTEX	<10		10	mg/kg		12-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		12-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		12-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		12-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		12-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	105.0		70-130	%	11-SEP-21	12-SEP-21	R5582850
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		12-SEP-21	
Miscellaneous Parameters							
Moisture	5.61		0.25	%		11-SEP-21	R5582783
L2637442-2 EX19-21-14							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	11-SEP-21	12-SEP-21	R5582849
Ethylbenzene	<0.015		0.015	mg/kg	11-SEP-21	12-SEP-21	R5582849
Toluene	<0.014		0.014	mg/kg	11-SEP-21	12-SEP-21	R5582849
o-Xylene	<0.050		0.050	mg/kg	11-SEP-21	12-SEP-21	R5582849
m+p-Xylene	<0.050		0.050	mg/kg	11-SEP-21	12-SEP-21	R5582849
Surrogate: 1,4-Difluorobenzene	88.1		70-130	%	11-SEP-21	12-SEP-21	R5582849
Surrogate: 4-Bromofluorobenzene	91.4		70-130	%	11-SEP-21	12-SEP-21	R5582849
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	11-SEP-21	12-SEP-21	R5582855
Prep/Analysis Dates					11-SEP-21	12-SEP-21	R5582855
Surrogate: 2-Bromobenzotrifluoride	92.2		70-130	%	11-SEP-21	12-SEP-21	R5582855
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		12-SEP-21	
F1-BTEX	<10		10	mg/kg		12-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		12-SEP-21	
F3 (C16-C34)	69		50	mg/kg		12-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		12-SEP-21	
Total Hydrocarbons (C6-C50)	69		50	mg/kg		12-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	111.7		70-130	%	11-SEP-21	12-SEP-21	R5582850
Sum of Xylene Isomer Concentrations							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2637442-2 EX19-21-14							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		12-SEP-21	
Miscellaneous Parameters							
Moisture	5.47		0.25	%		11-SEP-21	R5582783
L2637442-3 EX19-21-20							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	11-SEP-21	12-SEP-21	R5582849
Ethylbenzene	<0.015		0.015	mg/kg	11-SEP-21	12-SEP-21	R5582849
Toluene	<0.014		0.014	mg/kg	11-SEP-21	12-SEP-21	R5582849
o-Xylene	<0.050		0.050	mg/kg	11-SEP-21	12-SEP-21	R5582849
m+p-Xylene	<0.050		0.050	mg/kg	11-SEP-21	12-SEP-21	R5582849
Surrogate: 1,4-Difluorobenzene	91.8		70-130	%	11-SEP-21	12-SEP-21	R5582849
Surrogate: 4-Bromofluorobenzene	89.1		70-130	%	11-SEP-21	12-SEP-21	R5582849
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	11-SEP-21	12-SEP-21	R5582855
Prep/Analysis Dates					11-SEP-21	12-SEP-21	R5582855
Surrogate: 2-Bromobenzotrifluoride	89.0		70-130	%	11-SEP-21	12-SEP-21	R5582855
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		12-SEP-21	
F1-BTEX	<10		10	mg/kg		12-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		12-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		12-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		12-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		12-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	112.5		70-130	%	11-SEP-21	12-SEP-21	R5582850
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		12-SEP-21	
Miscellaneous Parameters							
Moisture	5.07		0.25	%		11-SEP-21	R5582783
L2637442-4 EX19-21-22							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	11-SEP-21	12-SEP-21	R5582849
Ethylbenzene	<0.015		0.015	mg/kg	11-SEP-21	12-SEP-21	R5582849
Toluene	0.028		0.014	mg/kg	11-SEP-21	12-SEP-21	R5582849
o-Xylene	<0.050		0.050	mg/kg	11-SEP-21	12-SEP-21	R5582849
m+p-Xylene	<0.050		0.050	mg/kg	11-SEP-21	12-SEP-21	R5582849
Surrogate: 1,4-Difluorobenzene	88.6		70-130	%	11-SEP-21	12-SEP-21	R5582849
Surrogate: 4-Bromofluorobenzene	92.0		70-130	%	11-SEP-21	12-SEP-21	R5582849
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	11-SEP-21	12-SEP-21	R5582855
Prep/Analysis Dates					11-SEP-21	12-SEP-21	R5582855
Surrogate: 2-Bromobenzotrifluoride	91.9		70-130	%	11-SEP-21	12-SEP-21	R5582855
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		12-SEP-21	
F1-BTEX	<10		10	mg/kg		12-SEP-21	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2637442-4 EX19-21-22							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
CCME Total Hydrocarbons							
F2 (C10-C16)	<25		25	mg/kg		12-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		12-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		12-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		12-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	103.6		70-130	%	11-SEP-21	12-SEP-21	R5582850
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		12-SEP-21	
Miscellaneous Parameters							
Moisture	3.84		0.25	%		11-SEP-21	R5582783
L2637442-5 EX19-21-26							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	11-SEP-21	12-SEP-21	R5582849
Ethylbenzene	<0.015		0.015	mg/kg	11-SEP-21	12-SEP-21	R5582849
Toluene	<0.014		0.014	mg/kg	11-SEP-21	12-SEP-21	R5582849
o-Xylene	<0.050		0.050	mg/kg	11-SEP-21	12-SEP-21	R5582849
m+p-Xylene	<0.050		0.050	mg/kg	11-SEP-21	12-SEP-21	R5582849
Surrogate: 1,4-Difluorobenzene	88.1		70-130	%	11-SEP-21	12-SEP-21	R5582849
Surrogate: 4-Bromofluorobenzene	90.3		70-130	%	11-SEP-21	12-SEP-21	R5582849
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	11-SEP-21	12-SEP-21	R5582855
Prep/Analysis Dates					11-SEP-21	12-SEP-21	R5582855
Surrogate: 2-Bromobenzotrifluoride	91.4		70-130	%	11-SEP-21	12-SEP-21	R5582855
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		12-SEP-21	
F1-BTEX	<10		10	mg/kg		12-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		12-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		12-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		12-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		12-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	103.3		70-130	%	11-SEP-21	12-SEP-21	R5582850
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		12-SEP-21	
Miscellaneous Parameters							
Moisture	3.70		0.25	%		11-SEP-21	R5582783
L2637442-6 EX19-21-27							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	11-SEP-21	12-SEP-21	R5582849
Ethylbenzene	<0.015		0.015	mg/kg	11-SEP-21	12-SEP-21	R5582849
Toluene	<0.014		0.014	mg/kg	11-SEP-21	12-SEP-21	R5582849
o-Xylene	<0.050		0.050	mg/kg	11-SEP-21	12-SEP-21	R5582849
m+p-Xylene	<0.050		0.050	mg/kg	11-SEP-21	12-SEP-21	R5582849
Surrogate: 1,4-Difluorobenzene	86.1		70-130	%	11-SEP-21	12-SEP-21	R5582849
Surrogate: 4-Bromofluorobenzene	85.5		70-130	%	11-SEP-21	12-SEP-21	R5582849

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2637442-6 EX19-21-27							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	11-SEP-21	12-SEP-21	R5582855
Prep/Analysis Dates					11-SEP-21	12-SEP-21	R5582855
Surrogate: 2-Bromobenzotrifluoride	92.1		70-130	%	11-SEP-21	12-SEP-21	R5582855
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		12-SEP-21	
F1-BTEX	<10		10	mg/kg		12-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		12-SEP-21	
F3 (C16-C34)	196		50	mg/kg		12-SEP-21	
F4 (C34-C50)	95		50	mg/kg		12-SEP-21	
Total Hydrocarbons (C6-C50)	291		50	mg/kg		12-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	102.3		70-130	%	11-SEP-21	12-SEP-21	R5582850
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		12-SEP-21	
Miscellaneous Parameters							
Moisture	5.36		0.25	%		11-SEP-21	R5582783
L2637442-7 EX19-21-30							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	11-SEP-21	12-SEP-21	R5582849
Ethylbenzene	<0.015		0.015	mg/kg	11-SEP-21	12-SEP-21	R5582849
Toluene	0.022		0.014	mg/kg	11-SEP-21	12-SEP-21	R5582849
o-Xylene	0.233		0.050	mg/kg	11-SEP-21	12-SEP-21	R5582849
m+p-Xylene	0.131		0.050	mg/kg	11-SEP-21	12-SEP-21	R5582849
Surrogate: 1,4-Difluorobenzene	86.6		70-130	%	11-SEP-21	12-SEP-21	R5582849
Surrogate: 4-Bromofluorobenzene	71.4		70-130	%	11-SEP-21	12-SEP-21	R5582849
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	11-SEP-21	12-SEP-21	R5582855
Prep/Analysis Dates					11-SEP-21	12-SEP-21	R5582855
Surrogate: 2-Bromobenzotrifluoride	74.6		70-130	%	11-SEP-21	12-SEP-21	R5582855
CCME Total Hydrocarbons							
F1 (C6-C10)	303		10	mg/kg		12-SEP-21	
F1-BTEX	303		10	mg/kg		12-SEP-21	
F2 (C10-C16)	7840		25	mg/kg		12-SEP-21	
F3 (C16-C34)	1570		50	mg/kg		12-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		12-SEP-21	
Total Hydrocarbons (C6-C50)	9710		50	mg/kg		12-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	N/A	SMI	-	%	11-SEP-21	12-SEP-21	R5582850
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	0.364		0.071	mg/kg		12-SEP-21	
Miscellaneous Parameters							
Moisture	5.06		0.25	%		11-SEP-21	R5582783
L2637442-8 EX19-21-30D							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	11-SEP-21	12-SEP-21	R5582849

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2637442-8 EX19-21-30D							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX and Styrene							
Ethylbenzene	<0.023	DLCI	0.023	mg/kg	11-SEP-21	12-SEP-21	R5582849
Toluene	0.024		0.014	mg/kg	11-SEP-21	12-SEP-21	R5582849
o-Xylene	0.251		0.050	mg/kg	11-SEP-21	12-SEP-21	R5582849
m+p-Xylene	0.153		0.050	mg/kg	11-SEP-21	12-SEP-21	R5582849
Surrogate: 1,4-Difluorobenzene	88.2		70-130	%	11-SEP-21	12-SEP-21	R5582849
Surrogate: 4-Bromofluorobenzene	70.2		70-130	%	11-SEP-21	12-SEP-21	R5582849
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	11-SEP-21	12-SEP-21	R5582855
Prep/Analysis Dates					11-SEP-21	12-SEP-21	R5582855
Surrogate: 2-Bromobenzotrifluoride	73.2		70-130	%	11-SEP-21	12-SEP-21	R5582855
CCME Total Hydrocarbons							
F1 (C6-C10)	295		10	mg/kg		12-SEP-21	
F1-BTEX	295		10	mg/kg		12-SEP-21	
F2 (C10-C16)	7160		25	mg/kg		12-SEP-21	
F3 (C16-C34)	1550		50	mg/kg		12-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		12-SEP-21	
Total Hydrocarbons (C6-C50)	9010		50	mg/kg		12-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	N/A	SMI	-	%	11-SEP-21	12-SEP-21	R5582850
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	0.404		0.071	mg/kg		12-SEP-21	
Miscellaneous Parameters							
Moisture	5.09		0.25	%		11-SEP-21	R5582783
L2637442-9 EX19-21-31							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	11-SEP-21	12-SEP-21	R5582849
Ethylbenzene	<0.015		0.015	mg/kg	11-SEP-21	12-SEP-21	R5582849
Toluene	0.015		0.014	mg/kg	11-SEP-21	12-SEP-21	R5582849
o-Xylene	<0.050		0.050	mg/kg	11-SEP-21	12-SEP-21	R5582849
m+p-Xylene	<0.050		0.050	mg/kg	11-SEP-21	12-SEP-21	R5582849
Surrogate: 1,4-Difluorobenzene	88.1		70-130	%	11-SEP-21	12-SEP-21	R5582849
Surrogate: 4-Bromofluorobenzene	82.2		70-130	%	11-SEP-21	12-SEP-21	R5582849
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	11-SEP-21	12-SEP-21	R5582855
Prep/Analysis Dates					11-SEP-21	12-SEP-21	R5582855
Surrogate: 2-Bromobenzotrifluoride	73.7		70-130	%	11-SEP-21	12-SEP-21	R5582855
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		12-SEP-21	
F1-BTEX	<10		10	mg/kg		12-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		12-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		12-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		12-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		12-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	107.9		70-130	%	11-SEP-21	12-SEP-21	R5582850
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		12-SEP-21	
Miscellaneous Parameters							

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2637442-9 EX19-21-31							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
Moisture	4.81		0.25	%		11-SEP-21	R5582783
L2637442-10 EX19-21-32							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	11-SEP-21	12-SEP-21	R5582849
Ethylbenzene	<0.015		0.015	mg/kg	11-SEP-21	12-SEP-21	R5582849
Toluene	0.017		0.014	mg/kg	11-SEP-21	12-SEP-21	R5582849
o-Xylene	<0.050		0.050	mg/kg	11-SEP-21	12-SEP-21	R5582849
m+p-Xylene	<0.050		0.050	mg/kg	11-SEP-21	12-SEP-21	R5582849
Surrogate: 1,4-Difluorobenzene	93.7		70-130	%	11-SEP-21	12-SEP-21	R5582849
Surrogate: 4-Bromofluorobenzene	85.3		70-130	%	11-SEP-21	12-SEP-21	R5582849
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	11-SEP-21	12-SEP-21	R5582855
Prep/Analysis Dates					11-SEP-21	12-SEP-21	R5582855
Surrogate: 2-Bromobenzotrifluoride	74.4		70-130	%	11-SEP-21	12-SEP-21	R5582855
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		12-SEP-21	
F1-BTEX	<10		10	mg/kg		12-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		12-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		12-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		12-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		12-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	106.4		70-130	%	11-SEP-21	12-SEP-21	R5582850
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		12-SEP-21	
Miscellaneous Parameters							
Moisture	5.31		0.25	%		11-SEP-21	R5582783
L2637442-11 EX21-21-126							
Sampled By: CLIENT on 05-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	11-SEP-21	12-SEP-21	R5582849
Ethylbenzene	<0.015		0.015	mg/kg	11-SEP-21	12-SEP-21	R5582849
Toluene	0.177		0.014	mg/kg	11-SEP-21	12-SEP-21	R5582849
o-Xylene	<0.050		0.050	mg/kg	11-SEP-21	12-SEP-21	R5582849
m+p-Xylene	<0.050		0.050	mg/kg	11-SEP-21	12-SEP-21	R5582849
Surrogate: 1,4-Difluorobenzene	107.9		70-130	%	11-SEP-21	12-SEP-21	R5582849
Surrogate: 4-Bromofluorobenzene	100.7		70-130	%	11-SEP-21	12-SEP-21	R5582849
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	11-SEP-21	12-SEP-21	R5582855
Prep/Analysis Dates					11-SEP-21	12-SEP-21	R5582855
Surrogate: 2-Bromobenzotrifluoride	75.3		70-130	%	11-SEP-21	12-SEP-21	R5582855
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		12-SEP-21	
F1-BTEX	<10		10	mg/kg		12-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		12-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		12-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		12-SEP-21	

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2637442-11 EX21-21-126							
Sampled By: CLIENT on 05-SEP-21							
Matrix: SOIL							
CCME Total Hydrocarbons							
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		12-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	121.1		70-130	%	11-SEP-21	12-SEP-21	R5582850
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		12-SEP-21	
Miscellaneous Parameters							
Moisture	5.14		0.25	%		11-SEP-21	R5582783
L2637442-12 EX21-21-127							
Sampled By: CLIENT on 05-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	11-SEP-21	12-SEP-21	R5582849
Ethylbenzene	<0.015		0.015	mg/kg	11-SEP-21	12-SEP-21	R5582849
Toluene	0.079		0.014	mg/kg	11-SEP-21	12-SEP-21	R5582849
o-Xylene	<0.050		0.050	mg/kg	11-SEP-21	12-SEP-21	R5582849
m+p-Xylene	<0.050		0.050	mg/kg	11-SEP-21	12-SEP-21	R5582849
Surrogate: 1,4-Difluorobenzene	97.8		70-130	%	11-SEP-21	12-SEP-21	R5582849
Surrogate: 4-Bromofluorobenzene	92.2		70-130	%	11-SEP-21	12-SEP-21	R5582849
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	11-SEP-21	12-SEP-21	R5582855
Prep/Analysis Dates					11-SEP-21	12-SEP-21	R5582855
Surrogate: 2-Bromobenzotrifluoride	70.9		70-130	%	11-SEP-21	12-SEP-21	R5582855
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		12-SEP-21	
F1-BTEX	<10		10	mg/kg		12-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		12-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		12-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		12-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		12-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	113.9		70-130	%	11-SEP-21	12-SEP-21	R5582850
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		12-SEP-21	
Miscellaneous Parameters							
Moisture	10.0		0.25	%		11-SEP-21	R5582783
L2637442-13 EX21-21-128							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	11-SEP-21	12-SEP-21	R5582849
Ethylbenzene	<0.015		0.015	mg/kg	11-SEP-21	12-SEP-21	R5582849
Toluene	<0.014		0.014	mg/kg	11-SEP-21	12-SEP-21	R5582849
o-Xylene	<0.050		0.050	mg/kg	11-SEP-21	12-SEP-21	R5582849
m+p-Xylene	<0.050		0.050	mg/kg	11-SEP-21	12-SEP-21	R5582849
Surrogate: 1,4-Difluorobenzene	93.8		70-130	%	11-SEP-21	12-SEP-21	R5582849
Surrogate: 4-Bromofluorobenzene	87.8		70-130	%	11-SEP-21	12-SEP-21	R5582849
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	11-SEP-21	12-SEP-21	R5582855
Prep/Analysis Dates					11-SEP-21	12-SEP-21	R5582855

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2637442-13 EX21-21-128							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
CCME F2-4 Hydrocarbons							
Surrogate: 2-Bromobenzotrifluoride	72.5		70-130	%	11-SEP-21	12-SEP-21	R5582855
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		12-SEP-21	
F1-BTEX	<10		10	mg/kg		12-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		12-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		12-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		12-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		12-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	114.9		70-130	%	11-SEP-21	12-SEP-21	R5582850
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		12-SEP-21	
Miscellaneous Parameters							
Moisture	4.52		0.25	%		11-SEP-21	R5582783
L2637442-14 EX21-21-129							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	11-SEP-21	12-SEP-21	R5582849
Ethylbenzene	<0.015		0.015	mg/kg	11-SEP-21	12-SEP-21	R5582849
Toluene	0.092		0.014	mg/kg	11-SEP-21	12-SEP-21	R5582849
o-Xylene	<0.050		0.050	mg/kg	11-SEP-21	12-SEP-21	R5582849
m+p-Xylene	<0.050		0.050	mg/kg	11-SEP-21	12-SEP-21	R5582849
Surrogate: 1,4-Difluorobenzene	94.2		70-130	%	11-SEP-21	12-SEP-21	R5582849
Surrogate: 4-Bromofluorobenzene	90.0		70-130	%	11-SEP-21	12-SEP-21	R5582849
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	11-SEP-21	12-SEP-21	R5582855
Prep/Analysis Dates					11-SEP-21	12-SEP-21	R5582855
Surrogate: 2-Bromobenzotrifluoride	76.2		70-130	%	11-SEP-21	12-SEP-21	R5582855
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		12-SEP-21	
F1-BTEX	<10		10	mg/kg		12-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		12-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		12-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		12-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		12-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	114.3		70-130	%	11-SEP-21	12-SEP-21	R5582850
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		12-SEP-21	
Miscellaneous Parameters							
Moisture	4.26		0.25	%		11-SEP-21	R5582783
L2637442-15 EX21-21-130							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	11-SEP-21	12-SEP-21	R5582849
Ethylbenzene	<0.015		0.015	mg/kg	11-SEP-21	12-SEP-21	R5582849
Toluene	0.038		0.014	mg/kg	11-SEP-21	12-SEP-21	R5582849

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2637442-15 EX21-21-130							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX and Styrene							
o-Xylene	<0.050		0.050	mg/kg	11-SEP-21	12-SEP-21	R5582849
m+p-Xylene	<0.050		0.050	mg/kg	11-SEP-21	12-SEP-21	R5582849
Surrogate: 1,4-Difluorobenzene	98.5		70-130	%	11-SEP-21	12-SEP-21	R5582849
Surrogate: 4-Bromofluorobenzene	94.4		70-130	%	11-SEP-21	12-SEP-21	R5582849
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	11-SEP-21	12-SEP-21	R5582855
Prep/Analysis Dates					11-SEP-21	12-SEP-21	R5582855
Surrogate: 2-Bromobenzotrifluoride	71.7		70-130	%	11-SEP-21	12-SEP-21	R5582855
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		12-SEP-21	
F1-BTEX	<10		10	mg/kg		12-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		12-SEP-21	
F3 (C16-C34)	68		50	mg/kg		12-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		12-SEP-21	
Total Hydrocarbons (C6-C50)	68		50	mg/kg		12-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	120.0		70-130	%	11-SEP-21	12-SEP-21	R5582850
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		12-SEP-21	
Miscellaneous Parameters							
Moisture	7.24		0.25	%		11-SEP-21	R5582783
L2637442-16 EX21-21-131							
Sampled By: CLIENT on 07-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	11-SEP-21	12-SEP-21	R5582849
Ethylbenzene	<0.015		0.015	mg/kg	11-SEP-21	12-SEP-21	R5582849
Toluene	0.063		0.014	mg/kg	11-SEP-21	12-SEP-21	R5582849
o-Xylene	<0.050		0.050	mg/kg	11-SEP-21	12-SEP-21	R5582849
m+p-Xylene	<0.050		0.050	mg/kg	11-SEP-21	12-SEP-21	R5582849
Surrogate: 1,4-Difluorobenzene	95.8		70-130	%	11-SEP-21	12-SEP-21	R5582849
Surrogate: 4-Bromofluorobenzene	87.2		70-130	%	11-SEP-21	12-SEP-21	R5582849
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	11-SEP-21	12-SEP-21	R5582855
Prep/Analysis Dates					11-SEP-21	12-SEP-21	R5582855
Surrogate: 2-Bromobenzotrifluoride	70.3		70-130	%	11-SEP-21	12-SEP-21	R5582855
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		12-SEP-21	
F1-BTEX	<10		10	mg/kg		12-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		12-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		12-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		12-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		12-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	105.3		70-130	%	11-SEP-21	12-SEP-21	R5582850
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		12-SEP-21	
Miscellaneous Parameters							
Moisture	4.74		0.25	%		11-SEP-21	R5582783

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
DLCI	Detection Limit Raised: Chromatographic Interference due to co-elution.
SMI	Surrogate recovery could not be measured due to sample matrix interference.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BTXS-MEOH-HS-MS-CL	Soil	BTEX and Styrene	EPA 8260C/5021A

The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. Target compound concentrations are measured using mass spectrometry detection.

F1-4-CALC-CL	Soil	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-MEOH-HS-FID-CL	Soil	F1(C6-C10)	CWS PHC Tier 1

The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. The F1 fraction concentration is measured using flame ionization detection.

F2-4-TMB-H/A-FID-CL	Soil	CCME F2-4 Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

This analysis is carried out in accordance with the "Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method, Canadian Council of Ministers of the Environment, December 2001." For C10 to C50 hydrocarbons (F2, F3, F4) and gravimetric heavy hydrocarbons (F4G-sg), a subsample of the sediment/soil is extracted with 1:1 hexane:acetone using a rotary extractor. The extract undergoes a silica-gel clean-up to remove polar compounds. F2, F3 & F4 are analyzed by on-column GC/FID, and F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where F4 (C34-C50) and F4G-sg results are reported for a sample, the larger of the reported values is used for comparison against the relevant CCME standard for F4.
7. The gravimetric heavy hydrocarbon results (F4G-sg), cannot be added to the C6 to C50 hydrocarbon results.
8. This method is validated for use.
9. Data from analysis of quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram.

MOISTURE-CL	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)

This analysis is carried out gravimetrically by drying the sample at 105 C

XYLENES-SUM-CALC-CL	Soil	Sum of Xylene Isomer Concentrations	CALCULATED RESULT

Total xylenes represents the sum of o-xylene and m&p-xylene.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
CL	ALS ENVIRONMENTAL - CALGARY, ALBERTA, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L2637442 Report Date: 20-SEP-21

Client: GOLDER ASSOCIATES LTD
16820 107 Ave NW
Edmonton AB T5P 4C3
Contact: Steven Fiddler

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTXS-MEOH-HS-MS-CL	**Soil**							
Batch R5582849								
WG3615471-3 DUP		**L2637442-1**						
Benzene		<0.0050	<0.0050	RPD-NA	mg/kg	N/A	30	12-SEP-21
Ethylbenzene		<0.015	<0.015	RPD-NA	mg/kg	N/A	30	12-SEP-21
Toluene		0.059	0.062		mg/kg	3.9	30	12-SEP-21
o-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	12-SEP-21
m+p-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	12-SEP-21
WG3615471-2 LCS								
Benzene			90.8		%		70-130	12-SEP-21
Ethylbenzene			85.9		%		70-130	12-SEP-21
Toluene			83.3		%		70-130	12-SEP-21
o-Xylene			88.7		%		70-130	12-SEP-21
m+p-Xylene			89.7		%		70-130	12-SEP-21
WG3615471-1 MB								
Benzene			<0.0050		mg/kg		0.005	12-SEP-21
Ethylbenzene			<0.015		mg/kg		0.015	12-SEP-21
Toluene			<0.014		mg/kg		0.014	12-SEP-21
o-Xylene			<0.050		mg/kg		0.05	12-SEP-21
m+p-Xylene			<0.050		mg/kg		0.05	12-SEP-21
Surrogate: 1,4-Difluorobenzene			100.1		%		70-130	12-SEP-21
Surrogate: 4-Bromofluorobenzene			94.8		%		70-130	12-SEP-21
F1-MEOH-HS-FID-CL	**Soil**							
Batch R5582850								
WG3615471-3 DUP		**L2637442-1**						
F1(C6-C10)		<10	<10	RPD-NA	mg/kg	N/A	30	12-SEP-21
WG3615471-2 LCS								
F1(C6-C10)			126.7		%		70-130	12-SEP-21
WG3615471-1 MB								
F1(C6-C10)			<10		mg/kg		10	12-SEP-21
Surrogate: 3,4-Dichlorotoluene			118.4		%		70-130	12-SEP-21
F2-4-TMB-H/A-FID-CL	**Soil**							
Batch R5582855								
WG3615475-3 DUP		**L2637442-1**						
F2: (C10-C16)		<25	<25	RPD-NA	mg/kg	N/A	40	12-SEP-21
F3: (C16-C34)		<50	<50	RPD-NA	mg/kg	N/A	40	12-SEP-21
F4: (C34-C50)		<50	<50	RPD-NA	mg/kg	N/A	40	12-SEP-21
WG3615475-4 IRM		**ALS PHC3 RM**						

Quality Control Report

Workorder: L2637442 Report Date: 20-SEP-21

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-4-TMB-H/A-FID-CL	**Soil**							
Batch R5582855								
WG3615475-4 IRM		**ALS PHC3 RM**						
F2: (C10-C16)			93.0		%		70-130	12-SEP-21
F3: (C16-C34)			91.9		%		70-130	12-SEP-21
F4: (C34-C50)			99.9		%		70-130	12-SEP-21
WG3615475-2 LCS								
F2: (C10-C16)			98.1		%		70-130	12-SEP-21
F3: (C16-C34)			96.2		%		70-130	12-SEP-21
F4: (C34-C50)			115.1		%		70-130	12-SEP-21
WG3615475-1 MB								
F2: (C10-C16)			<25		mg/kg		25	12-SEP-21
F3: (C16-C34)			<50		mg/kg		50	12-SEP-21
F4: (C34-C50)			<50		mg/kg		50	12-SEP-21
Surrogate: 2-Bromobenzotrifluoride			97.0		%		70-130	12-SEP-21
MOISTURE-CL	**Soil**							
Batch R5582783								
WG3615479-3 DUP		**L2637442-1**						
Moisture		5.61	6.23		%	10	20	11-SEP-21
WG3615479-2 LCS								
Moisture			99.5		%		90-110	11-SEP-21
WG3615479-1 MB								
Moisture			<0.25		%		0.25	11-SEP-21

Quality Control Report

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

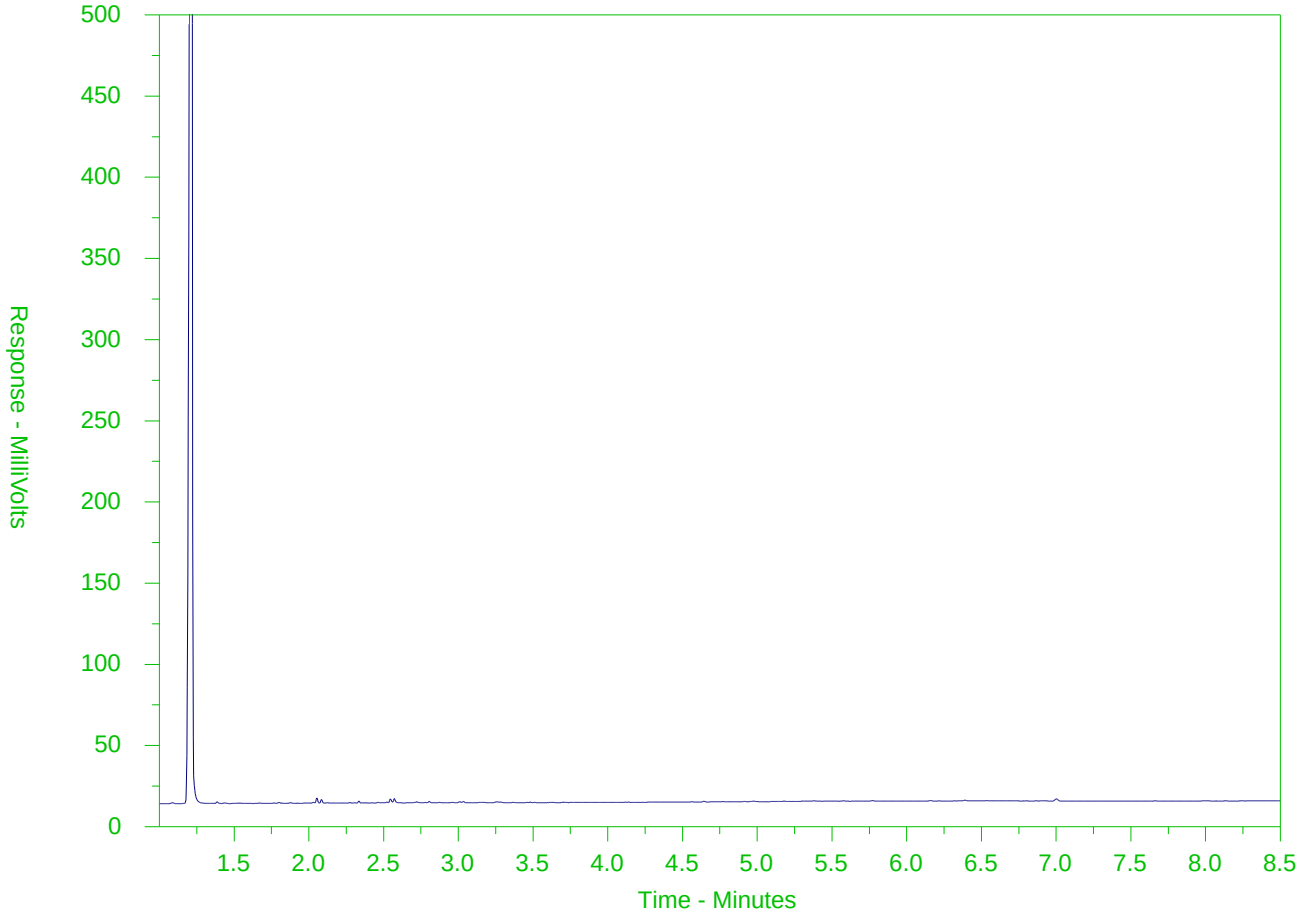
All test results reported with this submission were conducted within ALS recommended hold times.

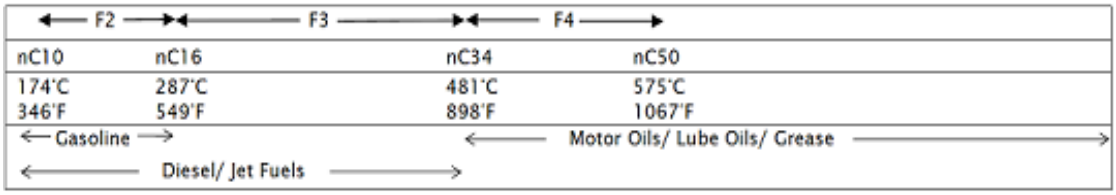
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

ALS Sample ID: L2637442-1
Client Sample ID: EX19-21-13





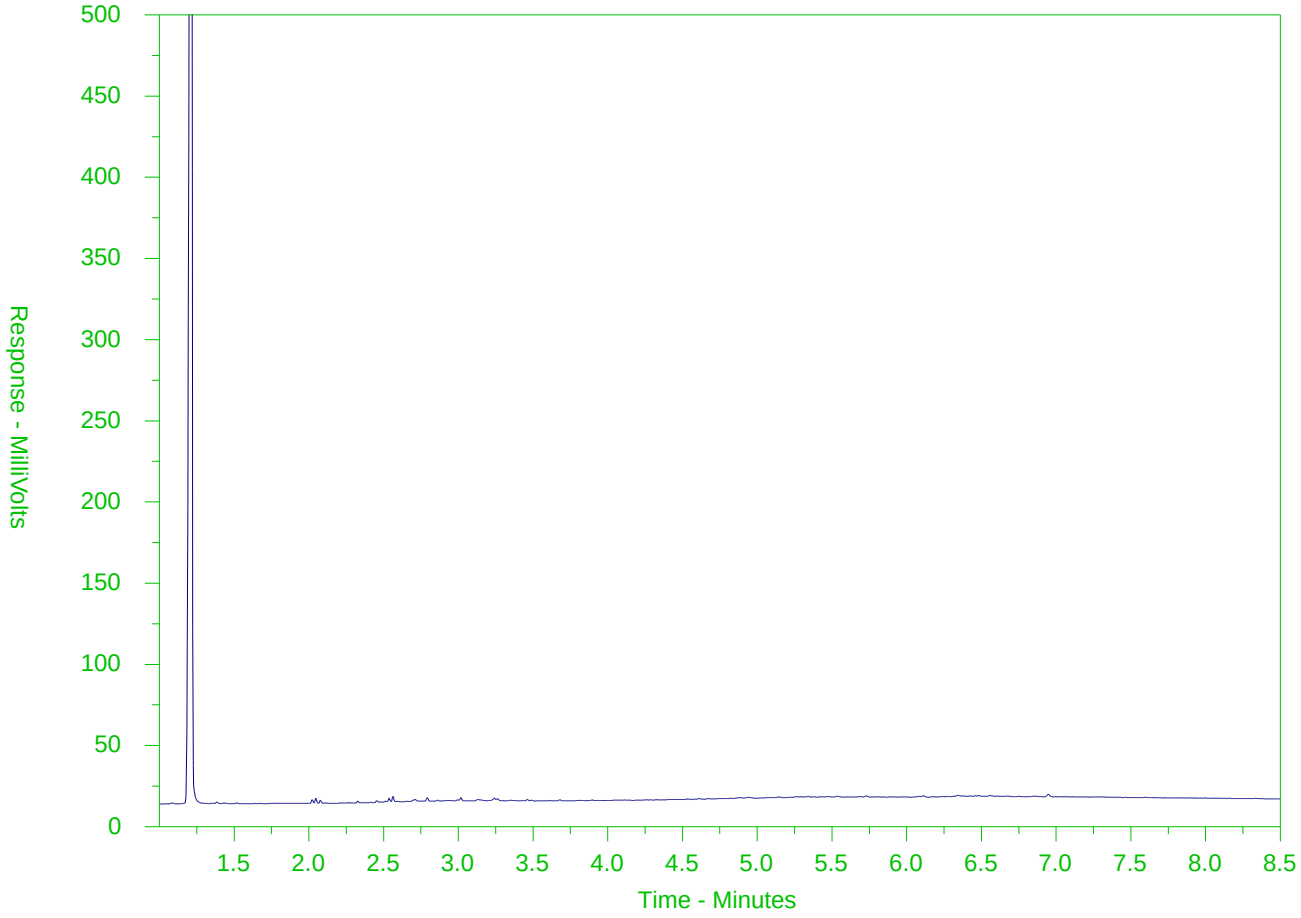
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

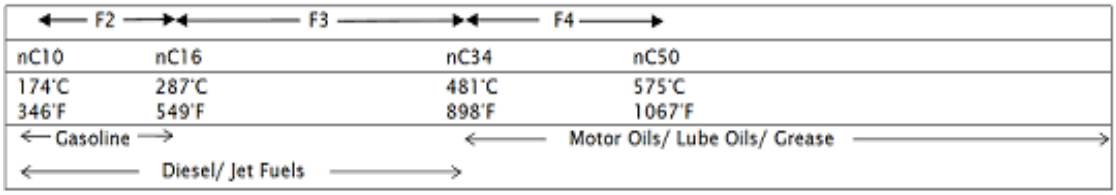
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2637442-2
Client Sample ID: EX19-21-14





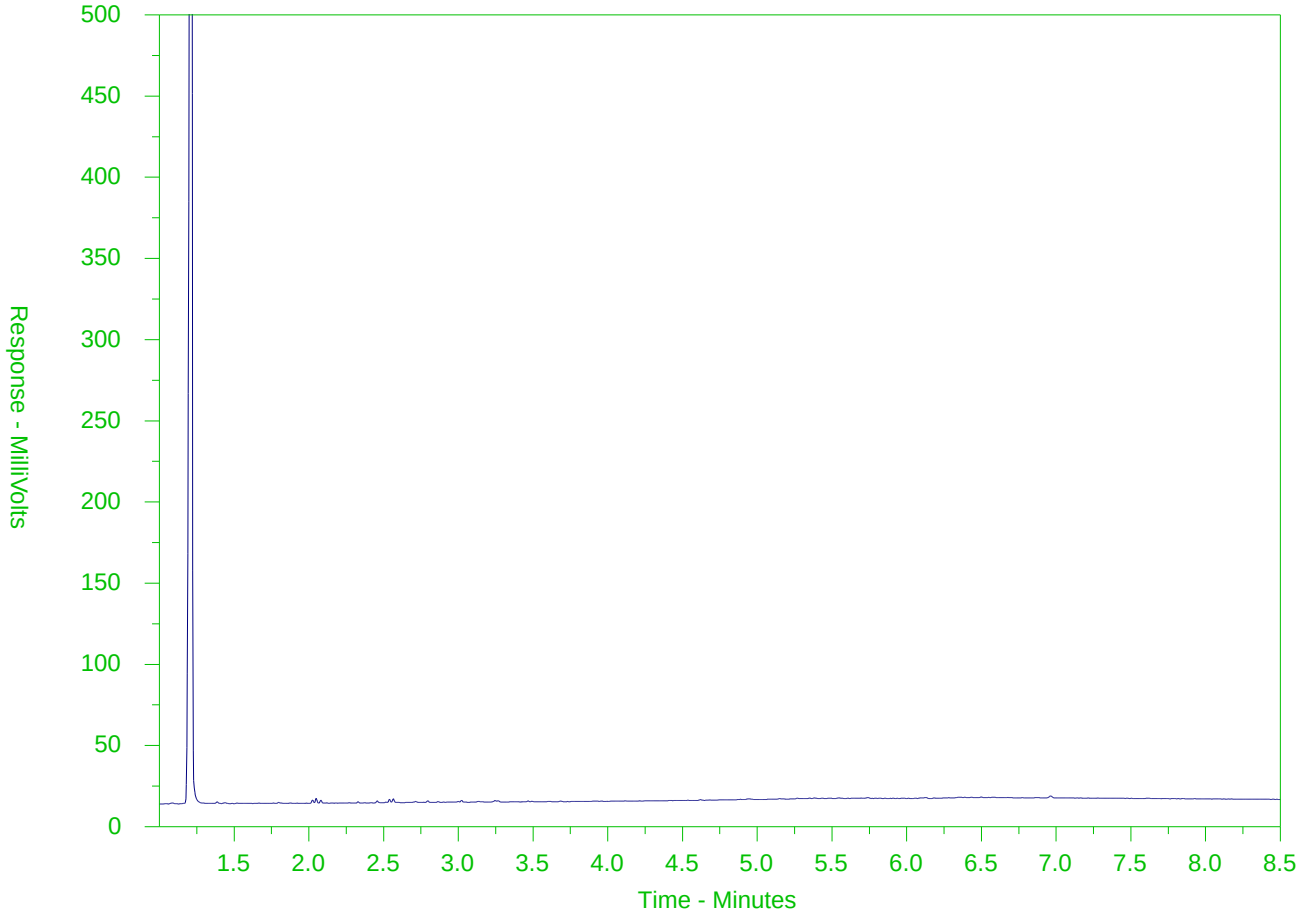
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

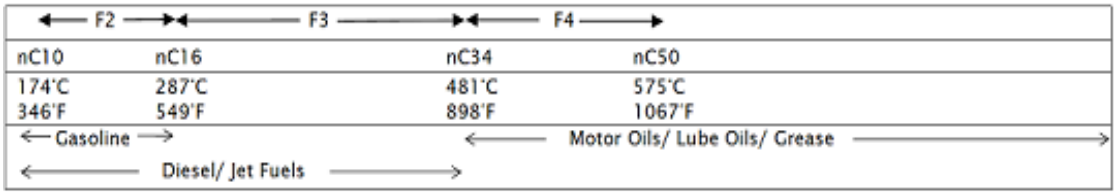
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2637442-3
Client Sample ID: EX19-21-20





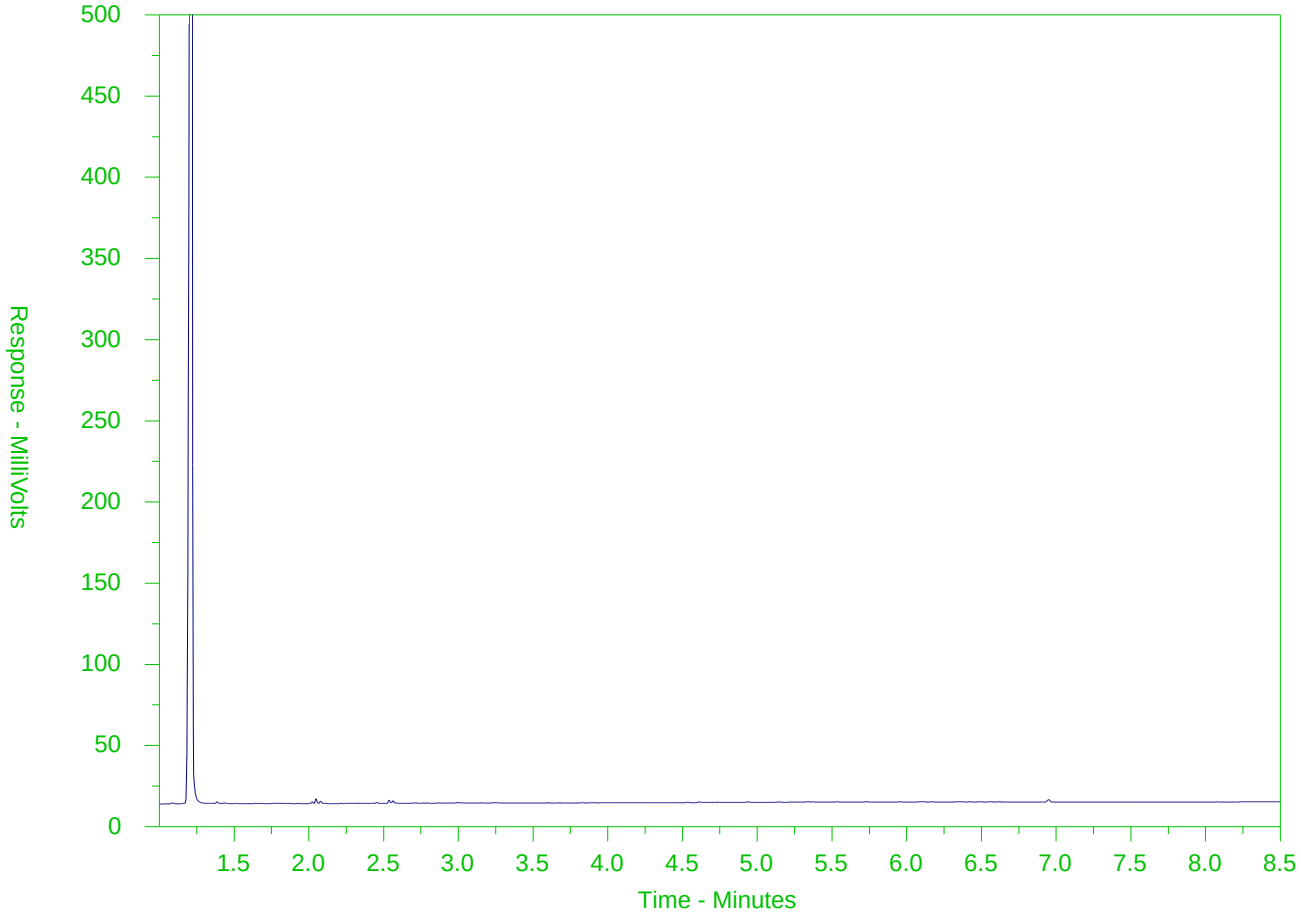
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

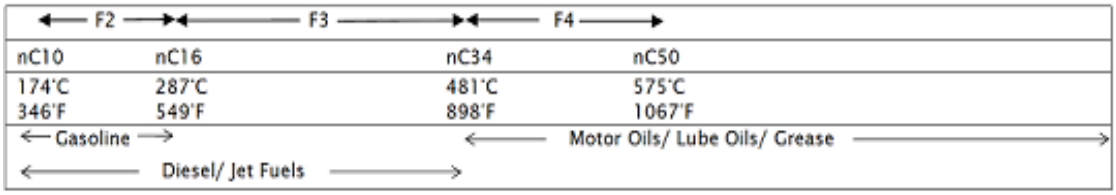
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2637442-4
Client Sample ID: EX19-21-22





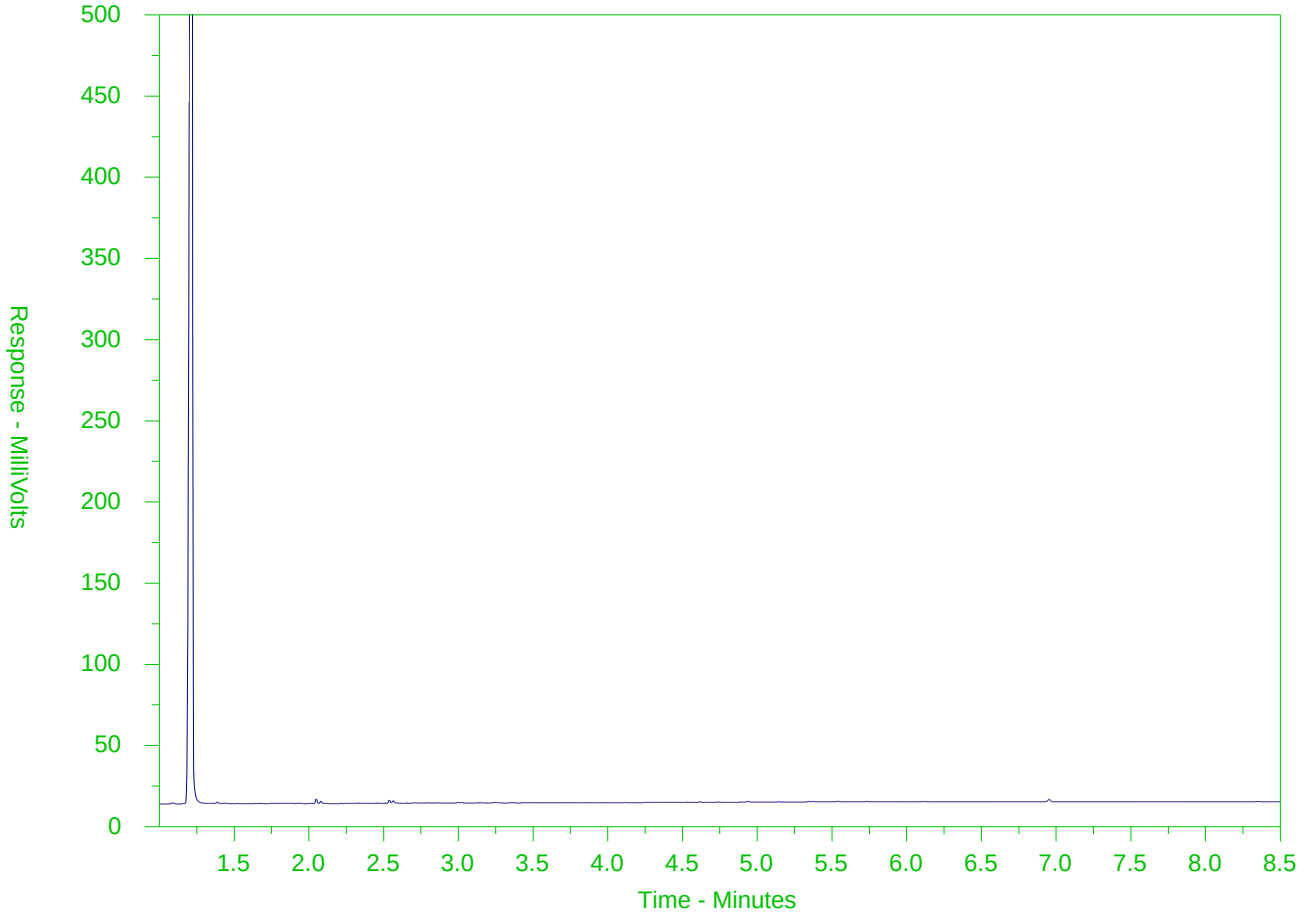
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

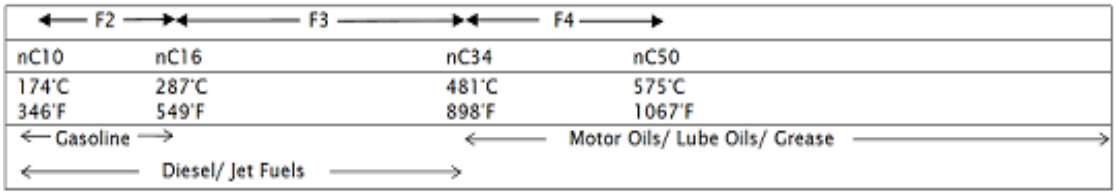
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2637442-5
Client Sample ID: EX19-21-26





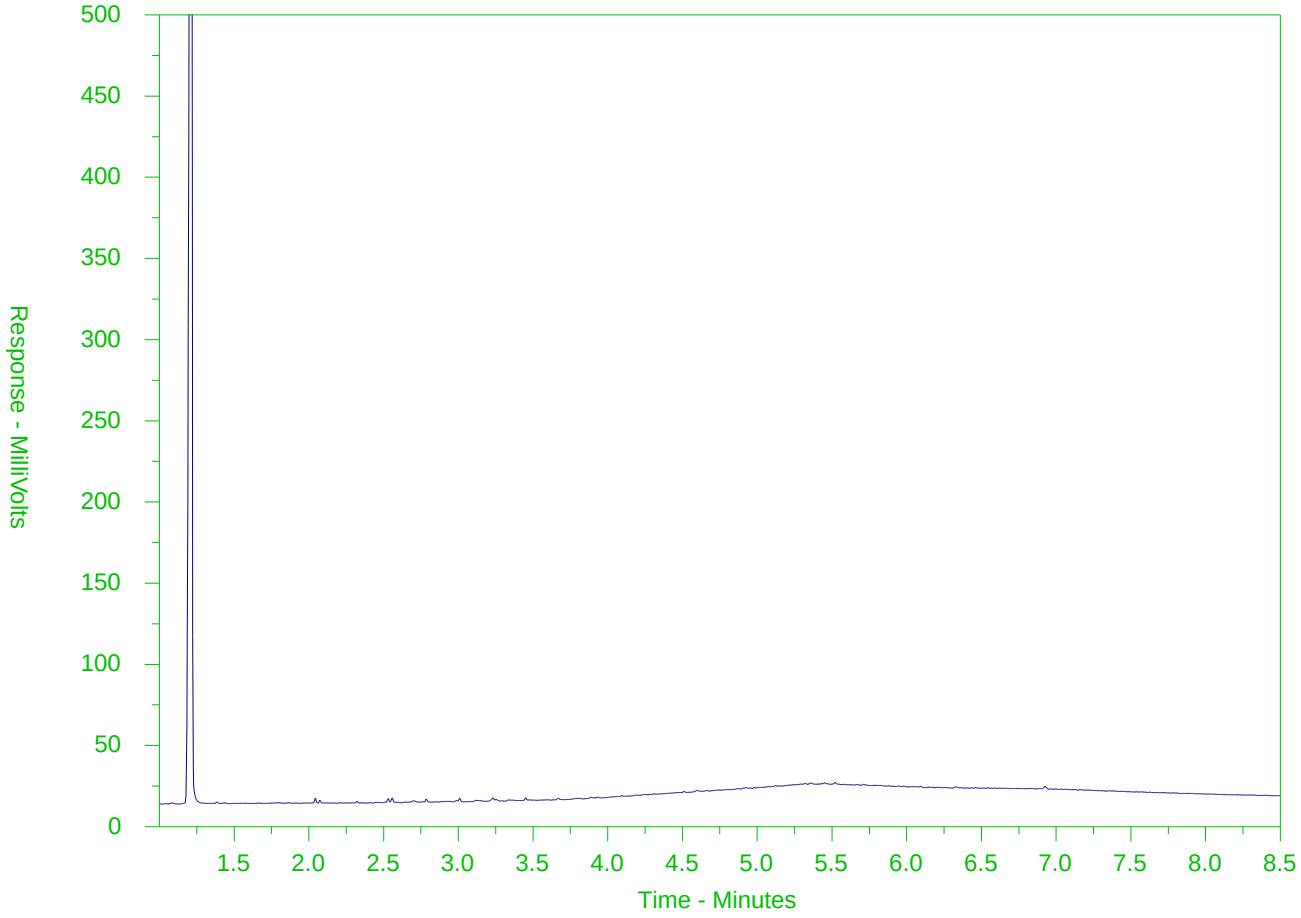
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

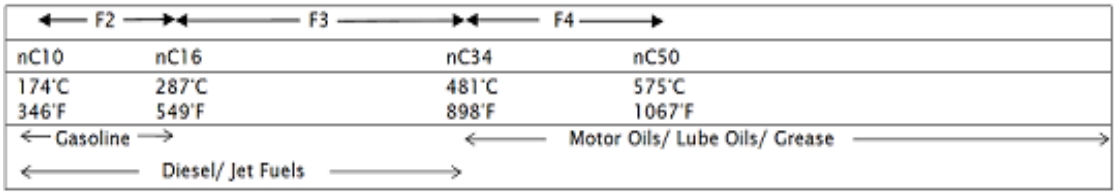
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2637442-6
Client Sample ID: EX19-21-27





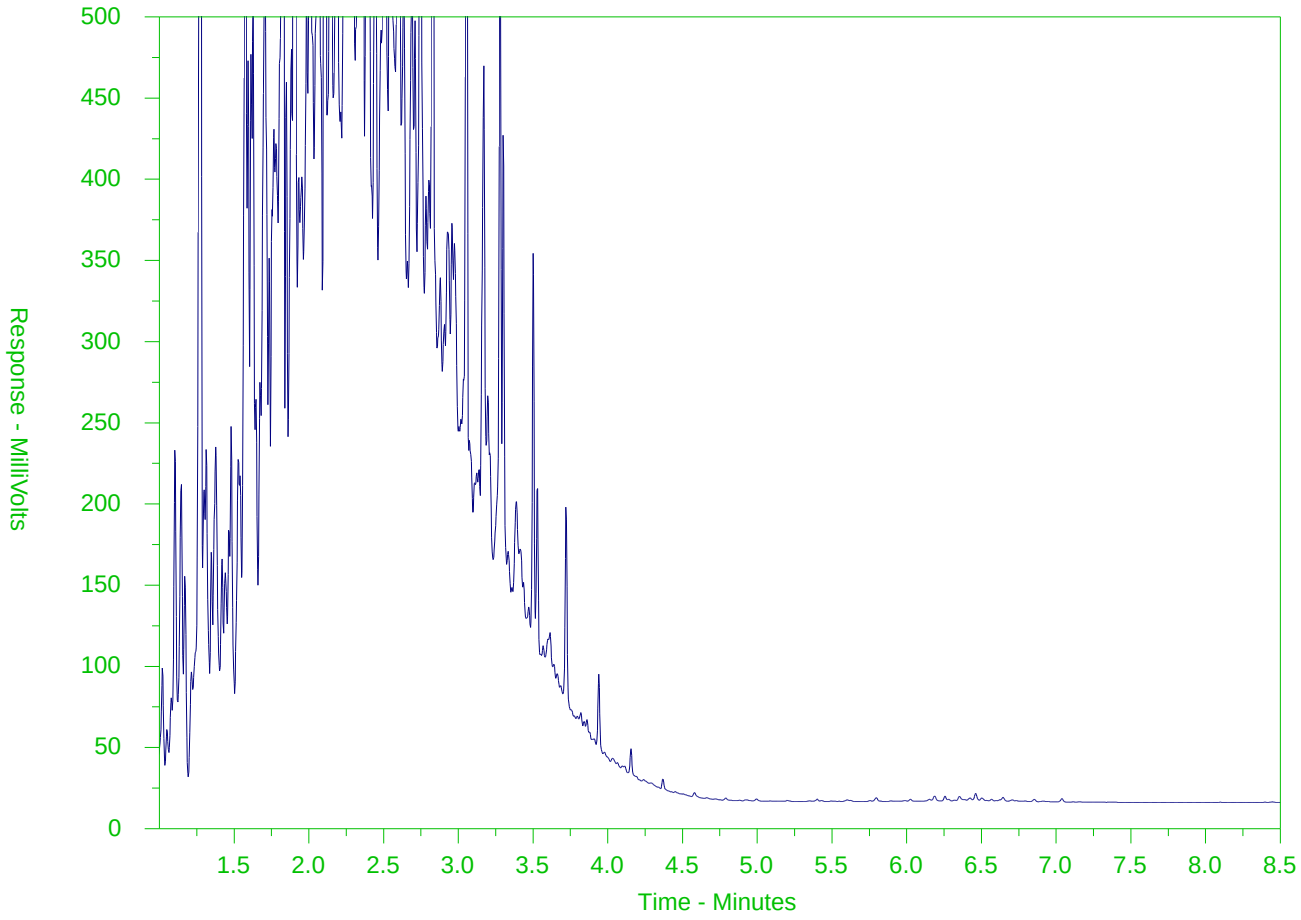
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

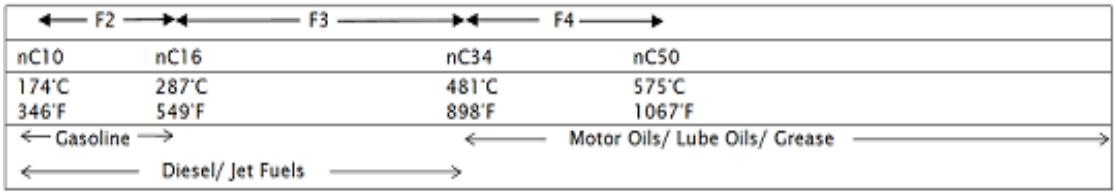
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2637442-7
Client Sample ID: EX19-21-30





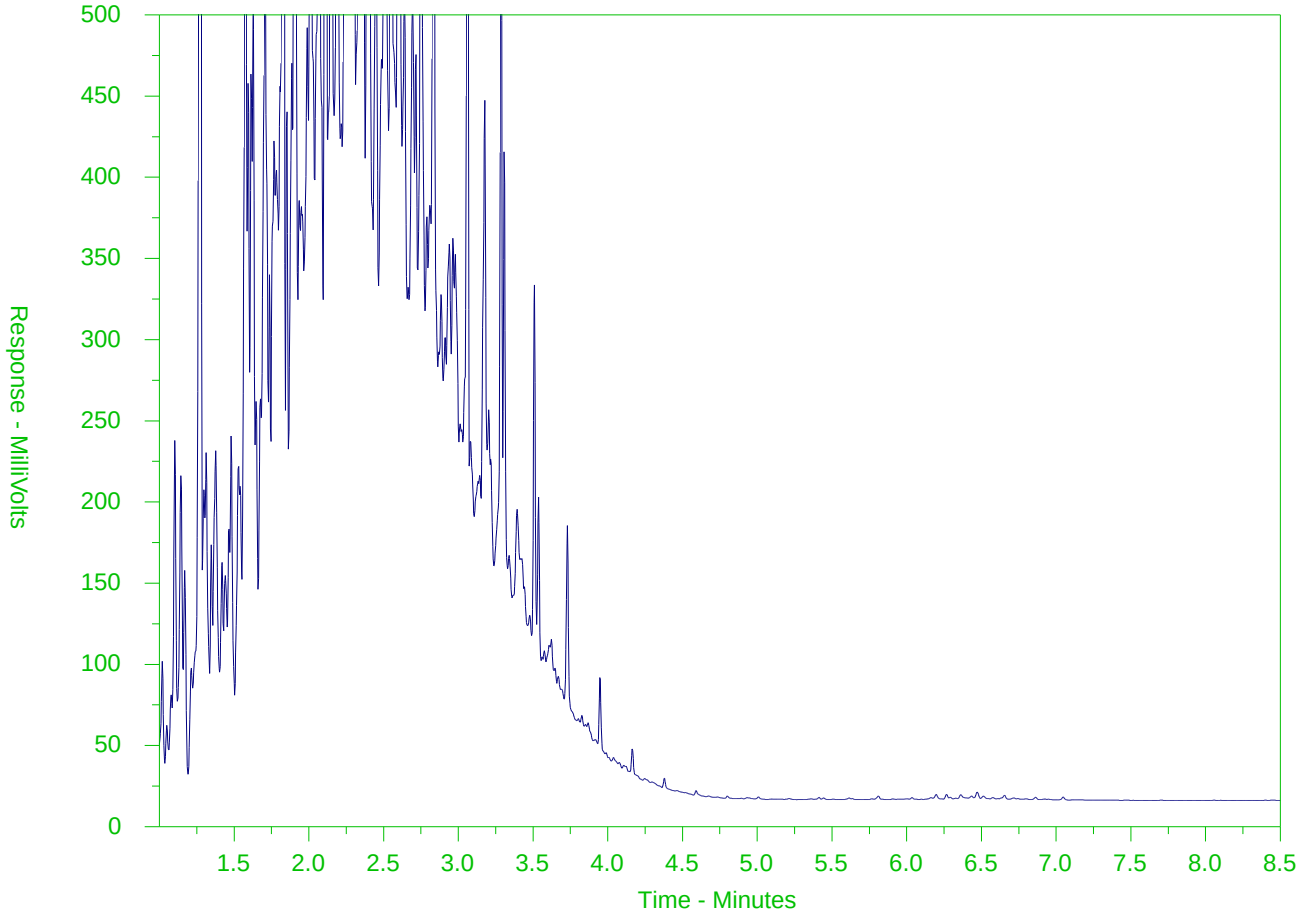
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

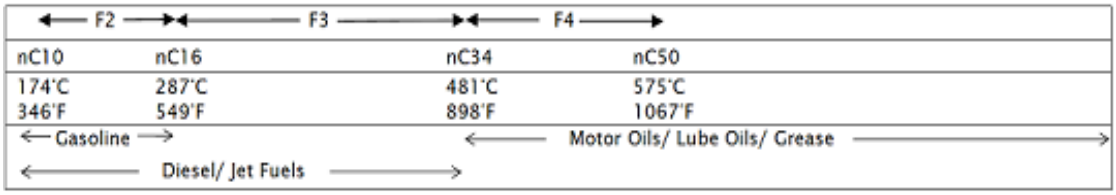
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2637442-8
Client Sample ID: EX19-21-30D





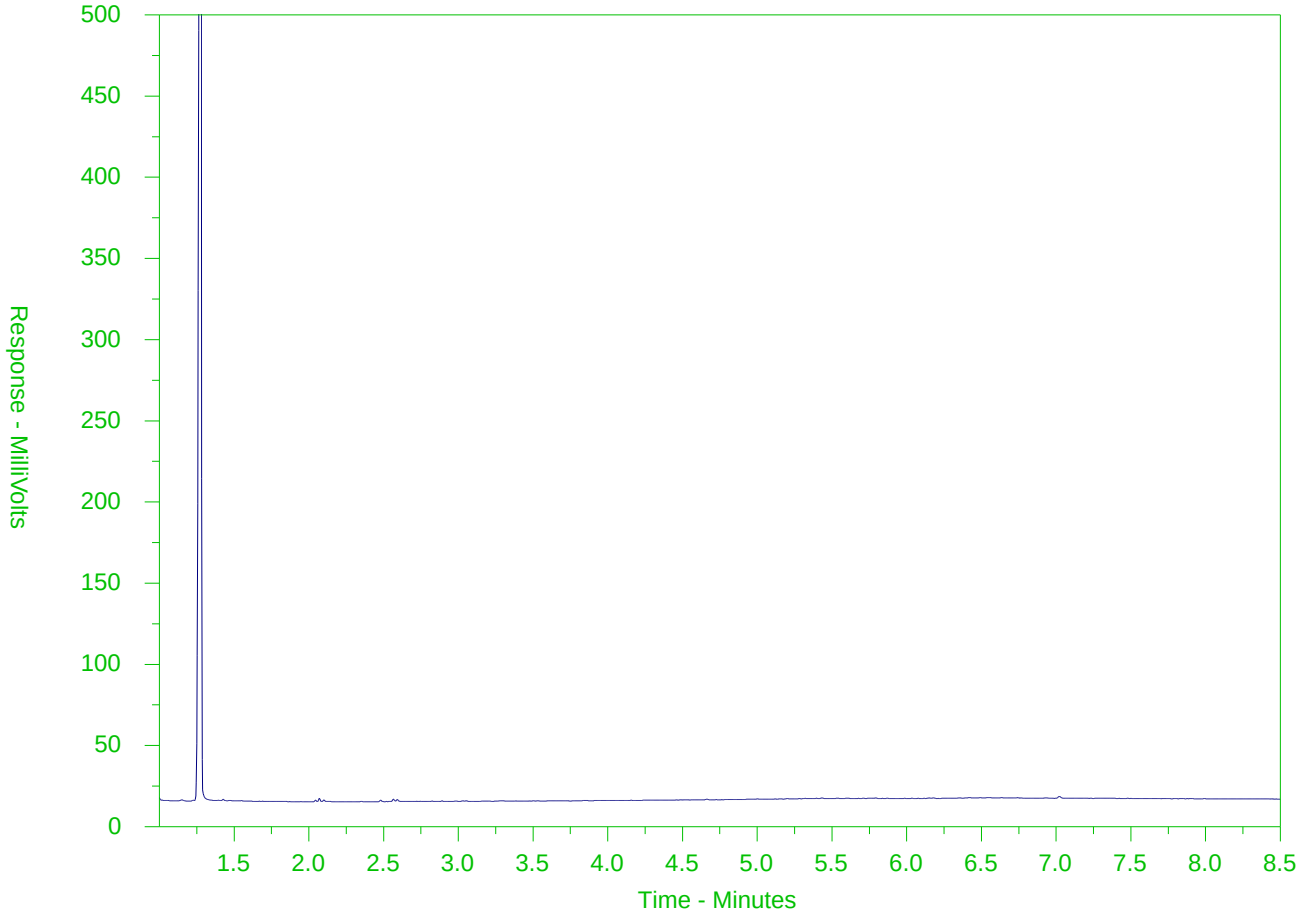
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

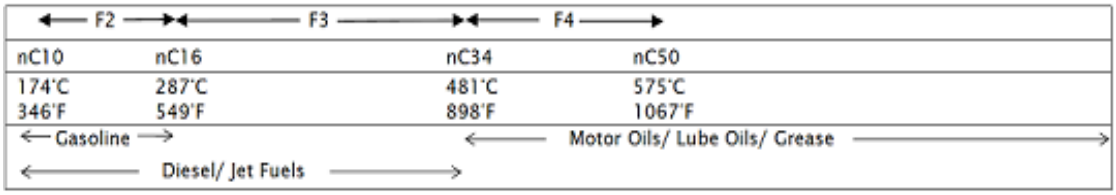
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2637442-9
Client Sample ID: EX19-21-31





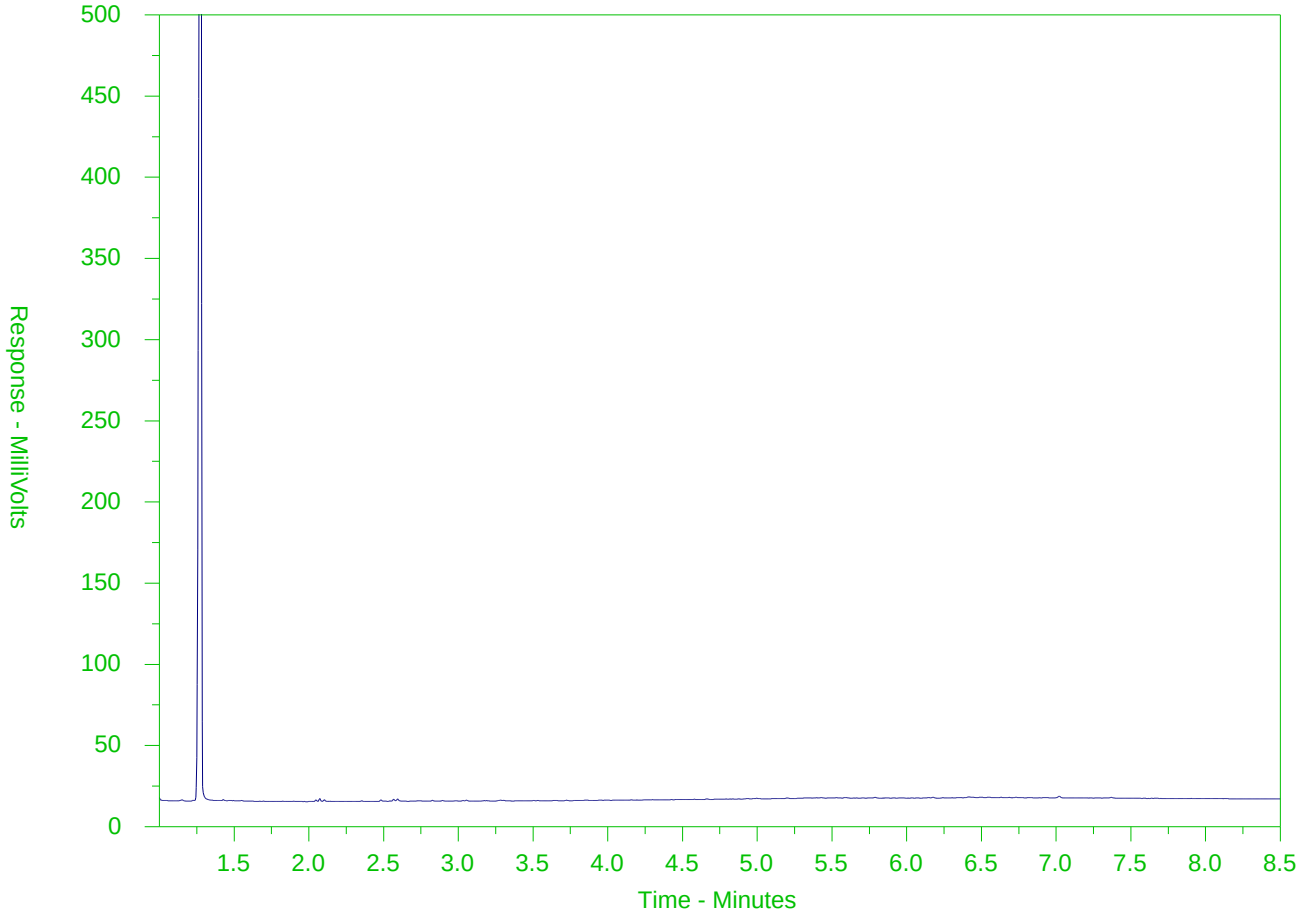
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

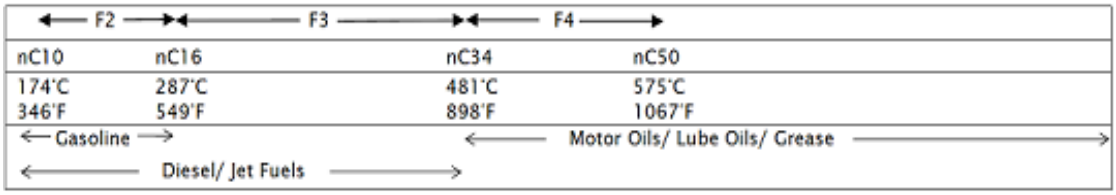
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Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2637442-10
Client Sample ID: EX19-21-32





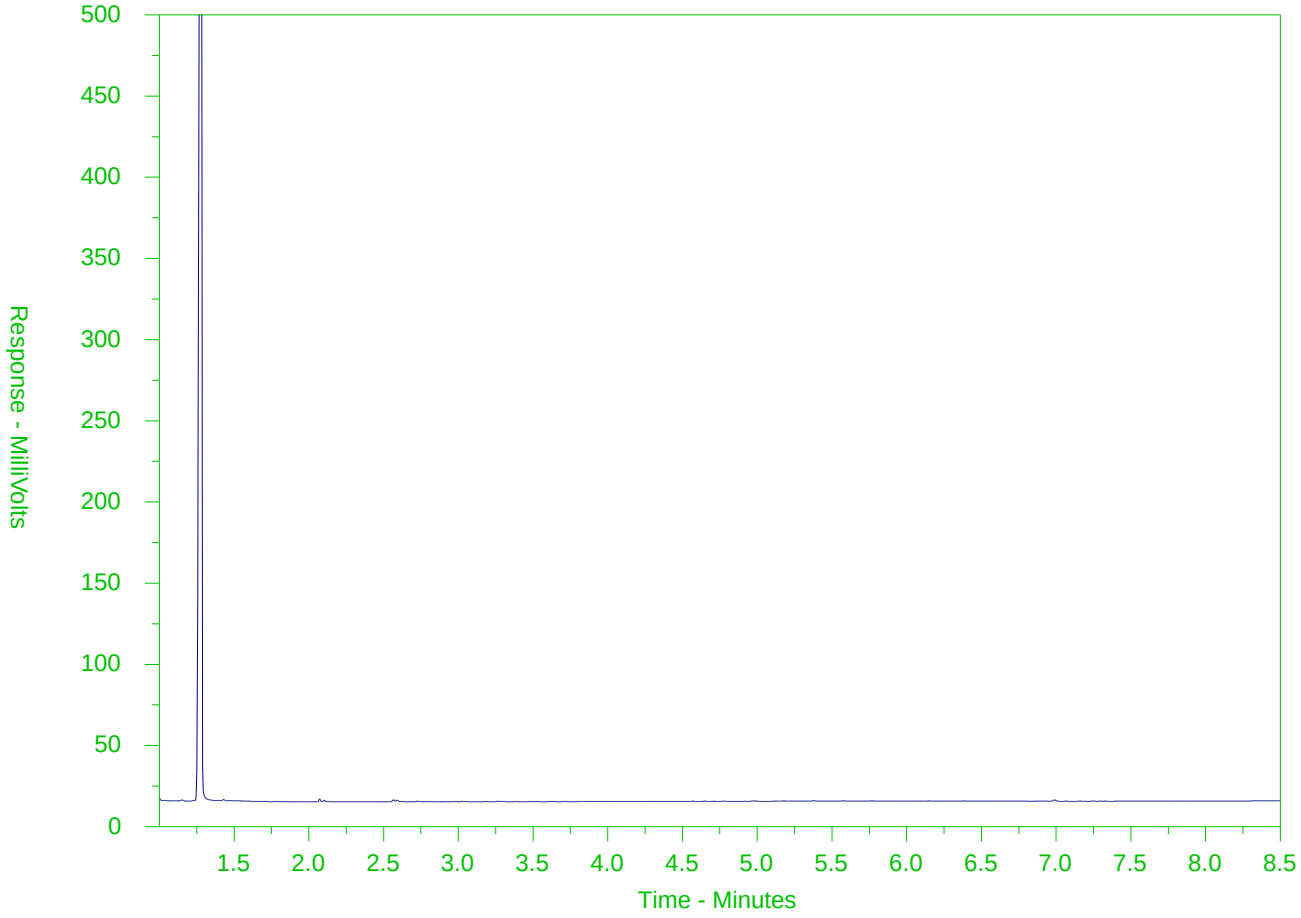
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

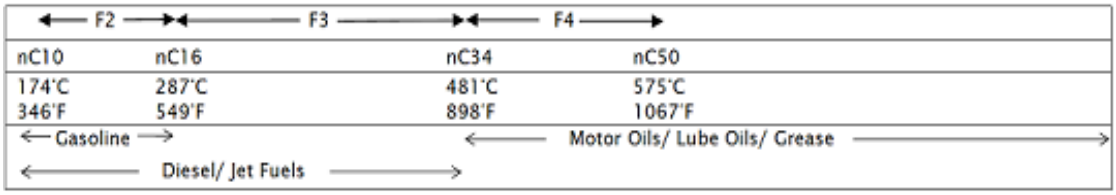
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2637442-11
Client Sample ID: EX21-21-126





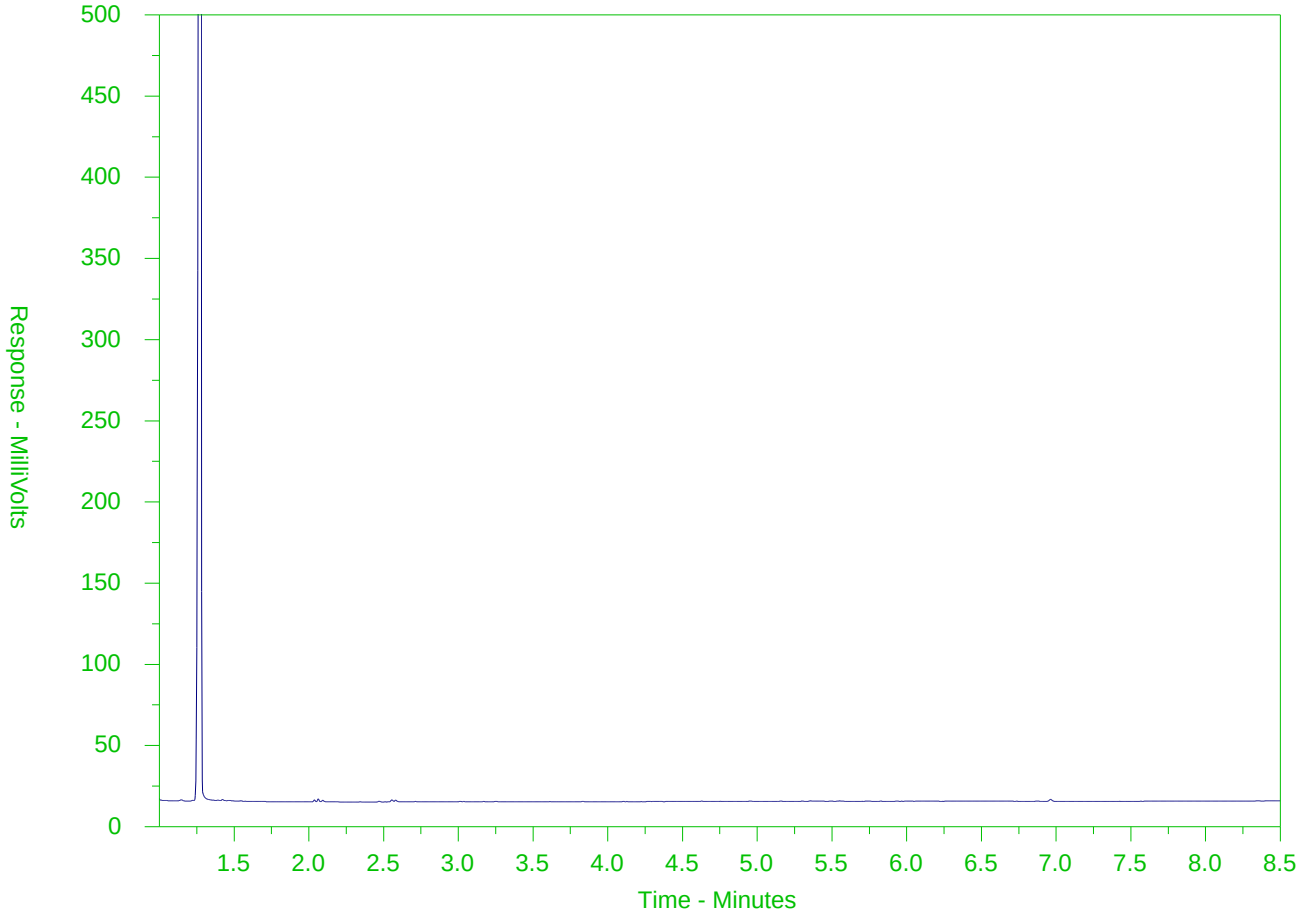
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

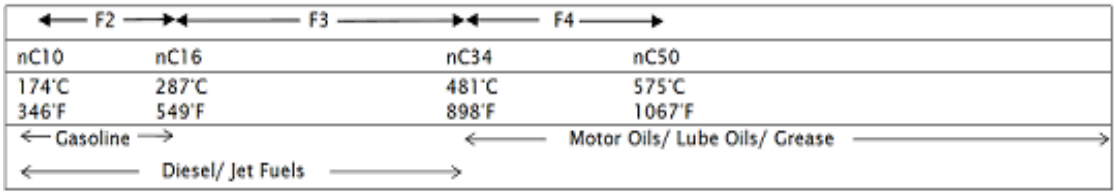
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2637442-12
Client Sample ID: EX21-21-127





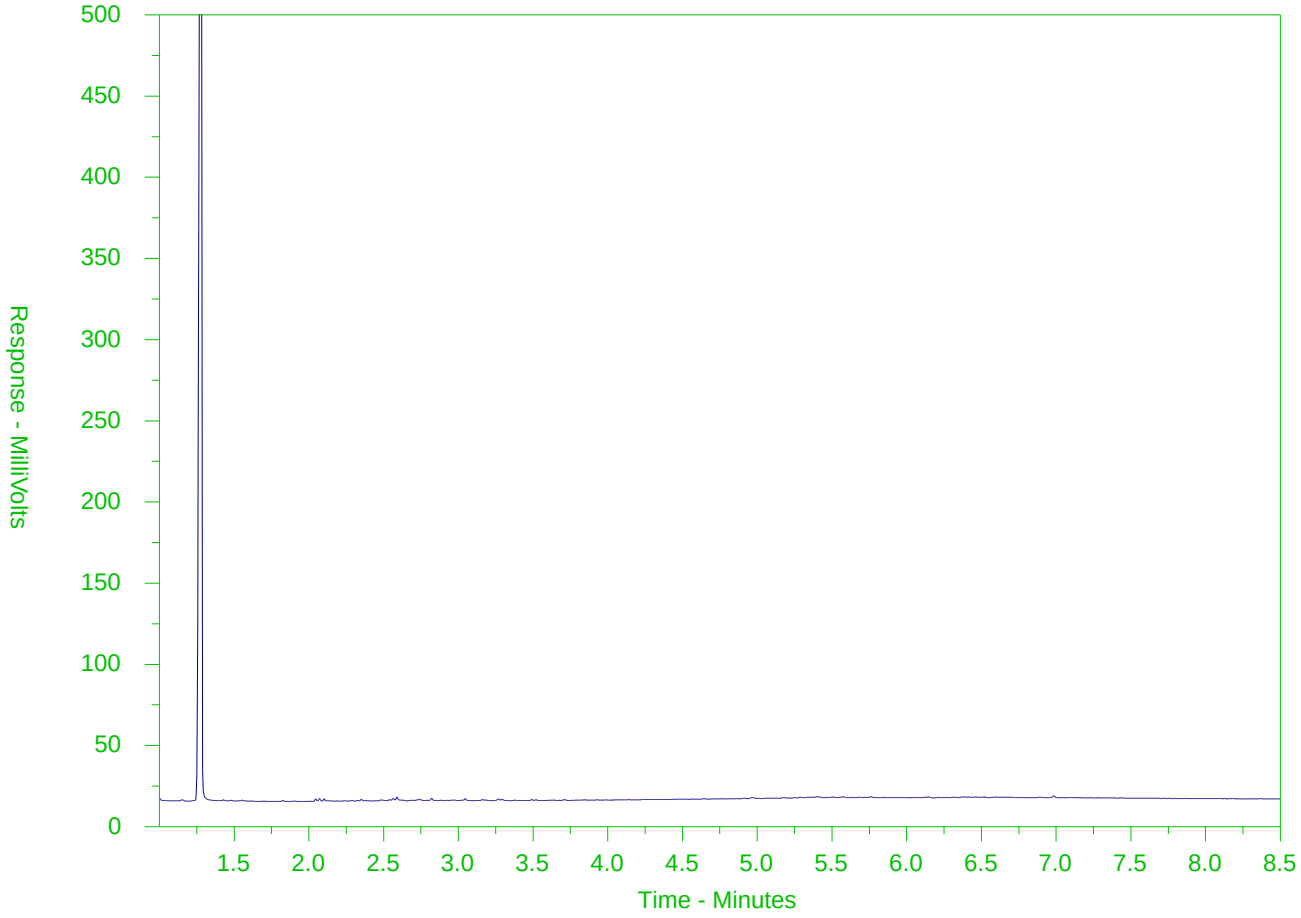
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

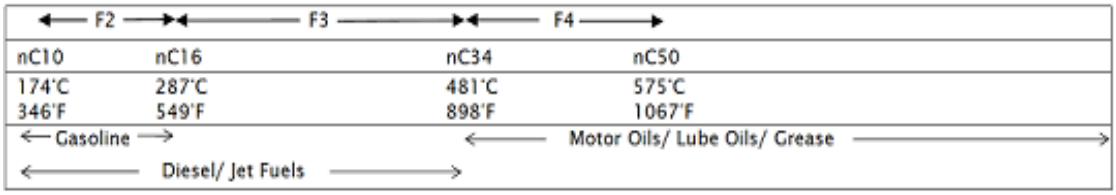
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2637442-13
Client Sample ID: EX21-21-128





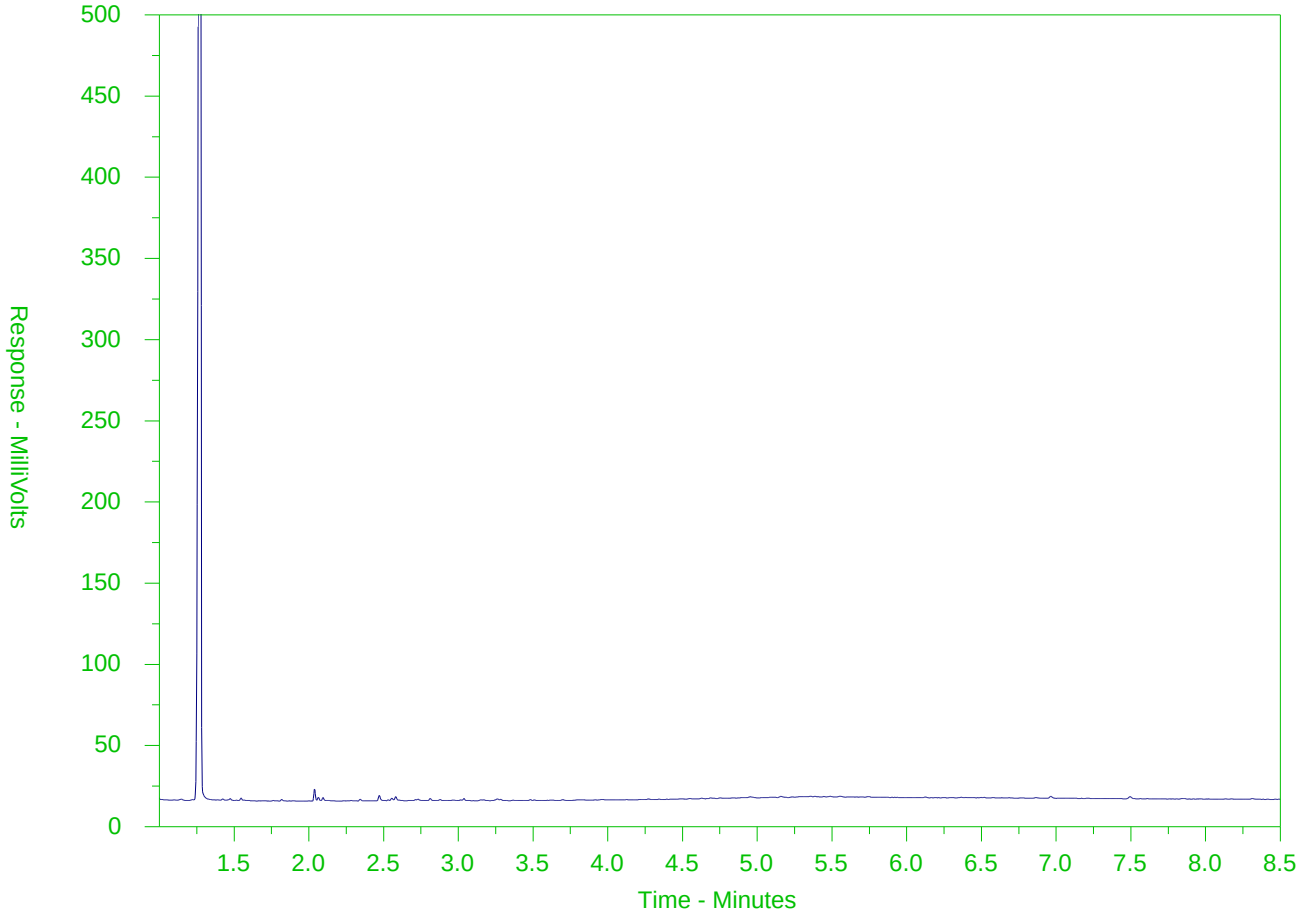
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

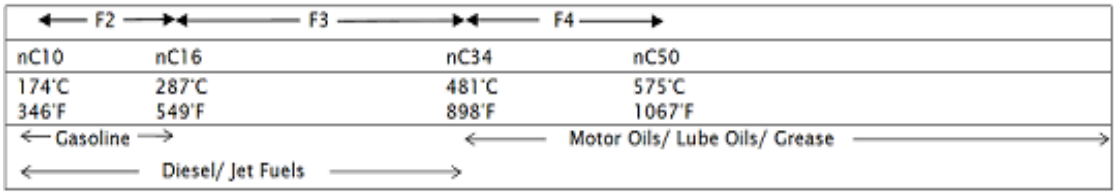
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2637442-14
Client Sample ID: EX21-21-129





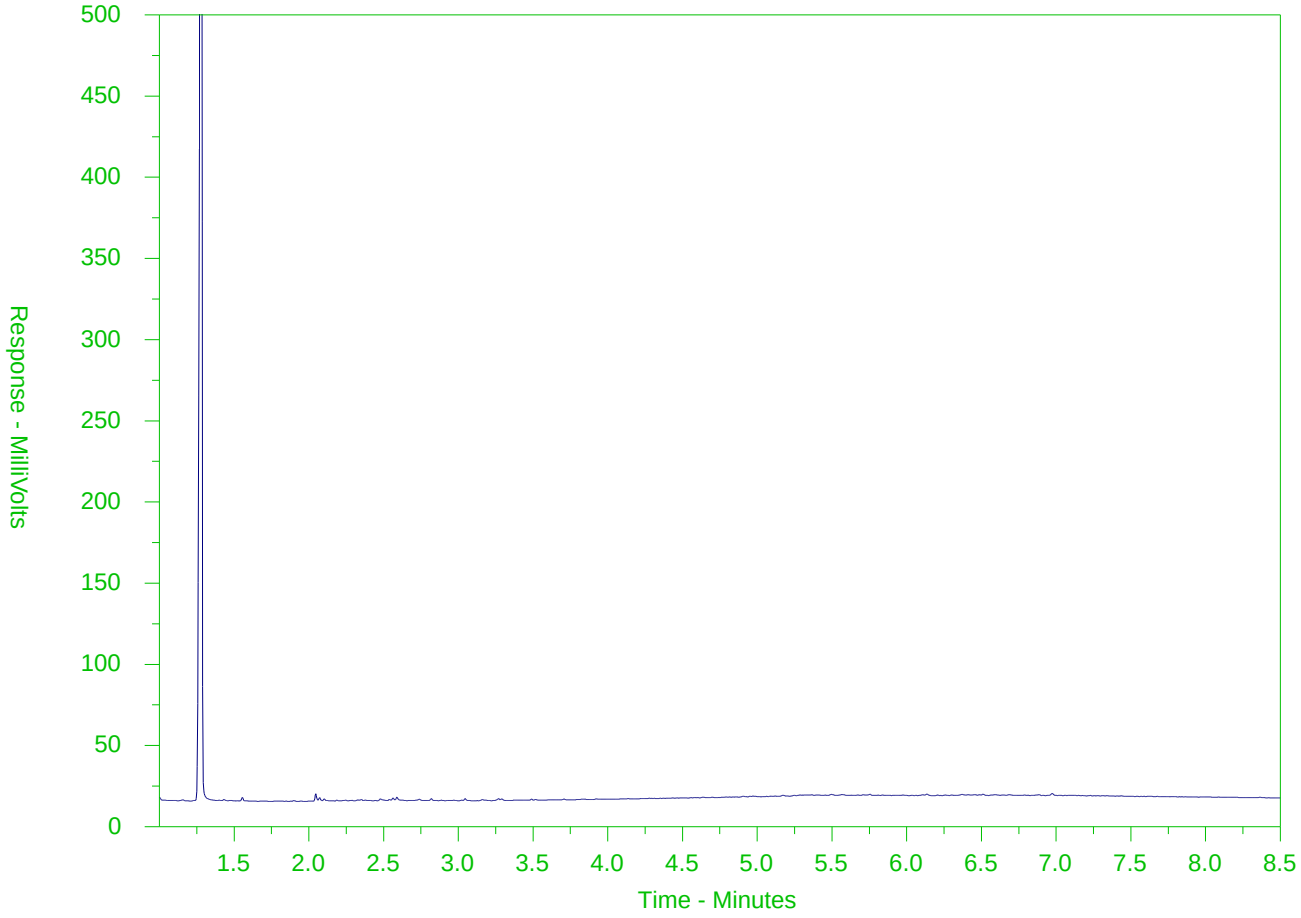
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

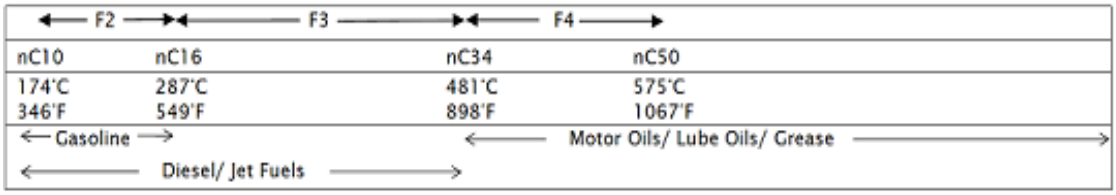
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Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2637442-15
Client Sample ID: EX21-21-130





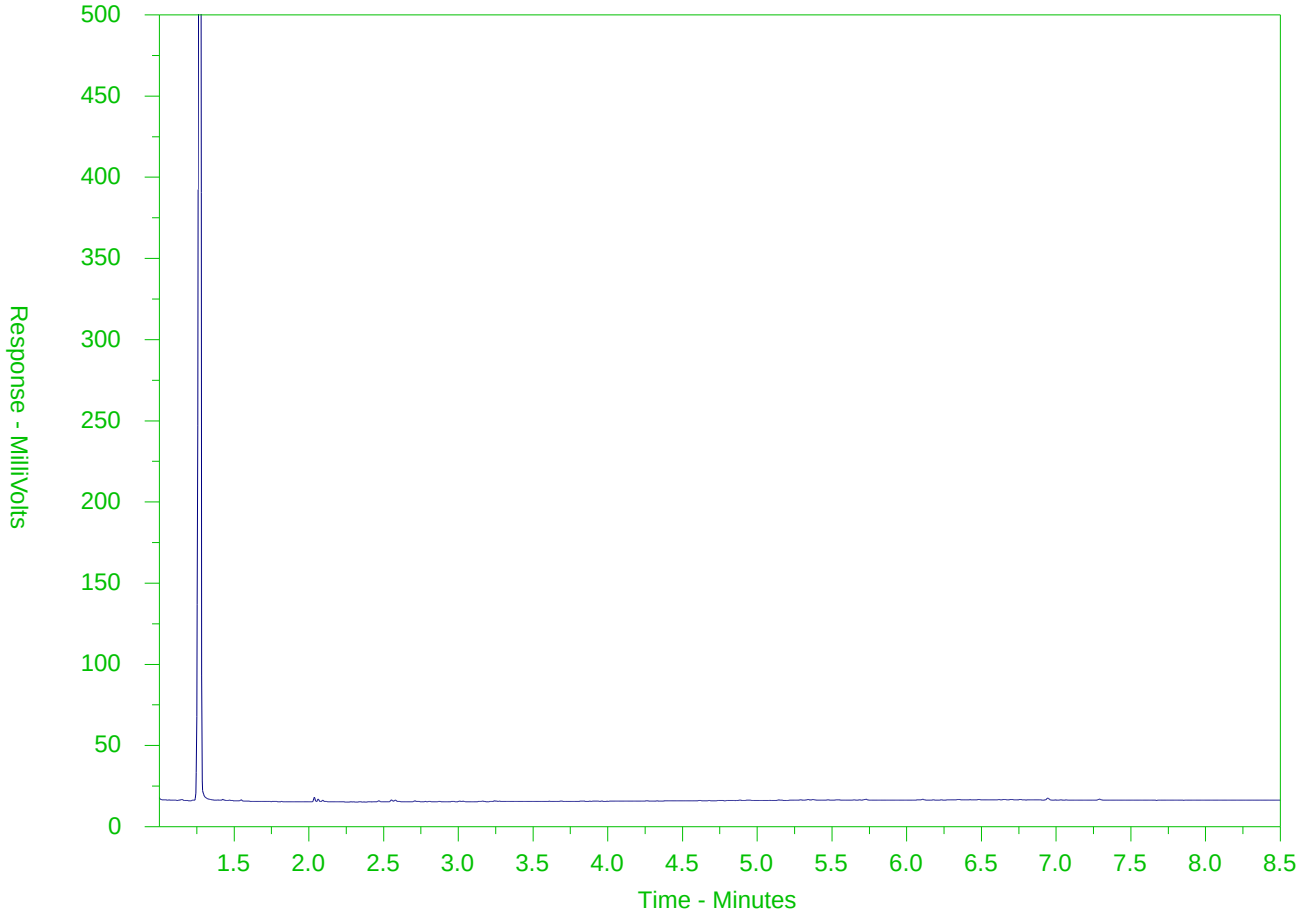
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

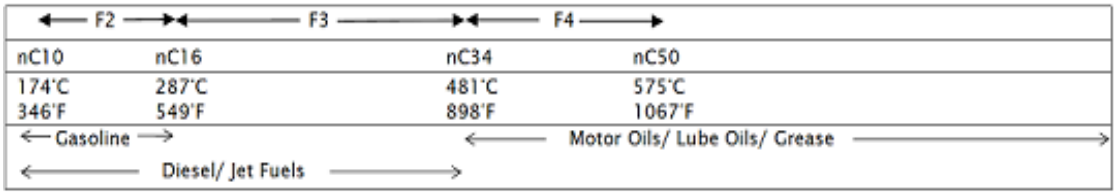
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2637442-16
Client Sample ID: EX21-21-131





The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number:

Page 1 of 1

Report To	Contact and company name below will appear on the final report	Report Format / Distribution	Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)
Company:	Lupin Mines Inc.	Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)	Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply
Contact:	Karyn Lewis	Quality Control (QC) Report with Report ☑ YES ☐ NO	PRIORITY (Business Days): 4 day [P4-20%] ☐; 3 day [P3-25%] ☐; 2 day [P2-50%] ☐ — EMERGENCY: 1 Business day [E - 100%] ☐; Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐
Phone:		☐ Compare Results to Criteria on Report - provide details below if box checked	
	Company address below will appear on the final report	Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	
Street:	76 Richmond Street, Suite 330	Email 1 or Fax: k.lewis@mandalayresources.com	Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm
City/Province:	Toronto ON	Email 2: sfiddler@golder.com	For tests that can not be performed according to the service level selected, you will be contacted.
Postal Code:	M5C 1P1	Email 3: jmusijowski@golder.com	
Invoice To	Same as Report To ☑ YES ☐ NO	**Invoice Distribution**	**Analysis Request**
	Copy of Invoice with Report ☑ YES ☐ NO	Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	
Company:		Email 1 or Fax	
Contact:	k.lewis@mandalayresources.com	Email 2	

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:	Q80711	AFE/Cost Center:	PO#
Job #:	20446521	Major/Minor Code:	Routing Code:
PO / AFE:		Requisitioner:	
LSD:	Lupin Mine	Location:	
ALS Lab Work Order # (lab use only):		ALS Contact: Oliver Gregg	Sampler:

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	Lead	Arsenic	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	EX19-21-13	07-Sep-21		Soil	3	X				
	EX19-21-14					X				
	EX19-21-20					X				
	EX19-21-22					X				
	EX19-21-26					X				
	EX19-21-27					X				
	EX19-21-30					X				
	EX19-21-30D					X				
	EX19-21-31					X				
	EX19-21-32					X				

L2637442-COFC

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Are samples taken from a Regulated DW System? ☐ YES ☐ NO	Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427
Are samples for human consumption/ use? ☐ YES ☐ NO	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Rebecca Boyce	Date: Sept 8/21	Time: 8:00	Received by:	Date:	Time:	Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

OCT 2018 FRONT

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number:

Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution	
Select Report Format:	☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report	☑ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	k.lewis@mandalayresources.com
Email 2	sfiddler@golder.com
Email 3	jmusijowski@golder.com

Invoice Distribution	
Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	
Email 2	

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☑ | Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information	
ALS Account # / Quote #:	Q80711
Job #:	20446521
PO / AFE:	
LSD:	Lupin Mine

Oil and Gas Required Fields (client use)	
AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (lab use only):

ALS Contact: Oliver Gregg **Sampler:**

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	EX21-21-126	05-Sep-21		Soil	3	X		
	EX21-21-127	05-Sep-21			3	X		
	EX21-21-128	07-Sep-21				X		
	EX21-21-129					X		
	EX21-21-130					X		
	EX21-21-131					X		

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Are samples taken from a Regulated DW System? ☐ YES ☐ NO	Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427
Are samples for human consumption/ use? ☐ YES ☐ NO	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			

SHIPMENT RELEASE (client use)		
Released by: Rebecca Boyce	Date: Sept 8/21	Time: 8:00

INITIAL SHIPMENT RECEPTION (lab use only)		
Received by:	Date:	Time:

FINAL SHIPMENT RECEPTION (lab use only)		
Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION WHITE - LABORATORY COPY YELLOW - CLIENT COPY

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1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.





GOLDER ASSOCIATES LTD
ATTN: Steven Fiddler
16820 107 Ave NW
Edmonton AB T5P 4C3

Date Received: 09-SEP-21
Report Date: 14-SEP-21 16:48 (MT)
Version: FINAL

Client Phone: 780-483-3499

Certificate of Analysis

Lab Work Order #: L2637973

Project P.O. #: NOT SUBMITTED
Job Reference: LUPIN 10402
C of C Numbers:
Legal Site Desc:

Harman Bhullar
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2637973-1 EX15-21-113							
Sampled By: CLIENT on 09-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	13-SEP-21	14-SEP-21	R5583703
Ethylbenzene	<0.015		0.015	mg/kg	13-SEP-21	14-SEP-21	R5583703
Toluene	<0.014		0.014	mg/kg	13-SEP-21	14-SEP-21	R5583703
o-Xylene	<0.050		0.050	mg/kg	13-SEP-21	14-SEP-21	R5583703
m+p-Xylene	<0.050		0.050	mg/kg	13-SEP-21	14-SEP-21	R5583703
Surrogate: 1,4-Difluorobenzene	86.0		70-130	%	13-SEP-21	14-SEP-21	R5583703
Surrogate: 4-Bromofluorobenzene	87.6		70-130	%	13-SEP-21	14-SEP-21	R5583703
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	13-SEP-21	14-SEP-21	R5583235
Prep/Analysis Dates					13-SEP-21	14-SEP-21	R5583235
Surrogate: 2-Bromobenzotrifluoride	85.5		70-130	%	13-SEP-21	14-SEP-21	R5583235
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		14-SEP-21	
F1-BTEX	<10		10	mg/kg		14-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		14-SEP-21	
F3 (C16-C34)	128		50	mg/kg		14-SEP-21	
F4 (C34-C50)	126		50	mg/kg		14-SEP-21	
Total Hydrocarbons (C6-C50)	254		50	mg/kg		14-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	72.4		70-130	%	13-SEP-21	14-SEP-21	R5583715
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		14-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	5.42		0.50	mg/kg	12-SEP-21	12-SEP-21	R5582899
Miscellaneous Parameters							
Moisture	3.58		0.25	%		14-SEP-21	R5583676
L2637973-2 EX15-21-114							
Sampled By: CLIENT on 09-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	13-SEP-21	14-SEP-21	R5583703
Ethylbenzene	<0.015		0.015	mg/kg	13-SEP-21	14-SEP-21	R5583703
Toluene	0.046		0.014	mg/kg	13-SEP-21	14-SEP-21	R5583703
o-Xylene	<0.050		0.050	mg/kg	13-SEP-21	14-SEP-21	R5583703
m+p-Xylene	<0.050		0.050	mg/kg	13-SEP-21	14-SEP-21	R5583703
Surrogate: 1,4-Difluorobenzene	98.5		70-130	%	13-SEP-21	14-SEP-21	R5583703
Surrogate: 4-Bromofluorobenzene	86.8		70-130	%	13-SEP-21	14-SEP-21	R5583703
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	13-SEP-21	14-SEP-21	R5583235
Prep/Analysis Dates					13-SEP-21	14-SEP-21	R5583235
Surrogate: 2-Bromobenzotrifluoride	77.7		70-130	%	13-SEP-21	14-SEP-21	R5583235
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		14-SEP-21	
F1-BTEX	<10		10	mg/kg		14-SEP-21	
F2 (C10-C16)	34		25	mg/kg		14-SEP-21	
F3 (C16-C34)	258		50	mg/kg		14-SEP-21	
F4 (C34-C50)	214		50	mg/kg		14-SEP-21	
Total Hydrocarbons (C6-C50)	506		50	mg/kg		14-SEP-21	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2637973-2 EX15-21-114							
Sampled By: CLIENT on 09-SEP-21							
Matrix: SOIL							
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	80.4		70-130	%	13-SEP-21	14-SEP-21	R5583715
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		14-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	7.13		0.50	mg/kg	12-SEP-21	12-SEP-21	R5582899
Miscellaneous Parameters							
Moisture	4.63		0.25	%		14-SEP-21	R5583676
L2637973-3 EX15-21-115							
Sampled By: CLIENT on 09-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	13-SEP-21	14-SEP-21	R5583703
Ethylbenzene	<0.015		0.015	mg/kg	13-SEP-21	14-SEP-21	R5583703
Toluene	0.247		0.014	mg/kg	13-SEP-21	14-SEP-21	R5583703
o-Xylene	<0.050		0.050	mg/kg	13-SEP-21	14-SEP-21	R5583703
m+p-Xylene	<0.050		0.050	mg/kg	13-SEP-21	14-SEP-21	R5583703
Surrogate: 1,4-Difluorobenzene	102.2		70-130	%	13-SEP-21	14-SEP-21	R5583703
Surrogate: 4-Bromofluorobenzene	93.7		70-130	%	13-SEP-21	14-SEP-21	R5583703
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	13-SEP-21	14-SEP-21	R5583235
Prep/Analysis Dates					13-SEP-21	14-SEP-21	R5583235
Surrogate: 2-Bromobenzotrifluoride	74.8		70-130	%	13-SEP-21	14-SEP-21	R5583235
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		14-SEP-21	
F1-BTEX	<10		10	mg/kg		14-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		14-SEP-21	
F3 (C16-C34)	100		50	mg/kg		14-SEP-21	
F4 (C34-C50)	83		50	mg/kg		14-SEP-21	
Total Hydrocarbons (C6-C50)	183		50	mg/kg		14-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	83.9		70-130	%	13-SEP-21	14-SEP-21	R5583715
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		14-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	2.47		0.50	mg/kg	12-SEP-21	12-SEP-21	R5582899
Miscellaneous Parameters							
Moisture	4.18		0.25	%		14-SEP-21	R5583676
L2637973-4 EX15-21-116							
Sampled By: CLIENT on 09-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	0.0155		0.0050	mg/kg	13-SEP-21	14-SEP-21	R5583703
Ethylbenzene	0.030		0.015	mg/kg	13-SEP-21	14-SEP-21	R5583703
Toluene	0.116		0.014	mg/kg	13-SEP-21	14-SEP-21	R5583703
o-Xylene	0.056		0.050	mg/kg	13-SEP-21	14-SEP-21	R5583703
m+p-Xylene	0.137		0.050	mg/kg	13-SEP-21	14-SEP-21	R5583703
Surrogate: 1,4-Difluorobenzene	92.8		70-130	%	13-SEP-21	14-SEP-21	R5583703

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2637973-4 EX15-21-116							
Sampled By: CLIENT on 09-SEP-21							
Matrix: SOIL							
BTEX and Styrene							
Surrogate: 4-Bromofluorobenzene	85.6		70-130	%	13-SEP-21	14-SEP-21	R5583703
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	13-SEP-21	14-SEP-21	R5583235
Prep/Analysis Dates					13-SEP-21	14-SEP-21	R5583235
Surrogate: 2-Bromobenzotrifluoride	74.7		70-130	%	13-SEP-21	14-SEP-21	R5583235
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		14-SEP-21	
F1-BTEX	<10		10	mg/kg		14-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		14-SEP-21	
F3 (C16-C34)	229		50	mg/kg		14-SEP-21	
F4 (C34-C50)	208		50	mg/kg		14-SEP-21	
Total Hydrocarbons (C6-C50)	437		50	mg/kg		14-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	83.6		70-130	%	13-SEP-21	14-SEP-21	R5583715
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	0.193		0.071	mg/kg		14-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	9.72		0.50	mg/kg	12-SEP-21	12-SEP-21	R5582899
Miscellaneous Parameters							
Moisture	2.99		0.25	%		14-SEP-21	R5583676

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BTXS-MEOH-HS-MS-CL	Soil	BTEX and Styrene	EPA 8260C/5021A

The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. Target compound concentrations are measured using mass spectrometry detection.

F1-4-CALC-CL	Soil	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-MEOH-HS-FID-CL	Soil	F1(C6-C10)	CWS PHC Tier 1

The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. The F1 fraction concentration is measured using flame ionization detection.

F2-4-TMB-H/A-FID-CL	Soil	CCME F2-4 Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

This analysis is carried out in accordance with the "Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method, Canadian Council of Ministers of the Environment, December 2001." For C10 to C50 hydrocarbons (F2, F3, F4) and gravimetric heavy hydrocarbons (F4G-sg), a subsample of the sediment/soil is extracted with 1:1 hexane:acetone using a rotary extractor. The extract undergoes a silica-gel clean-up to remove polar compounds. F2, F3 & F4 are analyzed by on-column GC/FID, and F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where F4 (C34-C50) and F4G-sg results are reported for a sample, the larger of the reported values is used for comparison against the relevant CCME standard for F4.
7. The gravimetric heavy hydrocarbon results (F4G-sg), cannot be added to the C6 to C50 hydrocarbon results.
8. This method is validated for use.
9. Data from analysis of quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram.

MET-200.2-CCMS-ED	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020A (mod)

Soil/sediment is dried, disaggregated, and sieved (2 mm). Strong Acid Leachable Metals in the <2mm fraction are solubilized by heated digestion with nitric and hydrochloric acids. Instrumental analysis is by Collision / Reaction Cell ICPMS.

Limitations: This method is intended to liberate environmentally available metals. Silicate minerals are not solubilized. Some metals may be only partially recovered (matrix dependent), including Al, Ba, Be, Cr, S, Sr, Ti, Tl, V, W, and Zr. Elemental Sulfur may be poorly recovered by this method. Volatile forms of sulfur (e.g. sulfide, H2S) may be excluded if lost during sampling, storage, or digestion.

MOISTURE-CL	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)

This analysis is carried out gravimetrically by drying the sample at 105 C

XYLENES-SUM-CALC-CL	Soil	Sum of Xylene Isomer Concentrations	CALCULATED RESULT

Total xylenes represents the sum of o-xylene and m&p-xylene.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
ED	ALS ENVIRONMENTAL - EDMONTON, ALBERTA, CANADA
CL	ALS ENVIRONMENTAL - CALGARY, ALBERTA, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Client: GOLDER ASSOCIATES LTD
16820 107 Ave NW
Edmonton AB T5P 4C3
Contact: Steven Fiddler

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTXS-MEOH-HS-MS-CL	**Soil**							
Batch R5583703								
WG3616250-2 LCS								
Benzene			99.9		%		70-130	14-SEP-21
Ethylbenzene			105.5		%		70-130	14-SEP-21
Toluene			94.2		%		70-130	14-SEP-21
o-Xylene			97.4		%		70-130	14-SEP-21
m+p-Xylene			95.0		%		70-130	14-SEP-21
WG3616250-1 MB								
Benzene			<0.0050		mg/kg		0.005	14-SEP-21
Ethylbenzene			<0.015		mg/kg		0.015	14-SEP-21
Toluene			<0.014		mg/kg		0.014	14-SEP-21
o-Xylene			<0.050		mg/kg		0.05	14-SEP-21
m+p-Xylene			<0.050		mg/kg		0.05	14-SEP-21
Surrogate: 1,4-Difluorobenzene			105.2		%		70-130	14-SEP-21
Surrogate: 4-Bromofluorobenzene			97.3		%		70-130	14-SEP-21
F1-MEOH-HS-FID-CL	**Soil**							
Batch R5583715								
WG3616250-2 LCS								
F1(C6-C10)			112.7		%		70-130	14-SEP-21
WG3616250-1 MB								
F1(C6-C10)			<10		mg/kg		10	14-SEP-21
Surrogate: 3,4-Dichlorotoluene			87.8		%		70-130	14-SEP-21
F2-4-TMB-H/A-FID-CL	**Soil**							
Batch R5583235								
WG3616257-4 IRM		**ALS PHC3 RM**						
F2: (C10-C16)			81.1		%		70-130	14-SEP-21
F3: (C16-C34)			94.4		%		70-130	14-SEP-21
F4: (C34-C50)			102.5		%		70-130	14-SEP-21
WG3616257-2 LCS								
F2: (C10-C16)			110.3		%		70-130	14-SEP-21
F3: (C16-C34)			109.9		%		70-130	14-SEP-21
F4: (C34-C50)			121.9		%		70-130	14-SEP-21
WG3616257-1 MB								
F2: (C10-C16)			<25		mg/kg		25	14-SEP-21
F3: (C16-C34)			<50		mg/kg		50	14-SEP-21
F4: (C34-C50)			<50		mg/kg		50	14-SEP-21
Surrogate: 2-Bromobenzotrifluoride			82.9		%		70-130	14-SEP-21

Quality Control Report

Workorder: L2637973 Report Date: 14-SEP-21

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-ED	**Soil**							
Batch R5582899								
WG3615703-3 CRM		**SCP_SS-2_SOIL**						
Lead (Pb)			112.7		%		70-130	12-SEP-21
WG3615703-2 LCS								
Lead (Pb)			110.6		%		80-120	12-SEP-21
WG3615703-1 MB								
Lead (Pb)			<0.50		mg/kg		0.5	12-SEP-21
MOISTURE-CL	**Soil**							
Batch R5583676								
WG3616262-2 LCS								
Moisture			97.0		%		90-110	14-SEP-21
WG3616262-1 MB								
Moisture			<0.25		%		0.25	14-SEP-21

Quality Control Report

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

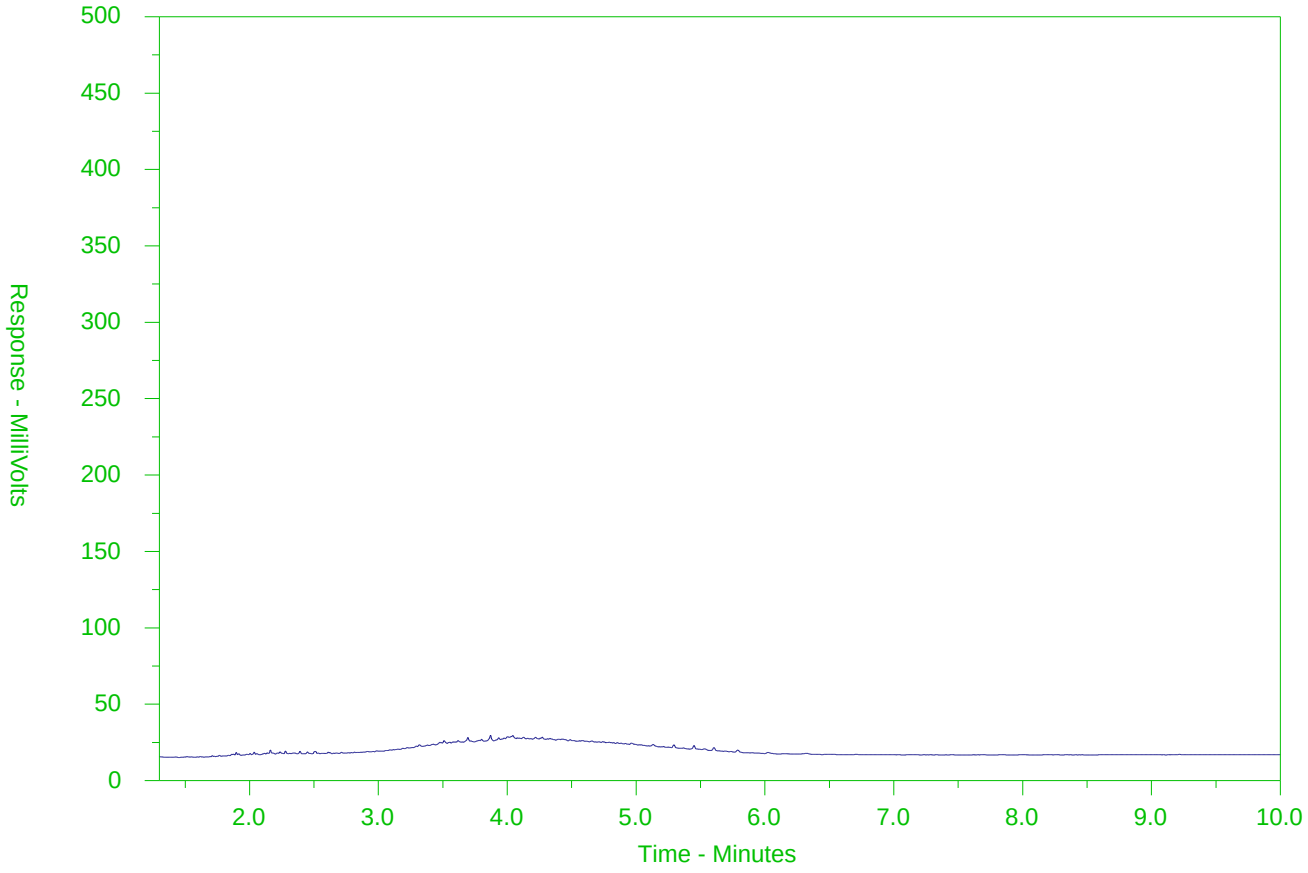
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2637973-1
Client Sample ID: EX15-21-113



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

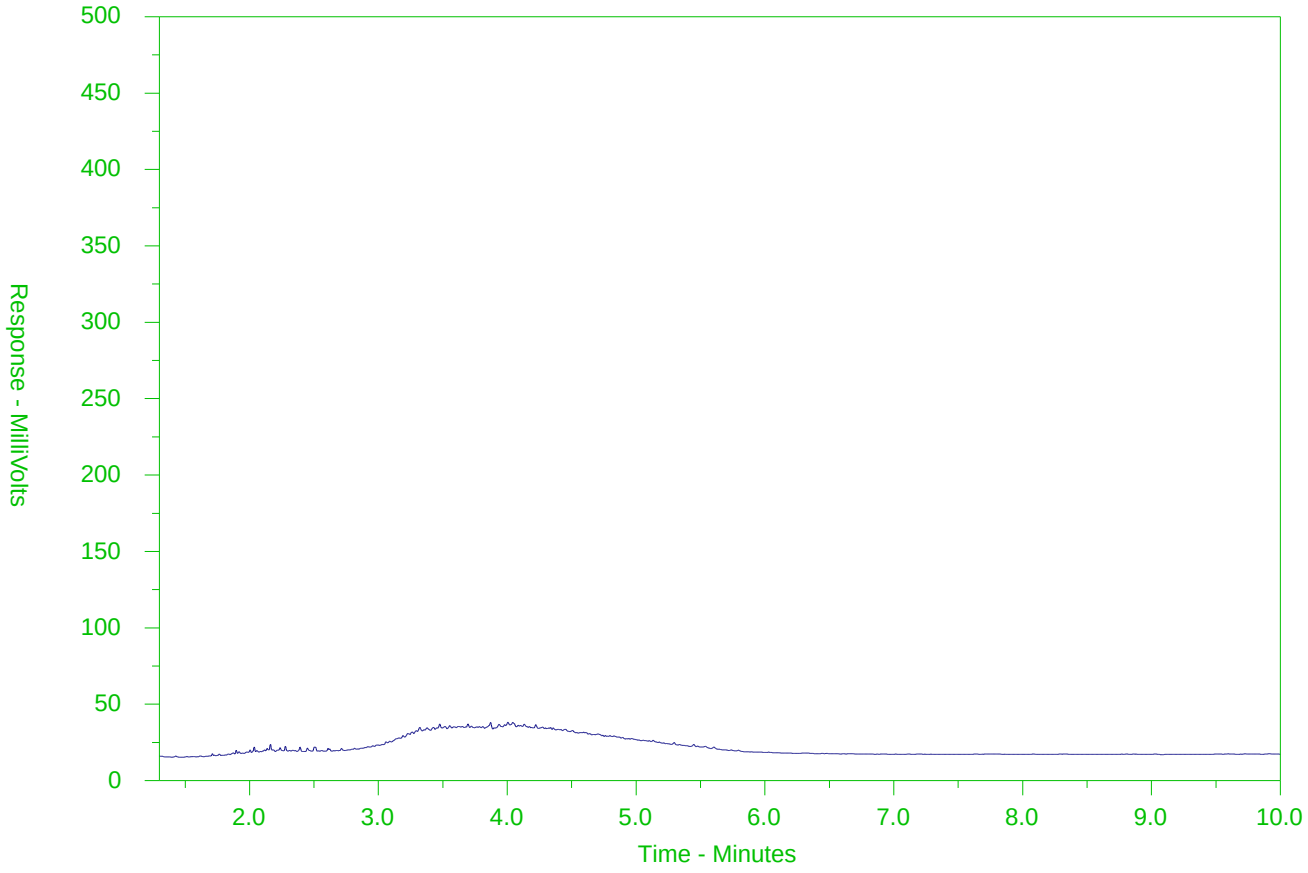
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2637973-2
Client Sample ID: EX15-21-114



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

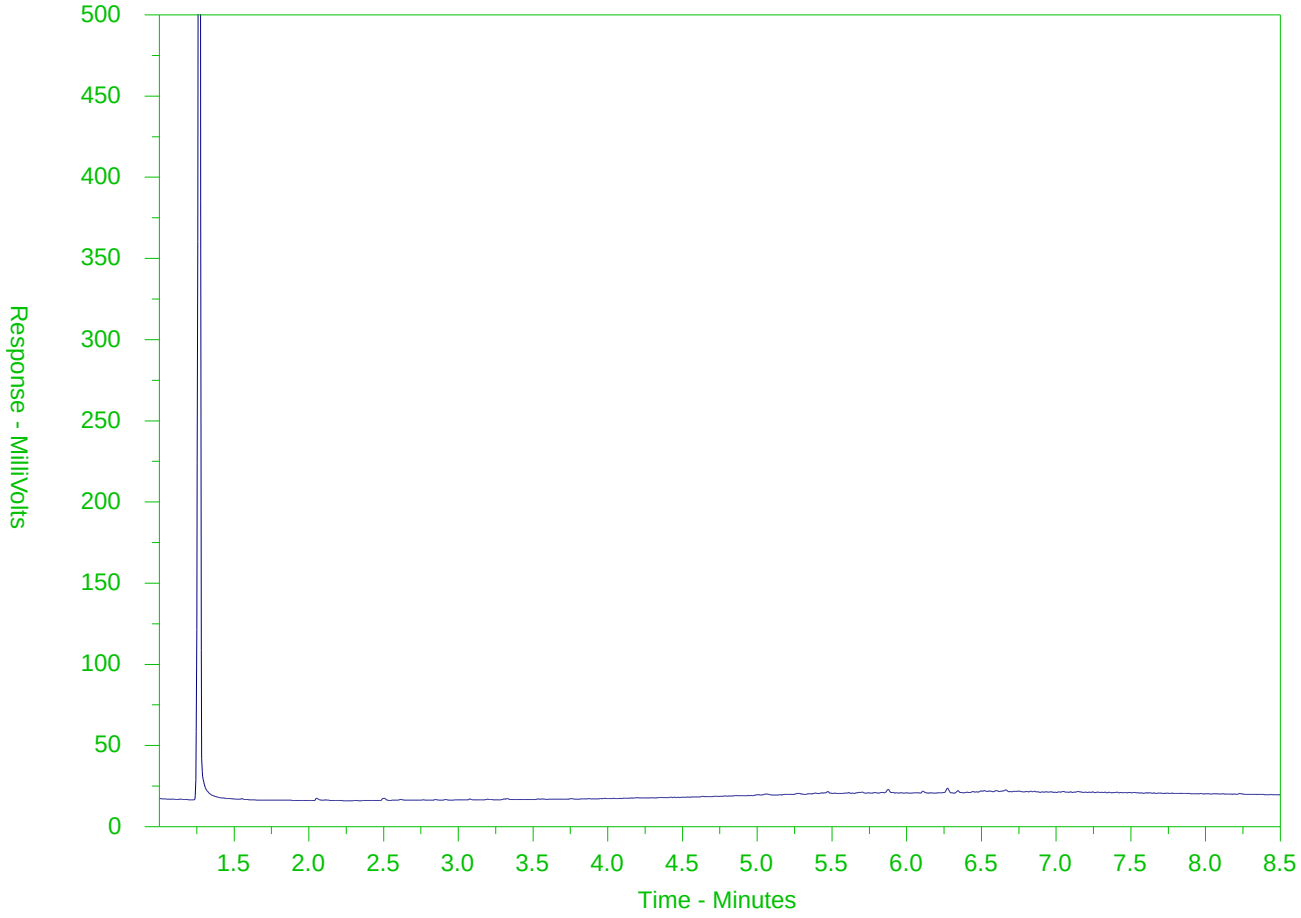
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

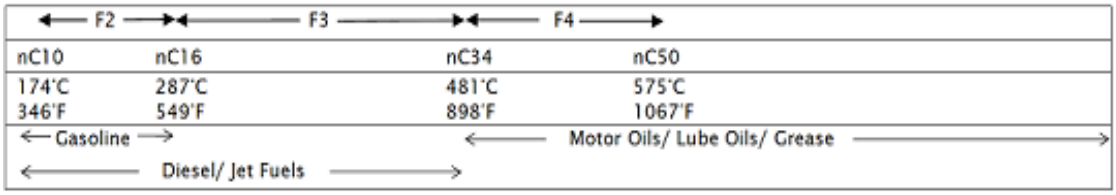
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2637973-3
Client Sample ID: EX15-21-115





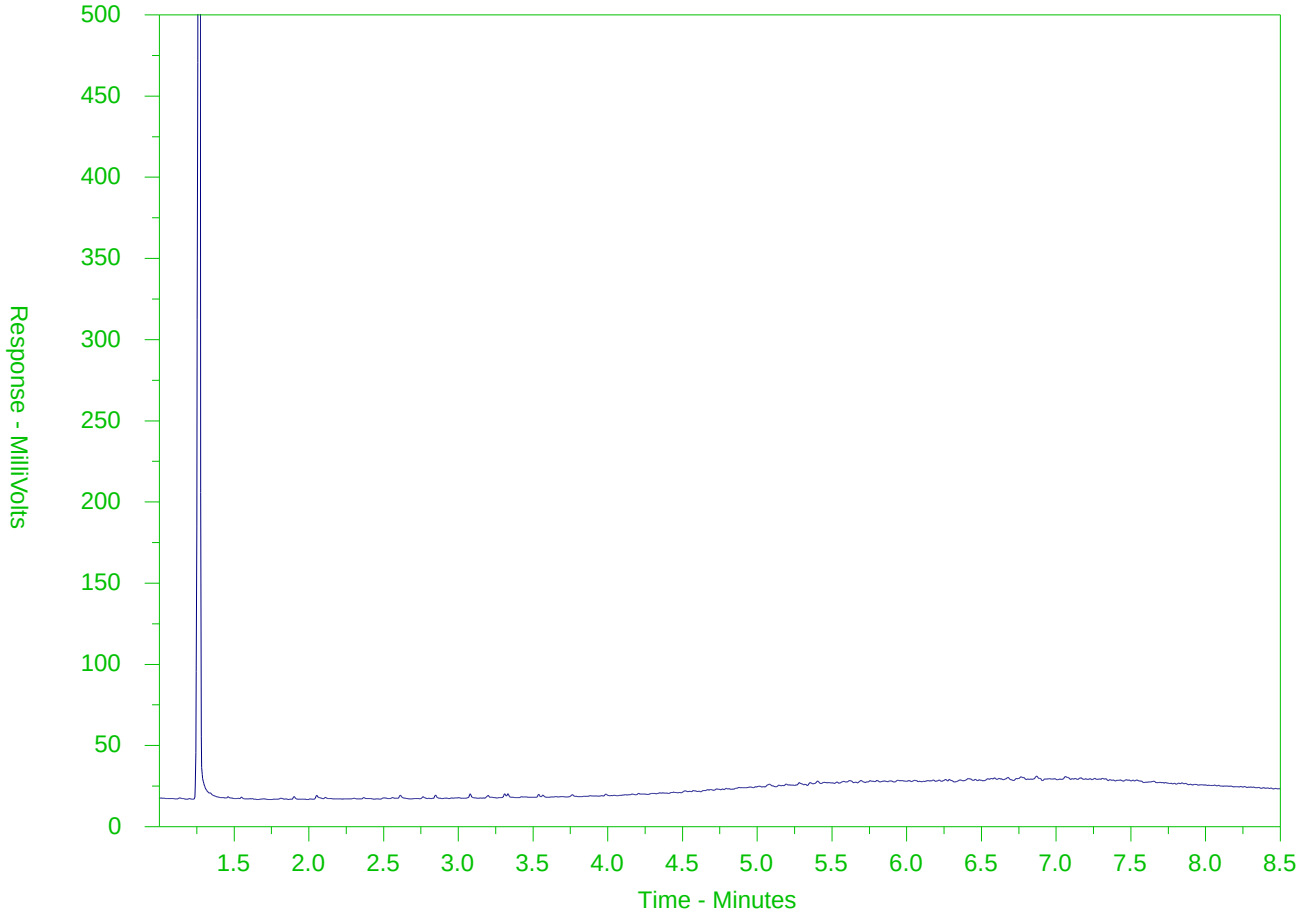
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

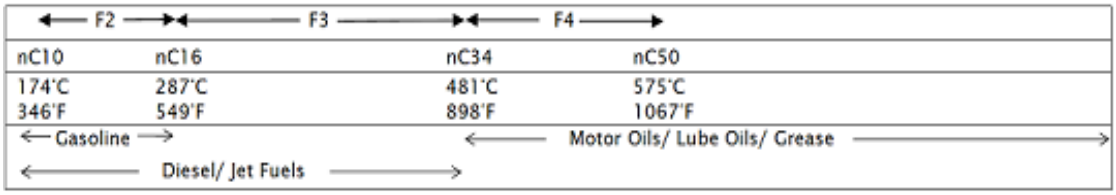
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2637973-4
Client Sample ID: EX15-21-116





The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number:

Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)

Quality Control (QC) Report with Report ☑ YES ☐ NO

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax	k.lewis@mandalayresources.com
Email 2	sfiddler@golder.com
Email 3	jmusijowski@golder.com

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax	
Email 2	

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☒ | Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #:	Q80711
Job #:	2044652 1
PO / AFE:	
LSD:	Lupin Mine
ALS Lab Work Order # (lab use only):	

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Contact: Oliver Gregg | Sampler:

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	Lead	Arsenic	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	EX15-21-113	09-Sept-21		Soil	4	X	X			
	EX15-21-114	"		"	4	X	X			
	EX15-21-115	"		"	4	X	X			
	EX15-21-116	"		"	4	X	X			

L2637973-COFC

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human consumption/ use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ | SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ | Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
12.1							

SHIPMENT RELEASE (client use)

Released by:	Date:	Time:
R. Boyce	Sept 9/21	14:00

INITIAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:
	Sep 9-21	1645

FINAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCT 2018 FR

GOLDER ASSOCIATES LTD
ATTN: Steven Fiddler
16820 107 Ave NW
Edmonton AB T5P 4C3

Date Received: 13-SEP-21
Report Date: 16-SEP-21 16:48 (MT)
Version: FINAL

Client Phone: 780-483-3499

Certificate of Analysis

Lab Work Order #: L2639005

Project P.O. #: NOT SUBMITTED
Job Reference: LUPIN 10402
C of C Numbers:
Legal Site Desc:

Harman Bhullar
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2639005-1 EX15-21-118							
Sampled By: CLIENT on 10-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	15-SEP-21	16-SEP-21	R5585228
Ethylbenzene	<0.015		0.015	mg/kg	15-SEP-21	16-SEP-21	R5585228
Toluene	0.045		0.014	mg/kg	15-SEP-21	16-SEP-21	R5585228
o-Xylene	<0.050		0.050	mg/kg	15-SEP-21	16-SEP-21	R5585228
m+p-Xylene	<0.050		0.050	mg/kg	15-SEP-21	16-SEP-21	R5585228
Surrogate: 1,4-Difluorobenzene	88.2		70-130	%	15-SEP-21	16-SEP-21	R5585228
Surrogate: 4-Bromofluorobenzene	82.1		70-130	%	15-SEP-21	16-SEP-21	R5585228
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	15-SEP-21	16-SEP-21	R5585399
Prep/Analysis Dates					15-SEP-21	16-SEP-21	R5585399
Surrogate: 2-Bromobenzotrifluoride	84.8		70-130	%	15-SEP-21	16-SEP-21	R5585399
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		16-SEP-21	
F1-BTEX	<10		10	mg/kg		16-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		16-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		16-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		16-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		16-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	82.3		70-130	%	15-SEP-21	16-SEP-21	R5585261
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		16-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	4.04		0.50	mg/kg	16-SEP-21	16-SEP-21	R5585226
Miscellaneous Parameters							
Moisture	5.02		0.25	%		15-SEP-21	R5584987
L2639005-2 EX15-21-120							
Sampled By: CLIENT on 10-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	15-SEP-21	16-SEP-21	R5585228
Ethylbenzene	<0.015		0.015	mg/kg	15-SEP-21	16-SEP-21	R5585228
Toluene	0.025		0.014	mg/kg	15-SEP-21	16-SEP-21	R5585228
o-Xylene	<0.050		0.050	mg/kg	15-SEP-21	16-SEP-21	R5585228
m+p-Xylene	<0.050		0.050	mg/kg	15-SEP-21	16-SEP-21	R5585228
Surrogate: 1,4-Difluorobenzene	78.3		70-130	%	15-SEP-21	16-SEP-21	R5585228
Surrogate: 4-Bromofluorobenzene	73.1		70-130	%	15-SEP-21	16-SEP-21	R5585228
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	15-SEP-21	16-SEP-21	R5585399
Prep/Analysis Dates					15-SEP-21	16-SEP-21	R5585399
Surrogate: 2-Bromobenzotrifluoride	86.5		70-130	%	15-SEP-21	16-SEP-21	R5585399
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		16-SEP-21	
F1-BTEX	<10		10	mg/kg		16-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		16-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		16-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		16-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		16-SEP-21	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2639005-2 EX15-21-120							
Sampled By: CLIENT on 10-SEP-21							
Matrix: SOIL							
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	77.5		70-130	%	15-SEP-21	16-SEP-21	R5585261
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		16-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	24.1		0.50	mg/kg	16-SEP-21	16-SEP-21	R5585226
Miscellaneous Parameters							
Moisture	4.56		0.25	%		15-SEP-21	R5584987
L2639005-3 EX15-21-119							
Sampled By: CLIENT on 10-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	15-SEP-21	16-SEP-21	R5585228
Ethylbenzene	<0.015		0.015	mg/kg	15-SEP-21	16-SEP-21	R5585228
Toluene	0.076		0.014	mg/kg	15-SEP-21	16-SEP-21	R5585228
o-Xylene	<0.050		0.050	mg/kg	15-SEP-21	16-SEP-21	R5585228
m+p-Xylene	0.055		0.050	mg/kg	15-SEP-21	16-SEP-21	R5585228
Surrogate: 1,4-Difluorobenzene	86.5		70-130	%	15-SEP-21	16-SEP-21	R5585228
Surrogate: 4-Bromofluorobenzene	81.0		70-130	%	15-SEP-21	16-SEP-21	R5585228
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	15-SEP-21	16-SEP-21	R5585399
Prep/Analysis Dates					15-SEP-21	16-SEP-21	R5585399
Surrogate: 2-Bromobenzotrifluoride	86.4		70-130	%	15-SEP-21	16-SEP-21	R5585399
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		16-SEP-21	
F1-BTEX	<10		10	mg/kg		16-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		16-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		16-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		16-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		16-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	93.7		70-130	%	15-SEP-21	16-SEP-21	R5585261
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		16-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	24.0		0.50	mg/kg	16-SEP-21	16-SEP-21	R5585226
Miscellaneous Parameters							
Moisture	4.54		0.25	%		15-SEP-21	R5584987
L2639005-4 EX15-21-125							
Sampled By: CLIENT on 10-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	15-SEP-21	16-SEP-21	R5585228
Ethylbenzene	<0.015		0.015	mg/kg	15-SEP-21	16-SEP-21	R5585228
Toluene	<0.014		0.014	mg/kg	15-SEP-21	16-SEP-21	R5585228
o-Xylene	<0.050		0.050	mg/kg	15-SEP-21	16-SEP-21	R5585228
m+p-Xylene	<0.050		0.050	mg/kg	15-SEP-21	16-SEP-21	R5585228
Surrogate: 1,4-Difluorobenzene	79.8		70-130	%	15-SEP-21	16-SEP-21	R5585228

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2639005-4 EX15-21-125							
Sampled By: CLIENT on 10-SEP-21							
Matrix: SOIL							
BTEX and Styrene							
Surrogate: 4-Bromofluorobenzene	78.0		70-130	%	15-SEP-21	16-SEP-21	R5585228
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	15-SEP-21	16-SEP-21	R5585399
Prep/Analysis Dates					15-SEP-21	16-SEP-21	R5585399
Surrogate: 2-Bromobenzotrifluoride	86.7		70-130	%	15-SEP-21	16-SEP-21	R5585399
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		16-SEP-21	
F1-BTEX	<10		10	mg/kg		16-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		16-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		16-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		16-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		16-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	82.2		70-130	%	15-SEP-21	16-SEP-21	R5585261
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		16-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	2.61		0.50	mg/kg	16-SEP-21	16-SEP-21	R5585226
Miscellaneous Parameters							
Moisture	7.16		0.25	%		15-SEP-21	R5584987
L2639005-5 EX15-21-126							
Sampled By: CLIENT on 10-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	15-SEP-21	16-SEP-21	R5585228
Ethylbenzene	0.016		0.015	mg/kg	15-SEP-21	16-SEP-21	R5585228
Toluene	0.169		0.014	mg/kg	15-SEP-21	16-SEP-21	R5585228
o-Xylene	<0.050		0.050	mg/kg	15-SEP-21	16-SEP-21	R5585228
m+p-Xylene	0.062		0.050	mg/kg	15-SEP-21	16-SEP-21	R5585228
Surrogate: 1,4-Difluorobenzene	89.7		70-130	%	15-SEP-21	16-SEP-21	R5585228
Surrogate: 4-Bromofluorobenzene	86.9		70-130	%	15-SEP-21	16-SEP-21	R5585228
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	15-SEP-21	16-SEP-21	R5585399
Prep/Analysis Dates					15-SEP-21	16-SEP-21	R5585399
Surrogate: 2-Bromobenzotrifluoride	86.5		70-130	%	15-SEP-21	16-SEP-21	R5585399
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		16-SEP-21	
F1-BTEX	<10		10	mg/kg		16-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		16-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		16-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		16-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		16-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	104.4		70-130	%	15-SEP-21	16-SEP-21	R5585261
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		16-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	1.83		0.50	mg/kg	16-SEP-21	16-SEP-21	R5585226
Miscellaneous Parameters							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2639005-5 EX15-21-126							
Sampled By: CLIENT on 10-SEP-21							
Matrix: SOIL							
Moisture	3.68		0.25	%		15-SEP-21	R5584987
L2639005-6 EX15-21-127							
Sampled By: CLIENT on 10-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	15-SEP-21	16-SEP-21	R5585228
Ethylbenzene	<0.015		0.015	mg/kg	15-SEP-21	16-SEP-21	R5585228
Toluene	0.069		0.014	mg/kg	15-SEP-21	16-SEP-21	R5585228
o-Xylene	<0.050		0.050	mg/kg	15-SEP-21	16-SEP-21	R5585228
m+p-Xylene	<0.050		0.050	mg/kg	15-SEP-21	16-SEP-21	R5585228
Surrogate: 1,4-Difluorobenzene	92.6		70-130	%	15-SEP-21	16-SEP-21	R5585228
Surrogate: 4-Bromofluorobenzene	91.7		70-130	%	15-SEP-21	16-SEP-21	R5585228
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	15-SEP-21	16-SEP-21	R5585399
Prep/Analysis Dates					15-SEP-21	16-SEP-21	R5585399
Surrogate: 2-Bromobenzotrifluoride	96.3		70-130	%	15-SEP-21	16-SEP-21	R5585399
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		16-SEP-21	
F1-BTEX	<10		10	mg/kg		16-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		16-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		16-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		16-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		16-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	101.1		70-130	%	15-SEP-21	16-SEP-21	R5585261
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		16-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	2.81		0.50	mg/kg	16-SEP-21	16-SEP-21	R5585226
Miscellaneous Parameters							
Moisture	7.36		0.25	%		15-SEP-21	R5584987
L2639005-7 EX15-21-128							
Sampled By: CLIENT on 10-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	15-SEP-21	16-SEP-21	R5585228
Ethylbenzene	<0.015		0.015	mg/kg	15-SEP-21	16-SEP-21	R5585228
Toluene	0.062		0.014	mg/kg	15-SEP-21	16-SEP-21	R5585228
o-Xylene	<0.050		0.050	mg/kg	15-SEP-21	16-SEP-21	R5585228
m+p-Xylene	<0.050		0.050	mg/kg	15-SEP-21	16-SEP-21	R5585228
Surrogate: 1,4-Difluorobenzene	92.5		70-130	%	15-SEP-21	16-SEP-21	R5585228
Surrogate: 4-Bromofluorobenzene	83.6		70-130	%	15-SEP-21	16-SEP-21	R5585228
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	15-SEP-21	16-SEP-21	R5585399
Prep/Analysis Dates					15-SEP-21	16-SEP-21	R5585399
Surrogate: 2-Bromobenzotrifluoride	86.3		70-130	%	15-SEP-21	16-SEP-21	R5585399
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		16-SEP-21	
F1-BTEX	<10		10	mg/kg		16-SEP-21	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2639005-7 EX15-21-128							
Sampled By: CLIENT on 10-SEP-21							
Matrix: SOIL							
CCME Total Hydrocarbons							
F2 (C10-C16)	<25		25	mg/kg		16-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		16-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		16-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		16-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	75.8		70-130	%	15-SEP-21	16-SEP-21	R5585261
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		16-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	1.63		0.50	mg/kg	16-SEP-21	16-SEP-21	R5585226
Miscellaneous Parameters							
Moisture	5.61		0.25	%		15-SEP-21	R5584987
L2639005-8 EX15-21-129							
Sampled By: CLIENT on 10-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	15-SEP-21	16-SEP-21	R5585228
Ethylbenzene	<0.015		0.015	mg/kg	15-SEP-21	16-SEP-21	R5585228
Toluene	0.041		0.014	mg/kg	15-SEP-21	16-SEP-21	R5585228
o-Xylene	<0.050		0.050	mg/kg	15-SEP-21	16-SEP-21	R5585228
m+p-Xylene	<0.050		0.050	mg/kg	15-SEP-21	16-SEP-21	R5585228
Surrogate: 1,4-Difluorobenzene	84.8		70-130	%	15-SEP-21	16-SEP-21	R5585228
Surrogate: 4-Bromofluorobenzene	81.6		70-130	%	15-SEP-21	16-SEP-21	R5585228
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	15-SEP-21	16-SEP-21	R5585399
Prep/Analysis Dates					15-SEP-21	16-SEP-21	R5585399
Surrogate: 2-Bromobenzotrifluoride	76.6		70-130	%	15-SEP-21	16-SEP-21	R5585399
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		16-SEP-21	
F1-BTEX	<10		10	mg/kg		16-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		16-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		16-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		16-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		16-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	94.1		70-130	%	15-SEP-21	16-SEP-21	R5585261
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		16-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	2.10		0.50	mg/kg	16-SEP-21	16-SEP-21	R5585226
Miscellaneous Parameters							
Moisture	7.00		0.25	%		15-SEP-21	R5584987
L2639005-9 EX15-21-130							
Sampled By: CLIENT on 10-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	15-SEP-21	16-SEP-21	R5585228

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2639005-9 EX15-21-130							
Sampled By: CLIENT on 10-SEP-21							
Matrix: SOIL							
BTEX and Styrene							
Ethylbenzene	<0.015		0.015	mg/kg	15-SEP-21	16-SEP-21	R5585228
Toluene	<0.014		0.014	mg/kg	15-SEP-21	16-SEP-21	R5585228
o-Xylene	<0.050		0.050	mg/kg	15-SEP-21	16-SEP-21	R5585228
m+p-Xylene	<0.050		0.050	mg/kg	15-SEP-21	16-SEP-21	R5585228
Surrogate: 1,4-Difluorobenzene	78.9		70-130	%	15-SEP-21	16-SEP-21	R5585228
Surrogate: 4-Bromofluorobenzene	74.0		70-130	%	15-SEP-21	16-SEP-21	R5585228
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	15-SEP-21	16-SEP-21	R5585399
Prep/Analysis Dates					15-SEP-21	16-SEP-21	R5585399
Surrogate: 2-Bromobenzotrifluoride	82.4		70-130	%	15-SEP-21	16-SEP-21	R5585399
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		16-SEP-21	
F1-BTEX	<10		10	mg/kg		16-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		16-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		16-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		16-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		16-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	82.6		70-130	%	15-SEP-21	16-SEP-21	R5585261
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		16-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	1.77		0.50	mg/kg	16-SEP-21	16-SEP-21	R5585226
Miscellaneous Parameters							
Moisture	3.01		0.25	%		15-SEP-21	R5584987
L2639005-10 EX15-21-130D							
Sampled By: CLIENT on 10-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	15-SEP-21	16-SEP-21	R5585228
Ethylbenzene	<0.015		0.015	mg/kg	15-SEP-21	16-SEP-21	R5585228
Toluene	<0.014		0.014	mg/kg	15-SEP-21	16-SEP-21	R5585228
o-Xylene	<0.050		0.050	mg/kg	15-SEP-21	16-SEP-21	R5585228
m+p-Xylene	<0.050		0.050	mg/kg	15-SEP-21	16-SEP-21	R5585228
Surrogate: 1,4-Difluorobenzene	79.2		70-130	%	15-SEP-21	16-SEP-21	R5585228
Surrogate: 4-Bromofluorobenzene	76.6		70-130	%	15-SEP-21	16-SEP-21	R5585228
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	15-SEP-21	16-SEP-21	R5585399
Prep/Analysis Dates					15-SEP-21	16-SEP-21	R5585399
Surrogate: 2-Bromobenzotrifluoride	86.7		70-130	%	15-SEP-21	16-SEP-21	R5585399
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		16-SEP-21	
F1-BTEX	<10		10	mg/kg		16-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		16-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		16-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		16-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		16-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	87.3		70-130	%	15-SEP-21	16-SEP-21	R5585261

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2639005-10 EX15-21-130D							
Sampled By: CLIENT on 10-SEP-21							
Matrix: SOIL							
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		16-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	2.39		0.50	mg/kg	16-SEP-21	16-SEP-21	R5585226
Miscellaneous Parameters							
Moisture	2.91		0.25	%		15-SEP-21	R5584987

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BTXS-MEOH-HS-MS-CL	Soil	BTEX and Styrene	EPA 8260C/5021A

The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. Target compound concentrations are measured using mass spectrometry detection.

F1-4-CALC-CL	Soil	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-MEOH-HS-FID-CL	Soil	F1(C6-C10)	CWS PHC Tier 1

The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. The F1 fraction concentration is measured using flame ionization detection.

F2-4-TMB-H/A-FID-CL	Soil	CCME F2-4 Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

This analysis is carried out in accordance with the "Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method, Canadian Council of Ministers of the Environment, December 2001." For C10 to C50 hydrocarbons (F2, F3, F4) and gravimetric heavy hydrocarbons (F4G-sg), a subsample of the sediment/soil is extracted with 1:1 hexane:acetone using a rotary extractor. The extract undergoes a silica-gel clean-up to remove polar compounds. F2, F3 & F4 are analyzed by on-column GC/FID, and F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where F4 (C34-C50) and F4G-sg results are reported for a sample, the larger of the reported values is used for comparison against the relevant CCME standard for F4.
7. The gravimetric heavy hydrocarbon results (F4G-sg), cannot be added to the C6 to C50 hydrocarbon results.
8. This method is validated for use.
9. Data from analysis of quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram.

MET-200.2-CCMS-ED	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020A (mod)

Soil/sediment is dried, disaggregated, and sieved (2 mm). Strong Acid Leachable Metals in the <2mm fraction are solubilized by heated digestion with nitric and hydrochloric acids. Instrumental analysis is by Collision / Reaction Cell ICPMS.

Limitations: This method is intended to liberate environmentally available metals. Silicate minerals are not solubilized. Some metals may be only partially recovered (matrix dependent), including Al, Ba, Be, Cr, S, Sr, Ti, Tl, V, W, and Zr. Elemental Sulfur may be poorly recovered by this method. Volatile forms of sulfur (e.g. sulfide, H2S) may be excluded if lost during sampling, storage, or digestion.

MOISTURE-CL	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)

This analysis is carried out gravimetrically by drying the sample at 105 C

XYLENES-SUM-CALC-CL	Soil	Sum of Xylene Isomer Concentrations	CALCULATED RESULT

Total xylenes represents the sum of o-xylene and m&p-xylene.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
ED	ALS ENVIRONMENTAL - EDMONTON, ALBERTA, CANADA
CL	ALS ENVIRONMENTAL - CALGARY, ALBERTA, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L2639005 Report Date: 16-SEP-21

Client: GOLDER ASSOCIATES LTD
16820 107 Ave NW
Edmonton AB T5P 4C3
Contact: Steven Fiddler

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTXS-MEOH-HS-MS-CL	**Soil**							
Batch R5585228								
WG3617438-13 LCS								
Benzene			85.9		%		70-130	16-SEP-21
Ethylbenzene			84.5		%		70-130	16-SEP-21
Toluene			83.6		%		70-130	16-SEP-21
o-Xylene			89.4		%		70-130	16-SEP-21
m+p-Xylene			85.1		%		70-130	16-SEP-21
WG3617438-12 MB								
Benzene			<0.0050		mg/kg		0.005	16-SEP-21
Ethylbenzene			<0.015		mg/kg		0.015	16-SEP-21
Toluene			<0.014		mg/kg		0.014	16-SEP-21
o-Xylene			<0.050		mg/kg		0.05	16-SEP-21
m+p-Xylene			<0.050		mg/kg		0.05	16-SEP-21
Surrogate: 1,4-Difluorobenzene			77.4		%		70-130	16-SEP-21
Surrogate: 4-Bromofluorobenzene			75.4		%		70-130	16-SEP-21
F1-MEOH-HS-FID-CL	**Soil**							
Batch R5585261								
WG3617438-13 LCS								
F1(C6-C10)			111.3		%		70-130	16-SEP-21
WG3617438-12 MB								
F1(C6-C10)			<10		mg/kg		10	16-SEP-21
Surrogate: 3,4-Dichlorotoluene			81.0		%		70-130	16-SEP-21
F2-4-TMB-H/A-FID-CL	**Soil**							
Batch R5585399								
WG3618090-4 DUP		**L2639005-1**						
F2: (C10-C16)		<25	<25	RPD-NA	mg/kg	N/A	40	16-SEP-21
F3: (C16-C34)		<50	<50	RPD-NA	mg/kg	N/A	40	16-SEP-21
F4: (C34-C50)		<50	<50	RPD-NA	mg/kg	N/A	40	16-SEP-21
WG3618090-3 IRM		**ALS PHC3 RM**						
F2: (C10-C16)			93.8		%		70-130	16-SEP-21
F3: (C16-C34)			92.5		%		70-130	16-SEP-21
F4: (C34-C50)			87.1		%		70-130	16-SEP-21
WG3618090-2 LCS								
F2: (C10-C16)			120.8		%		70-130	16-SEP-21
F3: (C16-C34)			120.6		%		70-130	16-SEP-21
F4: (C34-C50)			109.1		%		70-130	16-SEP-21
WG3618090-1 MB								

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-4-TMB-H/A-FID-CL	**Soil**							
Batch R5585399								
WG3618090-1 MB								
F2: (C10-C16)			<25		mg/kg		25	16-SEP-21
F3: (C16-C34)			<50		mg/kg		50	16-SEP-21
F4: (C34-C50)			<50		mg/kg		50	16-SEP-21
Surrogate: 2-Bromobenzotrifluoride			80.7		%		70-130	16-SEP-21
MET-200.2-CCMS-ED	**Soil**							
Batch R5585226								
WG3618493-3 CRM		**SCP_SS-2_SOIL**						
Lead (Pb)			88.2		%		70-130	16-SEP-21
WG3618493-2 LCS								
Lead (Pb)			97.6		%		80-120	16-SEP-21
WG3618493-1 MB								
Lead (Pb)			<0.50		mg/kg		0.5	16-SEP-21
MOISTURE-CL	**Soil**							
Batch R5584987								
WG3618094-3 DUP		**L2639005-1**						
Moisture		5.02	6.82	DUP-H	%	30	20	15-SEP-21
COMMENTS: Sample is non-homogeneous								
WG3618094-2 LCS								
Moisture			97.9		%		90-110	15-SEP-21
WG3618094-1 MB								
Moisture			<0.25		%		0.25	15-SEP-21

Quality Control Report

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
DUP-H	Duplicate results outside ALS DQO, due to sample heterogeneity.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

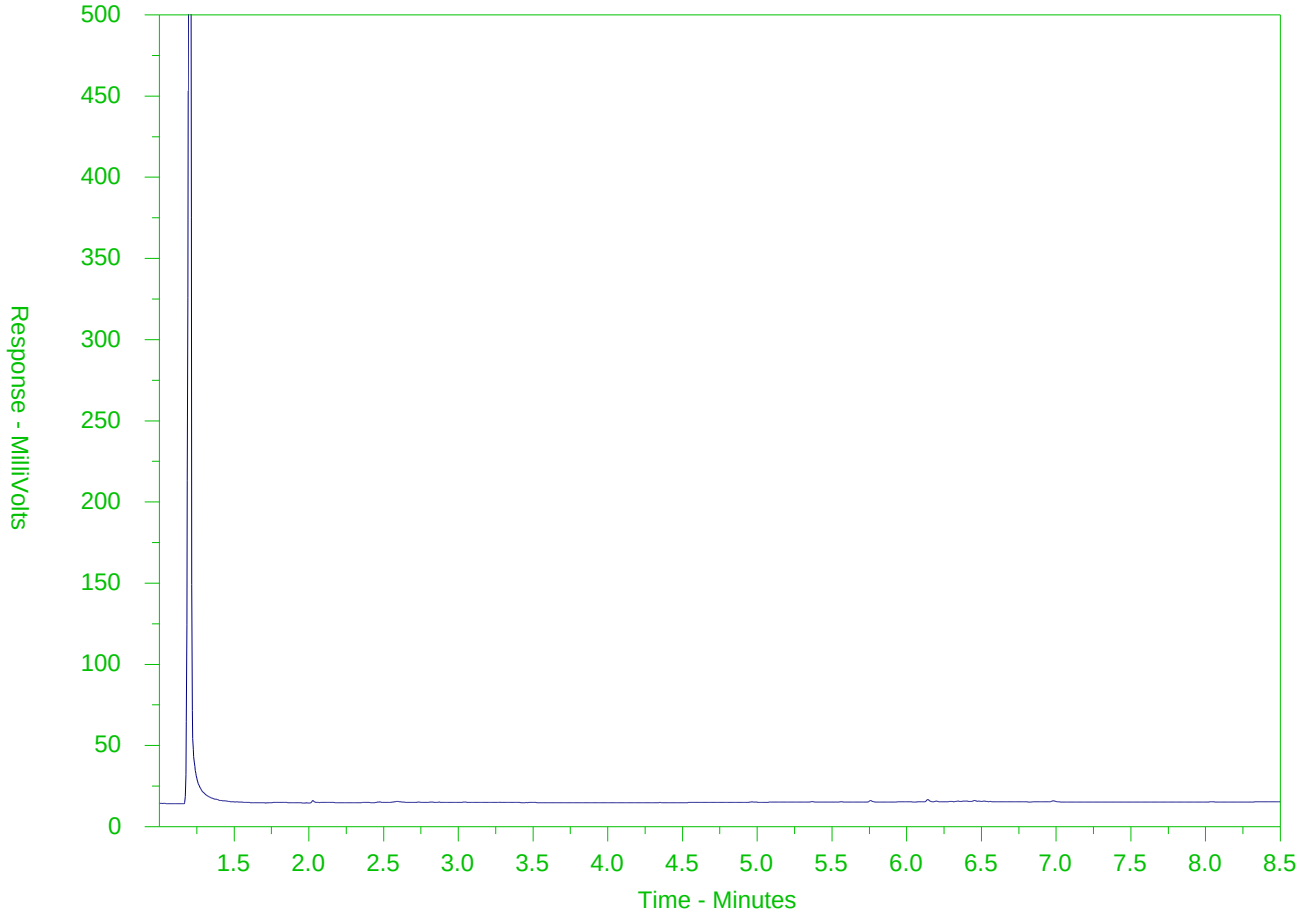
All test results reported with this submission were conducted within ALS recommended hold times.

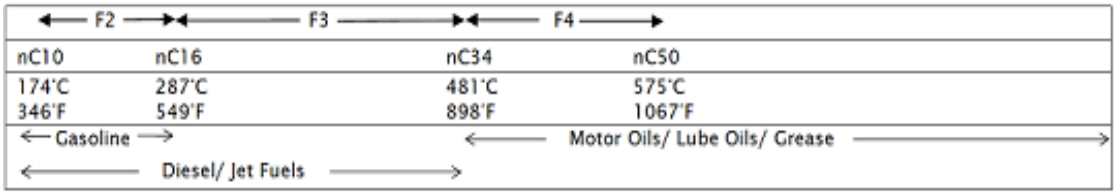
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

ALS Sample ID: L2639005-1
Client Sample ID: EX15-21-118





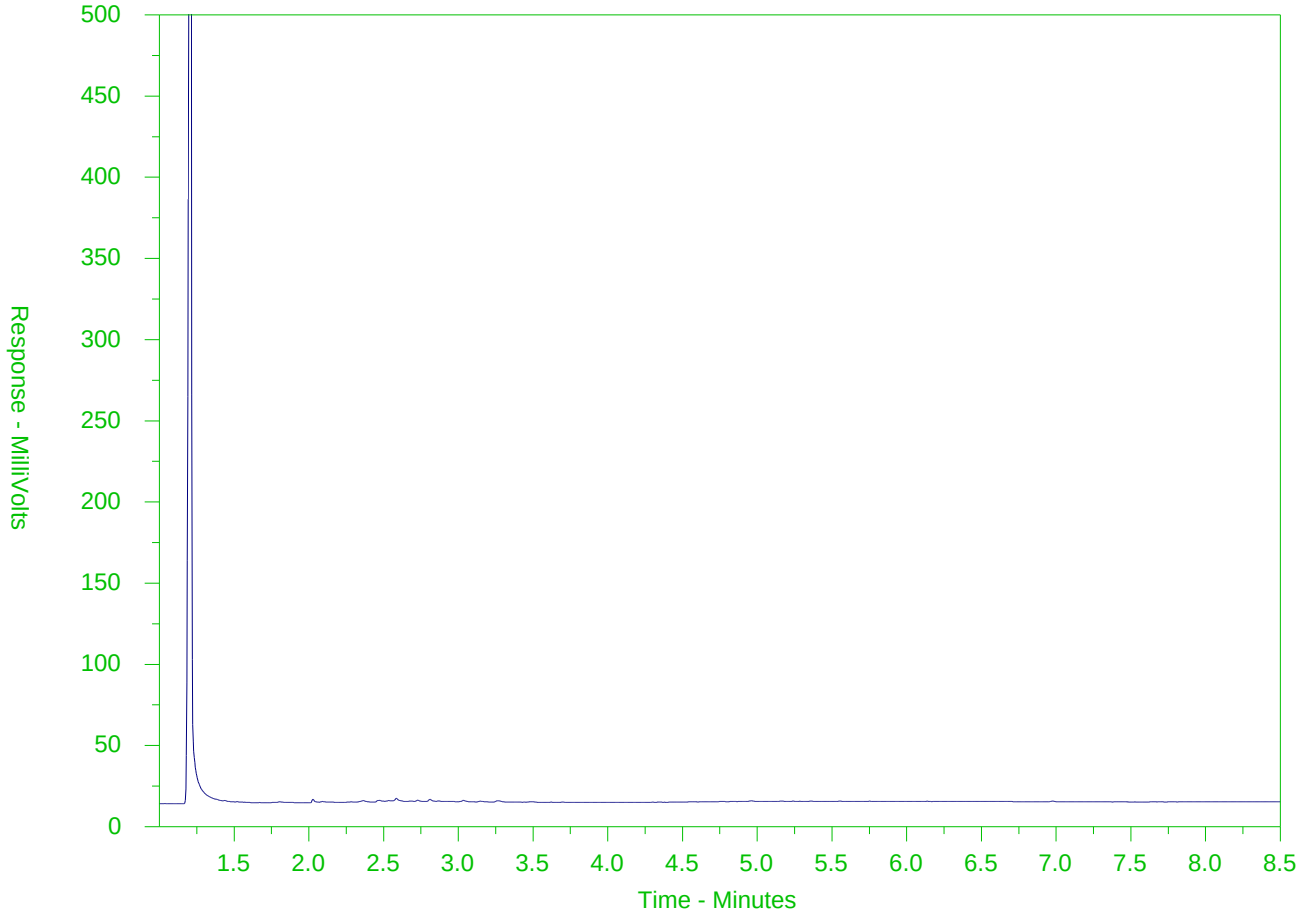
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

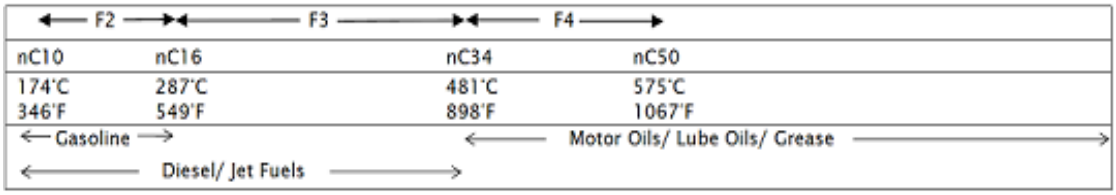
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2639005-2
Client Sample ID: EX15-21-120





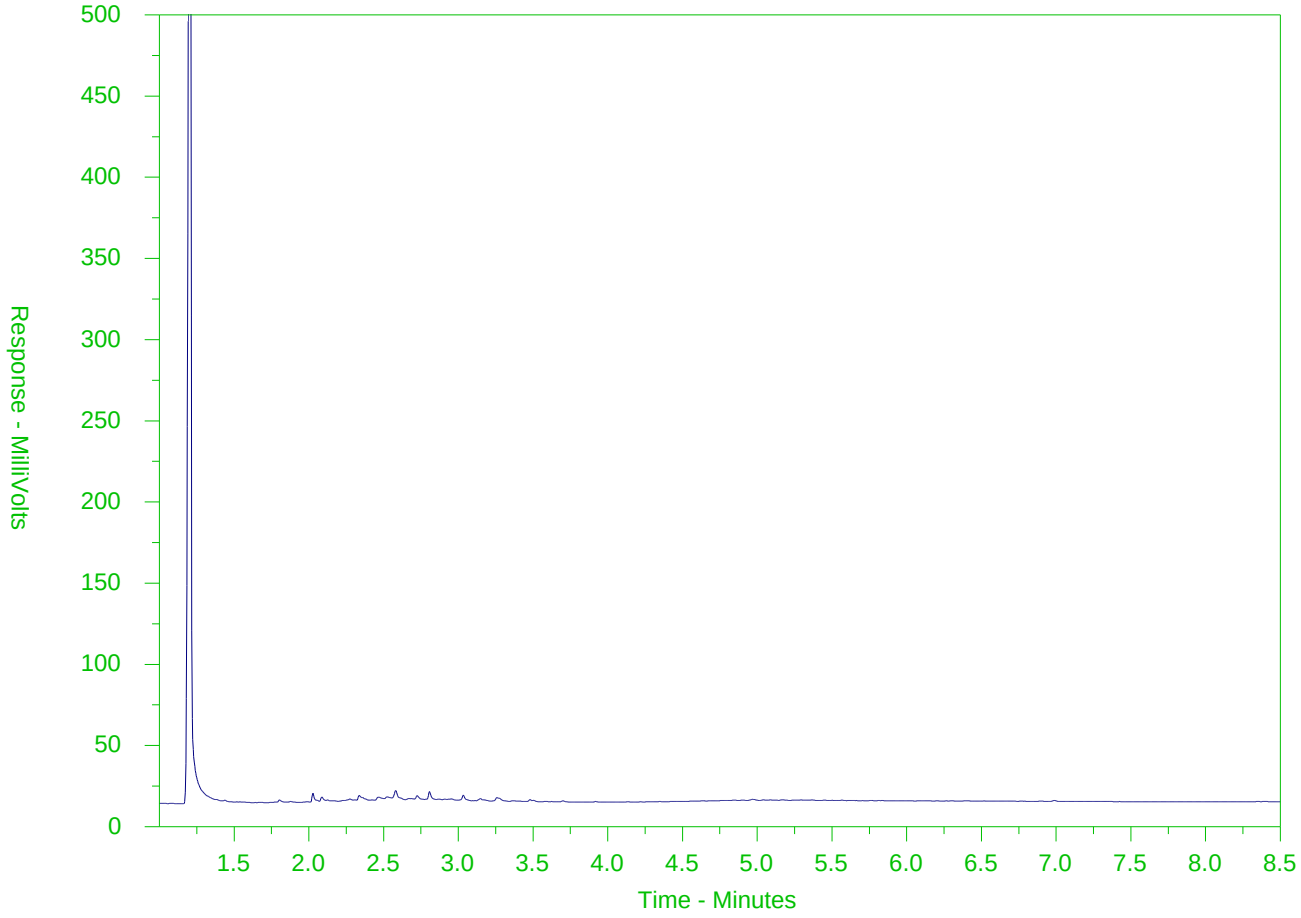
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

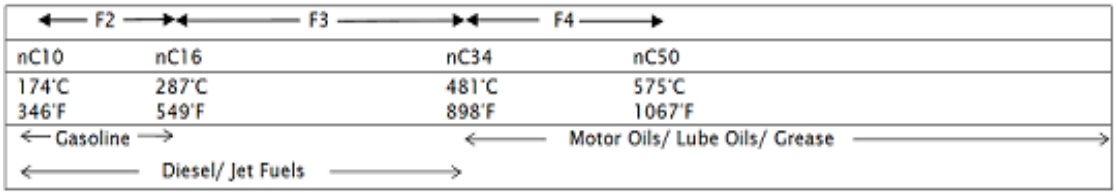
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2639005-3
Client Sample ID: EX15-21-119





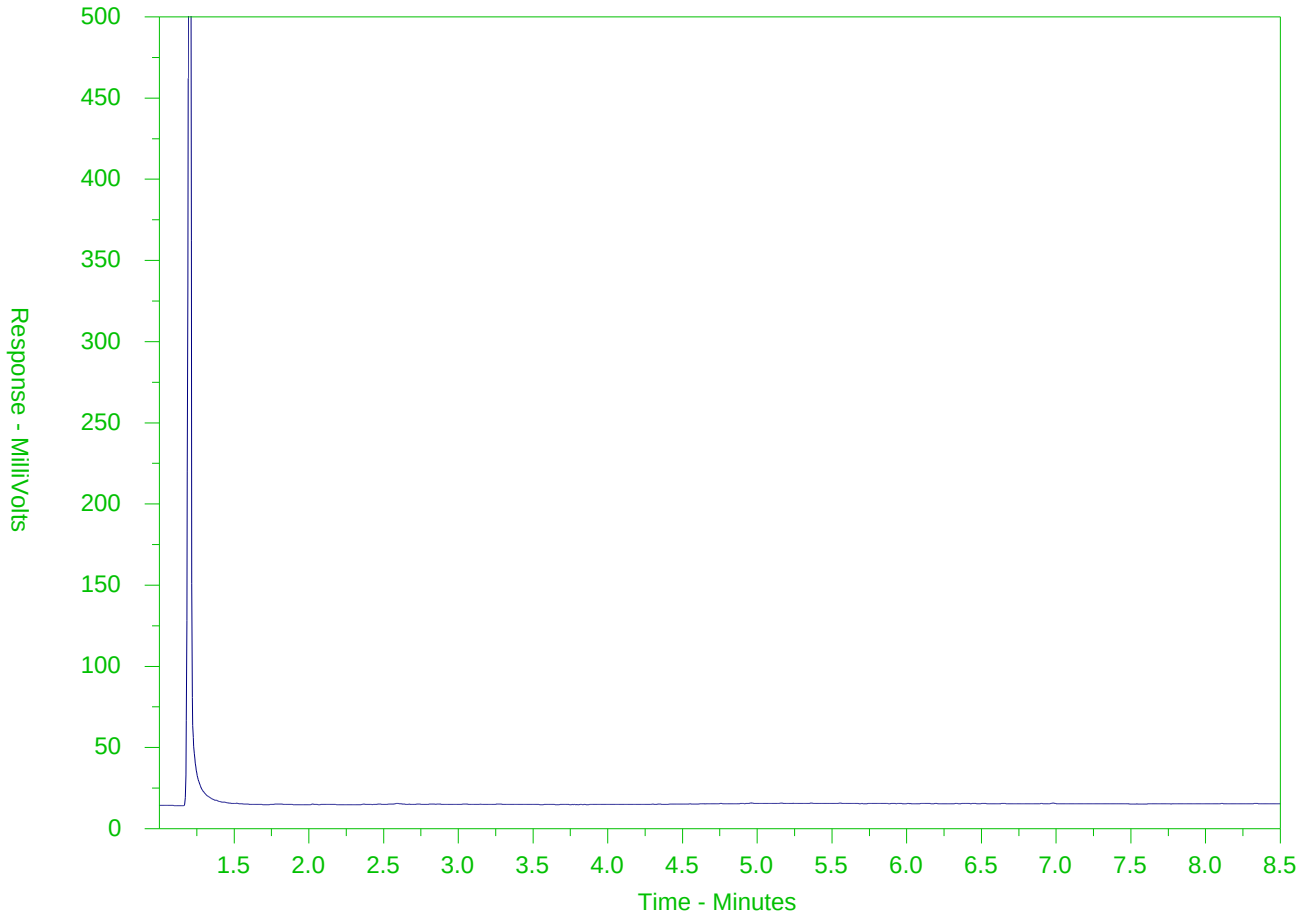
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

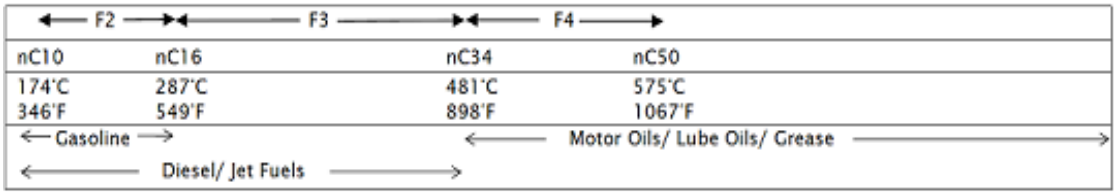
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2639005-4
Client Sample ID: EX15-21-125





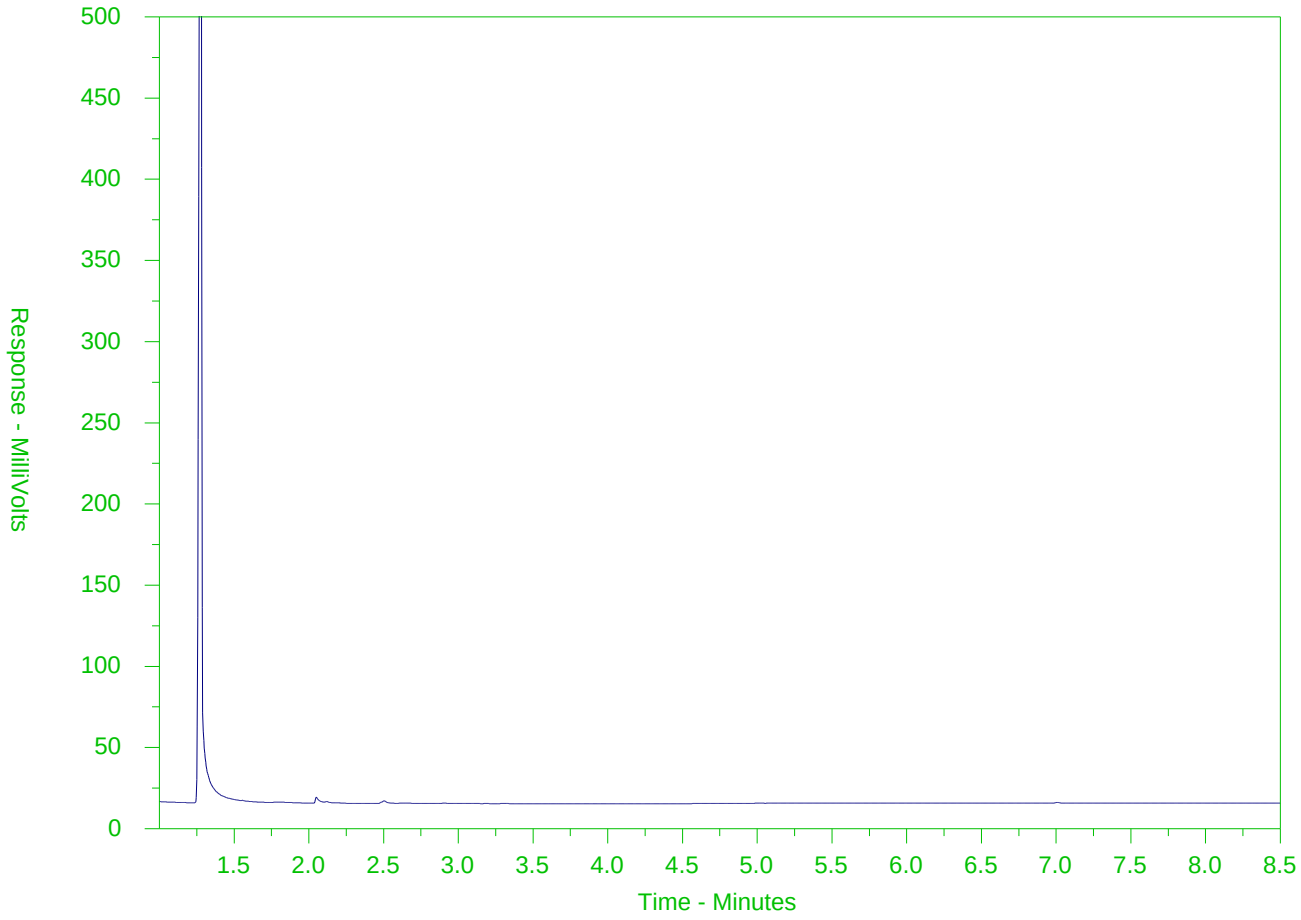
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

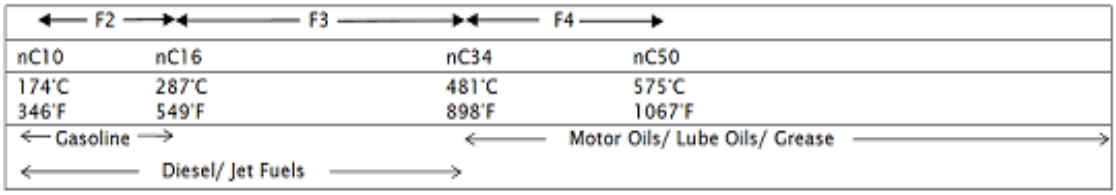
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2639005-5
Client Sample ID: EX15-21-126





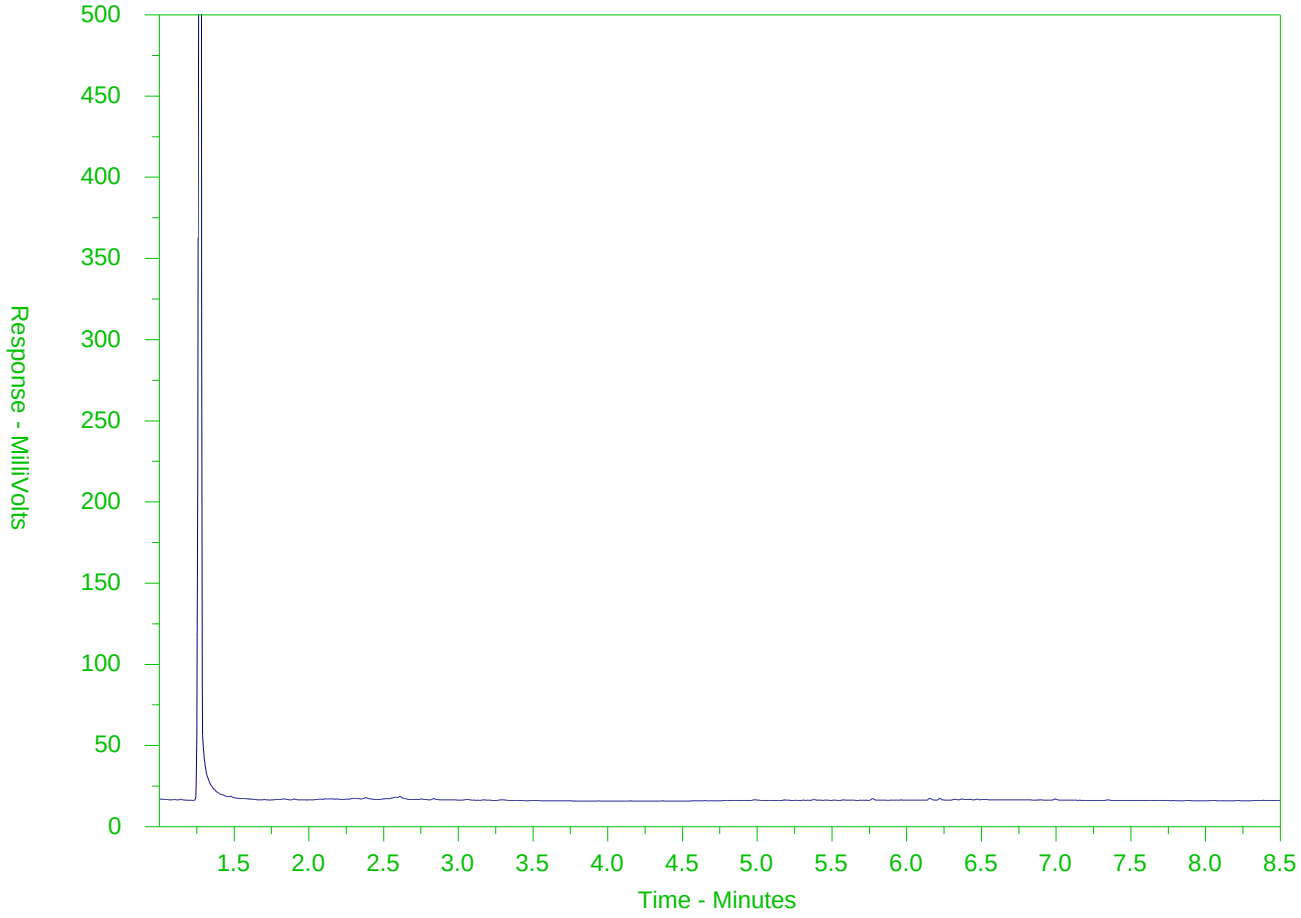
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

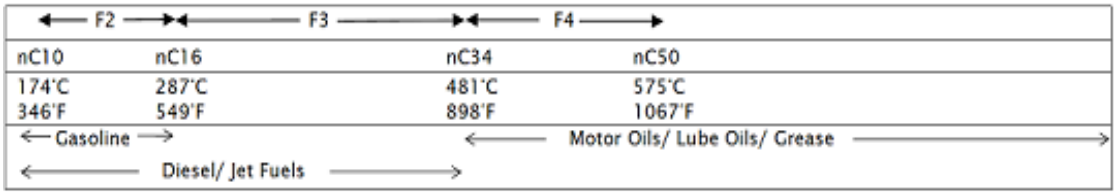
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Sample ID: L2639005-6
Client Sample ID: EX15-21-127





The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

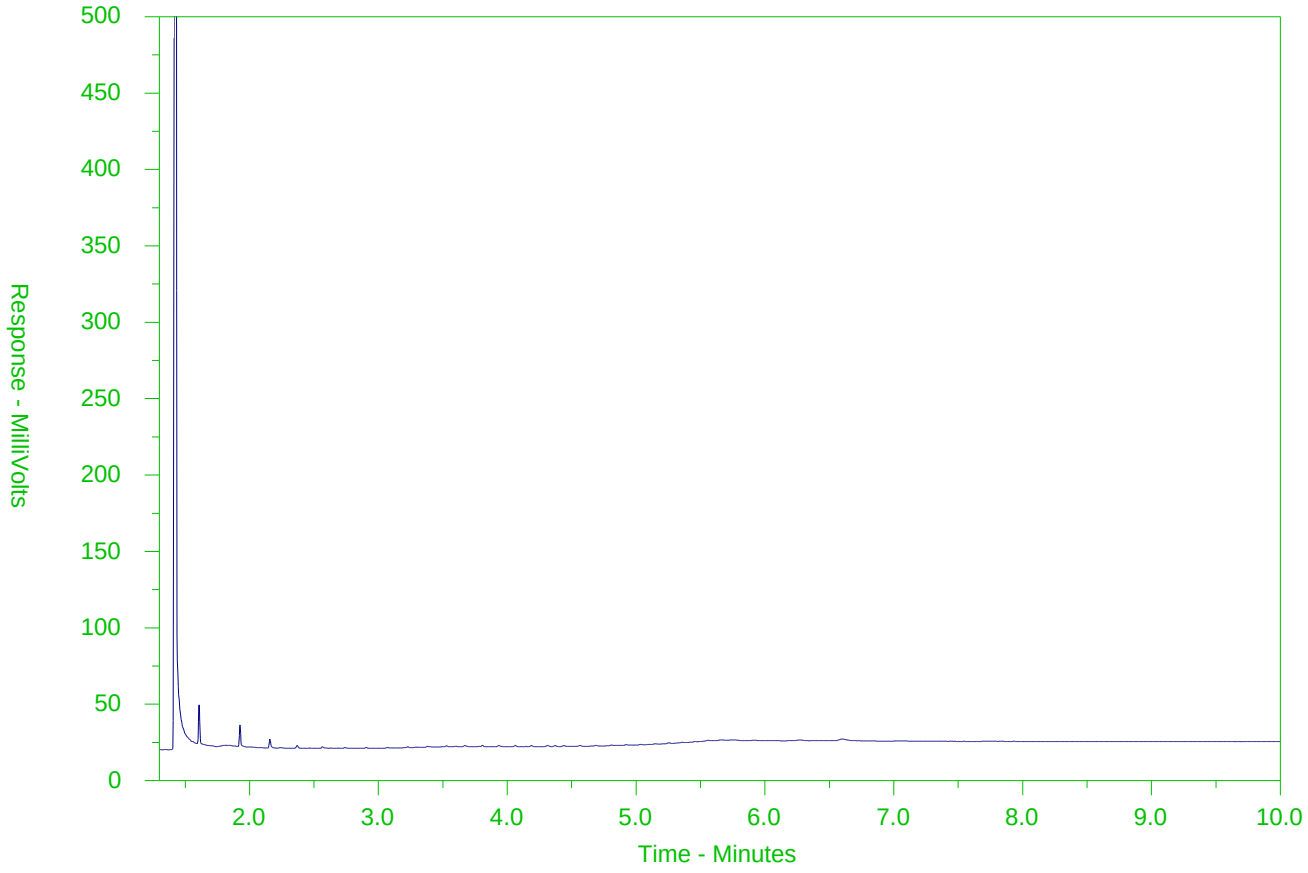
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2639005-7
Client Sample ID: EX15-21-128



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

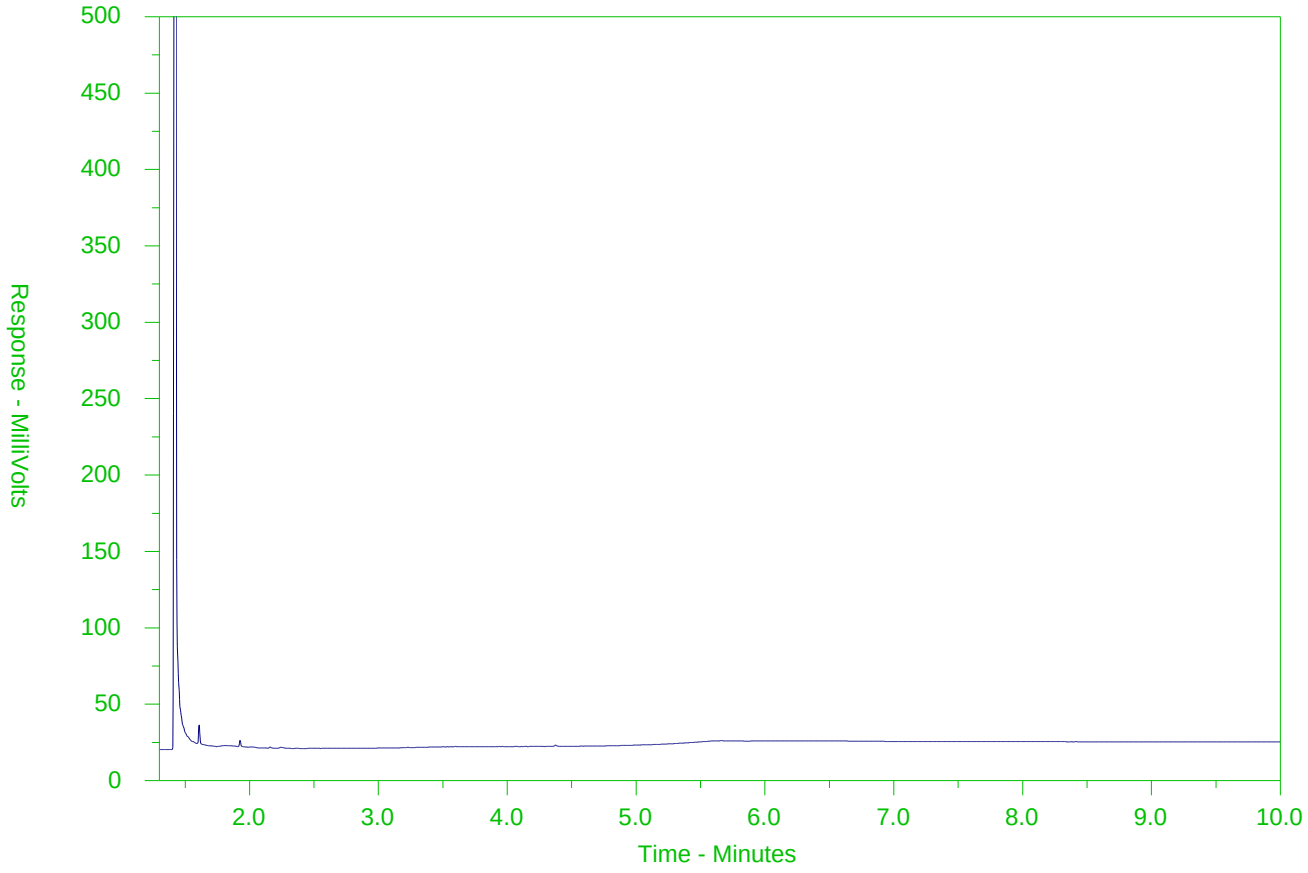
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2639005-8
Client Sample ID: EX15-21-129



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

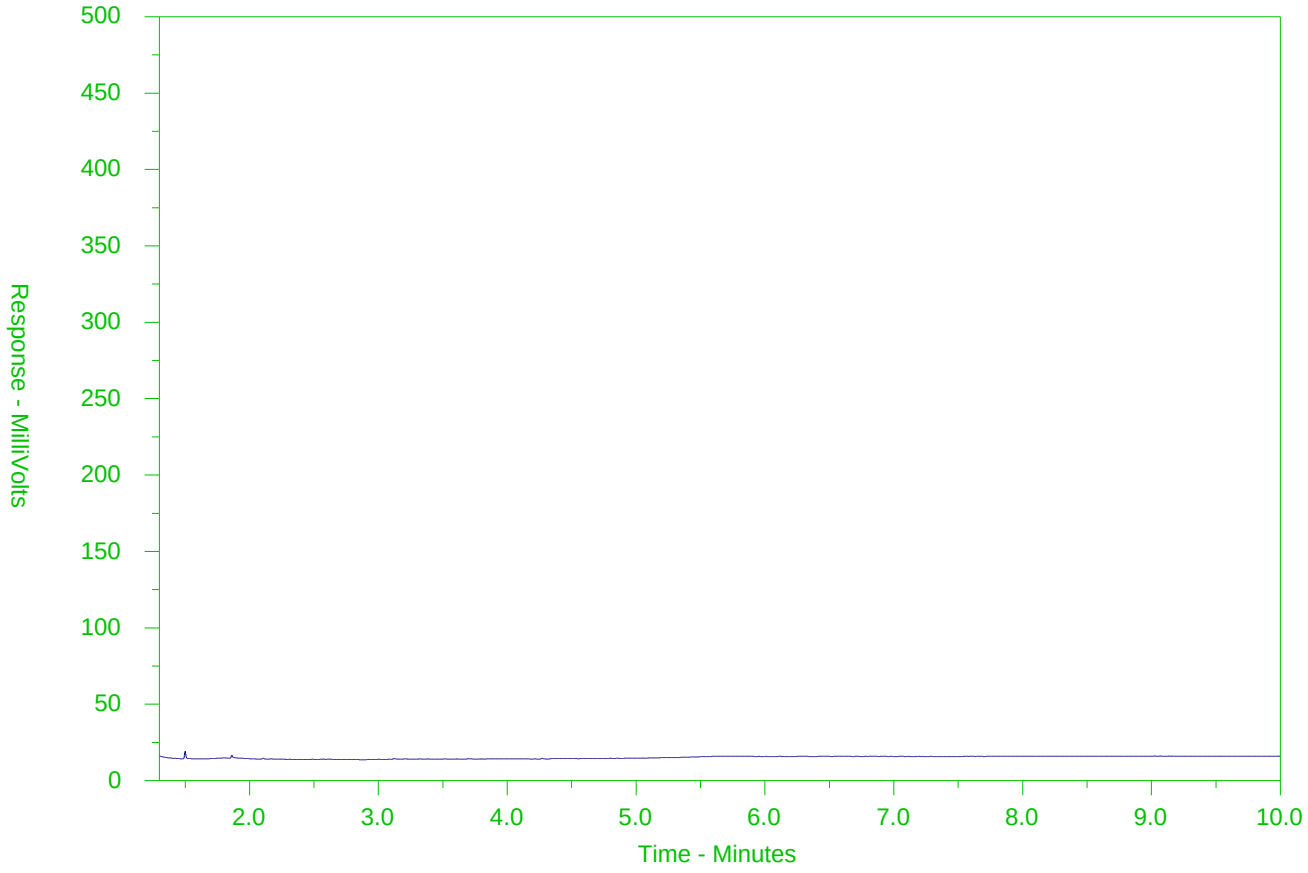
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2639005-9
Client Sample ID: EX15-21-130



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

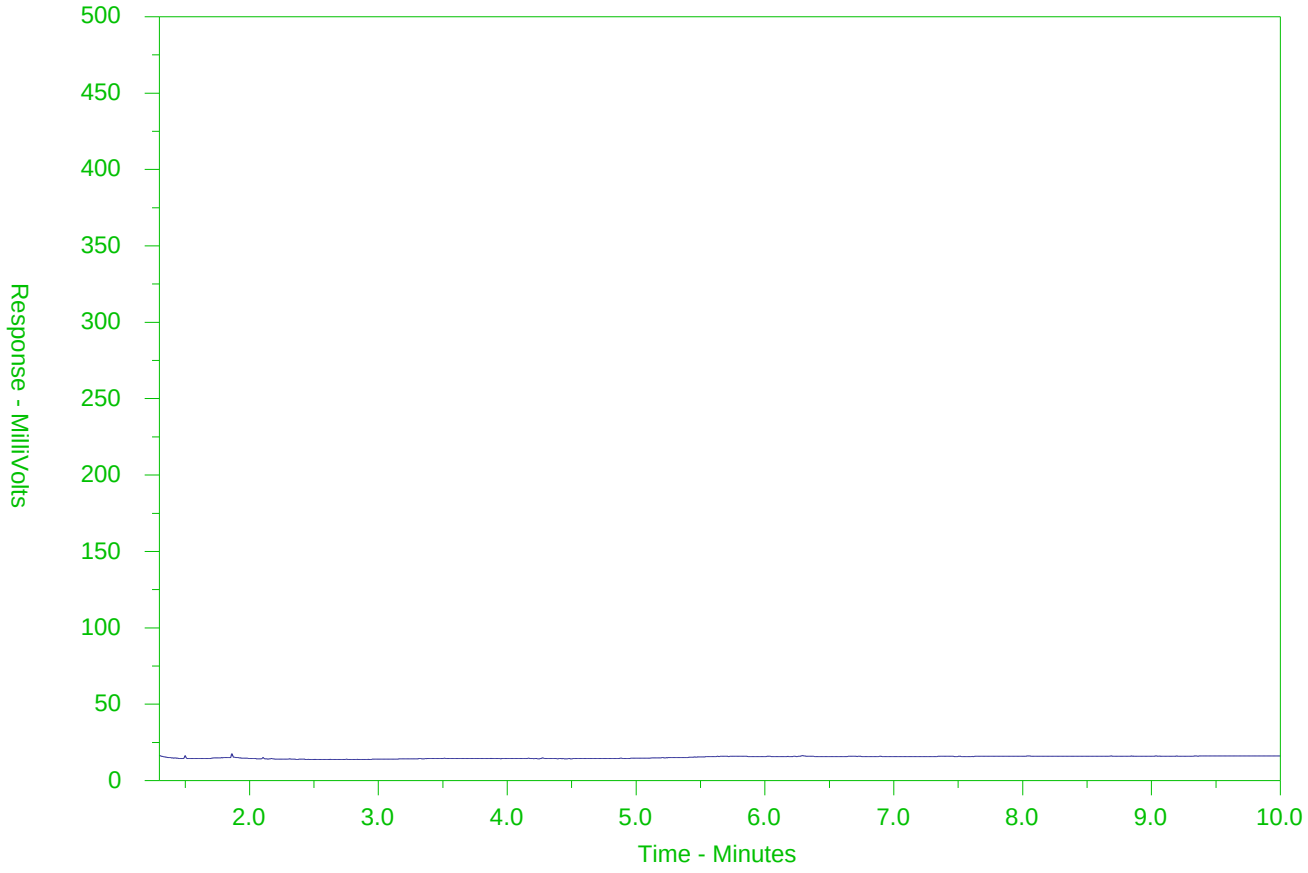
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2639005-10
Client Sample ID: EX15-21-130D



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number:

Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street, Suite 330
City/Province:	Toronto ON
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	k.lewis@mandalayresources.com

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)

Quality Control (QC) Report with Report ☑ YES ☐ NO

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: k.lewis@mandalayresources.com

Email 2: sfiddler@golder.com

Email 3: jmusijowski@golder.com

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax:

Email 2:

Project Information

ALS Account # / Quote #: Q80711

Job #: 20446521

PO / AFE:

LSD: Lupin Mine

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#:

Major/Minor Code: Routing Code:

Requisitioner:

Location:

ALS Lab Work Order # (lab use only):

ALS Contact: Oliver Gregg Sampler:

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☒ | Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	BTEX, F1-F4	Lead	Arsenic	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	EX15-21-118	10-Sep-21		Soil	4	X	X			
	EX15-21-120					X	X			
	EX15-21-119					X	X			
	EX15-21-125					X	X			
	EX15-21-126					X	X			
	EX15-21-127					X	X			
	EX15-21-128					X	X			
	EX15-21-129					X	X			
	EX15-21-130					X	X			
	EX15-21-130D					X	X			

L2639005-COFC

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human consumption/ use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please upload to EQUIS Code: 2016 EEM – Lupin" Facility Code: 36896427

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
7.0							

SHIPMENT RELEASE (client use)

Released by:	Date:	Time:
R Boyce	Sept 11/21	7:00

INITIAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:
	Sept 13 21	15:30

FINAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCT 2018 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

GOLDER ASSOCIATES LTD
ATTN: Karyn Lewis
76 Richmond Street Suite 330
Toronto ON M5C 1P1

Date Received: 15-SEP-21
Report Date: 18-SEP-21 15:53 (MT)
Version: FINAL

Client Phone: --

Certificate of Analysis

Lab Work Order #: L2639913

Project P.O. #:	NOT SUBMITTED
Job Reference:	20446521
C of C Numbers:	20-904460
Legal Site Desc:	LUPIN MINE

Harman Bhullar
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2639913-1 EX15-02							
Sampled By: CLIENT on 15-SEP-21							
Matrix: SOIL							
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	40.7		0.50	mg/kg	18-SEP-21	18-SEP-21	R5586785
L2639913-2 EX15-21-139							
Sampled By: CLIENT on 15-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	17-SEP-21	18-SEP-21	R5586667
Ethylbenzene	<0.015		0.015	mg/kg	17-SEP-21	18-SEP-21	R5586667
Toluene	0.022		0.014	mg/kg	17-SEP-21	18-SEP-21	R5586667
o-Xylene	<0.050		0.050	mg/kg	17-SEP-21	18-SEP-21	R5586667
m+p-Xylene	<0.050		0.050	mg/kg	17-SEP-21	18-SEP-21	R5586667
Surrogate: 1,4-Difluorobenzene	83.1		70-130	%	17-SEP-21	18-SEP-21	R5586667
Surrogate: 4-Bromofluorobenzene	72.9		70-130	%	17-SEP-21	18-SEP-21	R5586667
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	17-SEP-21	18-SEP-21	R5586796
Prep/Analysis Dates					17-SEP-21	18-SEP-21	R5586796
Surrogate: 2-Bromobenzotrifluoride	87.1		70-130	%	17-SEP-21	18-SEP-21	R5586796
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		18-SEP-21	
F1-BTEX	<10		10	mg/kg		18-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		18-SEP-21	
F3 (C16-C34)	77		50	mg/kg		18-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		18-SEP-21	
Total Hydrocarbons (C6-C50)	77		50	mg/kg		18-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	78.7		70-130	%	17-SEP-21	18-SEP-21	R5586671
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		18-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	2.06		0.50	mg/kg	18-SEP-21	18-SEP-21	R5586785
Miscellaneous Parameters							
Moisture	5.64		0.25	%		18-SEP-21	R5586609
L2639913-3 EX15-21-140							
Sampled By: CLIENT on 15-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	17-SEP-21	18-SEP-21	R5586667
Ethylbenzene	<0.015		0.015	mg/kg	17-SEP-21	18-SEP-21	R5586667
Toluene	0.015		0.014	mg/kg	17-SEP-21	18-SEP-21	R5586667
o-Xylene	<0.050		0.050	mg/kg	17-SEP-21	18-SEP-21	R5586667
m+p-Xylene	<0.050		0.050	mg/kg	17-SEP-21	18-SEP-21	R5586667
Surrogate: 1,4-Difluorobenzene	86.2		70-130	%	17-SEP-21	18-SEP-21	R5586667
Surrogate: 4-Bromofluorobenzene	90.5		70-130	%	17-SEP-21	18-SEP-21	R5586667
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	17-SEP-21	18-SEP-21	R5586796
Prep/Analysis Dates					17-SEP-21	18-SEP-21	R5586796
Surrogate: 2-Bromobenzotrifluoride	75.3		70-130	%	17-SEP-21	18-SEP-21	R5586796

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2639913-3 EX15-21-140							
Sampled By: CLIENT on 15-SEP-21							
Matrix: SOIL							
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		18-SEP-21	
F1-BTEX	<10		10	mg/kg		18-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		18-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		18-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		18-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		18-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	74.8		70-130	%	17-SEP-21	18-SEP-21	R5586671
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		18-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	1.80		0.50	mg/kg	18-SEP-21	18-SEP-21	R5586785
Miscellaneous Parameters							
Moisture	5.19		0.25	%		18-SEP-21	R5586609
L2639913-4 EX15-21-131							
Sampled By: CLIENT on 15-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	17-SEP-21	18-SEP-21	R5586667
Ethylbenzene	<0.015		0.015	mg/kg	17-SEP-21	18-SEP-21	R5586667
Toluene	0.018		0.014	mg/kg	17-SEP-21	18-SEP-21	R5586667
o-Xylene	<0.050		0.050	mg/kg	17-SEP-21	18-SEP-21	R5586667
m+p-Xylene	<0.050		0.050	mg/kg	17-SEP-21	18-SEP-21	R5586667
Surrogate: 1,4-Difluorobenzene	84.5		70-130	%	17-SEP-21	18-SEP-21	R5586667
Surrogate: 4-Bromofluorobenzene	83.6		70-130	%	17-SEP-21	18-SEP-21	R5586667
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	17-SEP-21	18-SEP-21	R5586796
Prep/Analysis Dates					17-SEP-21	18-SEP-21	R5586796
Surrogate: 2-Bromobenzotrifluoride	71.3		70-130	%	17-SEP-21	18-SEP-21	R5586796
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		18-SEP-21	
F1-BTEX	<10		10	mg/kg		18-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		18-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		18-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		18-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		18-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	79.1		70-130	%	17-SEP-21	18-SEP-21	R5586671
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		18-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	6.47		0.50	mg/kg	18-SEP-21	18-SEP-21	R5586785
Miscellaneous Parameters							
Moisture	4.85		0.25	%		18-SEP-21	R5586609
L2639913-5 EX15-21-132							
Sampled By: CLIENT on 15-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2639913-5 EX15-21-132							
Sampled By: CLIENT on 15-SEP-21							
Matrix: SOIL							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	17-SEP-21	18-SEP-21	R5586667
Ethylbenzene	<0.015		0.015	mg/kg	17-SEP-21	18-SEP-21	R5586667
Toluene	<0.014		0.014	mg/kg	17-SEP-21	18-SEP-21	R5586667
o-Xylene	<0.050		0.050	mg/kg	17-SEP-21	18-SEP-21	R5586667
m+p-Xylene	<0.050		0.050	mg/kg	17-SEP-21	18-SEP-21	R5586667
Surrogate: 1,4-Difluorobenzene	78.8		70-130	%	17-SEP-21	18-SEP-21	R5586667
Surrogate: 4-Bromofluorobenzene	75.8		70-130	%	17-SEP-21	18-SEP-21	R5586667
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	17-SEP-21	18-SEP-21	R5586796
Prep/Analysis Dates					17-SEP-21	18-SEP-21	R5586796
Surrogate: 2-Bromobenzotrifluoride	74.7		70-130	%	17-SEP-21	18-SEP-21	R5586796
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		18-SEP-21	
F1-BTEX	<10		10	mg/kg		18-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		18-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		18-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		18-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		18-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	77.8		70-130	%	17-SEP-21	18-SEP-21	R5586671
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		18-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	1.98		0.50	mg/kg	18-SEP-21	18-SEP-21	R5586785
Miscellaneous Parameters							
Moisture	4.43		0.25	%		18-SEP-21	R5586609
L2639913-6 EX15-21-134							
Sampled By: CLIENT on 15-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	17-SEP-21	18-SEP-21	R5586667
Ethylbenzene	<0.015		0.015	mg/kg	17-SEP-21	18-SEP-21	R5586667
Toluene	<0.014		0.014	mg/kg	17-SEP-21	18-SEP-21	R5586667
o-Xylene	<0.050		0.050	mg/kg	17-SEP-21	18-SEP-21	R5586667
m+p-Xylene	<0.050		0.050	mg/kg	17-SEP-21	18-SEP-21	R5586667
Surrogate: 1,4-Difluorobenzene	82.3		70-130	%	17-SEP-21	18-SEP-21	R5586667
Surrogate: 4-Bromofluorobenzene	80.5		70-130	%	17-SEP-21	18-SEP-21	R5586667
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	17-SEP-21	18-SEP-21	R5586796
Prep/Analysis Dates					17-SEP-21	18-SEP-21	R5586796
Surrogate: 2-Bromobenzotrifluoride	71.7		70-130	%	17-SEP-21	18-SEP-21	R5586796
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		18-SEP-21	
F1-BTEX	<10		10	mg/kg		18-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		18-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		18-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		18-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		18-SEP-21	
F1(C6-C10)							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2639913-6 EX15-21-134							
Sampled By: CLIENT on 15-SEP-21							
Matrix: SOIL							
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	79.2		70-130	%	17-SEP-21	18-SEP-21	R5586671
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		18-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	3.33		0.50	mg/kg	18-SEP-21	18-SEP-21	R5586785
Miscellaneous Parameters							
Moisture	5.84		0.25	%		18-SEP-21	R5586609
L2639913-7 EX15-21-137							
Sampled By: CLIENT on 15-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	17-SEP-21	18-SEP-21	R5586667
Ethylbenzene	<0.015		0.015	mg/kg	17-SEP-21	18-SEP-21	R5586667
Toluene	<0.014		0.014	mg/kg	17-SEP-21	18-SEP-21	R5586667
o-Xylene	<0.050		0.050	mg/kg	17-SEP-21	18-SEP-21	R5586667
m+p-Xylene	<0.050		0.050	mg/kg	17-SEP-21	18-SEP-21	R5586667
Surrogate: 1,4-Difluorobenzene	92.7		70-130	%	17-SEP-21	18-SEP-21	R5586667
Surrogate: 4-Bromofluorobenzene	83.5		70-130	%	17-SEP-21	18-SEP-21	R5586667
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	17-SEP-21	18-SEP-21	R5586796
Prep/Analysis Dates					17-SEP-21	18-SEP-21	R5586796
Surrogate: 2-Bromobenzotrifluoride	87.6		70-130	%	17-SEP-21	18-SEP-21	R5586796
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		18-SEP-21	
F1-BTEX	<10		10	mg/kg		18-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		18-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		18-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		18-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		18-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	79.3		70-130	%	17-SEP-21	18-SEP-21	R5586671
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		18-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	2.59		0.50	mg/kg	18-SEP-21	18-SEP-21	R5586785
Miscellaneous Parameters							
Moisture	5.51		0.25	%		18-SEP-21	R5586609
L2639913-8 EX15-21-131D							
Sampled By: CLIENT on 15-SEP-21							
Matrix: SOIL							
BTEX + F1 TO F4							
BTEX and Styrene							
Benzene	<0.0050		0.0050	mg/kg	17-SEP-21	18-SEP-21	R5586667
Ethylbenzene	<0.015		0.015	mg/kg	17-SEP-21	18-SEP-21	R5586667
Toluene	<0.014		0.014	mg/kg	17-SEP-21	18-SEP-21	R5586667
o-Xylene	<0.050		0.050	mg/kg	17-SEP-21	18-SEP-21	R5586667
m+p-Xylene	<0.050		0.050	mg/kg	17-SEP-21	18-SEP-21	R5586667
Surrogate: 1,4-Difluorobenzene	88.3		70-130	%	17-SEP-21	18-SEP-21	R5586667

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2639913-8 EX15-21-131D							
Sampled By: CLIENT on 15-SEP-21							
Matrix: SOIL							
BTEX and Styrene							
Surrogate: 4-Bromofluorobenzene	87.6		70-130	%	17-SEP-21	18-SEP-21	R5586667
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	17-SEP-21	18-SEP-21	R5586796
Prep/Analysis Dates					17-SEP-21	18-SEP-21	R5586796
Surrogate: 2-Bromobenzotrifluoride	70.7		70-130	%	17-SEP-21	18-SEP-21	R5586796
CCME Total Hydrocarbons							
F1 (C6-C10)	<10		10	mg/kg		18-SEP-21	
F1-BTEX	<10		10	mg/kg		18-SEP-21	
F2 (C10-C16)	<25		25	mg/kg		18-SEP-21	
F3 (C16-C34)	<50		50	mg/kg		18-SEP-21	
F4 (C34-C50)	<50		50	mg/kg		18-SEP-21	
Total Hydrocarbons (C6-C50)	<50		50	mg/kg		18-SEP-21	
F1(C6-C10)							
Surrogate: 3,4-Dichlorotoluene	80.1		70-130	%	17-SEP-21	18-SEP-21	R5586671
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		18-SEP-21	
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	5.30		0.50	mg/kg	18-SEP-21	18-SEP-21	R5586785
Miscellaneous Parameters							
Moisture	5.26		0.25	%		18-SEP-21	R5586609

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BTXS-MEOH-HS-MS-CL	Soil	BTEX and Styrene	EPA 8260C/5021A

The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. Target compound concentrations are measured using mass spectrometry detection.

F1-4-CALC-CL	Soil	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-MEOH-HS-FID-CL	Soil	F1(C6-C10)	CWS PHC Tier 1

The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. The F1 fraction concentration is measured using flame ionization detection.

F2-4-TMB-H/A-FID-CL	Soil	CCME F2-4 Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

This analysis is carried out in accordance with the "Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method, Canadian Council of Ministers of the Environment, December 2001." For C10 to C50 hydrocarbons (F2, F3, F4) and gravimetric heavy hydrocarbons (F4G-sg), a subsample of the sediment/soil is extracted with 1:1 hexane:acetone using a rotary extractor. The extract undergoes a silica-gel clean-up to remove polar compounds. F2, F3 & F4 are analyzed by on-column GC/FID, and F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where F4 (C34-C50) and F4G-sg results are reported for a sample, the larger of the reported values is used for comparison against the relevant CCME standard for F4.
7. The gravimetric heavy hydrocarbon results (F4G-sg), cannot be added to the C6 to C50 hydrocarbon results.
8. This method is validated for use.
9. Data from analysis of quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram.

MET-200.2-CCMS-ED	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020A (mod)

Soil/sediment is dried, disaggregated, and sieved (2 mm). Strong Acid Leachable Metals in the <2mm fraction are solubilized by heated digestion with nitric and hydrochloric acids. Instrumental analysis is by Collision / Reaction Cell ICPMS.

Limitations: This method is intended to liberate environmentally available metals. Silicate minerals are not solubilized. Some metals may be only partially recovered (matrix dependent), including Al, Ba, Be, Cr, S, Sr, Ti, Tl, V, W, and Zr. Elemental Sulfur may be poorly recovered by this method. Volatile forms of sulfur (e.g. sulfide, H2S) may be excluded if lost during sampling, storage, or digestion.

MOISTURE-CL	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)

This analysis is carried out gravimetrically by drying the sample at 105 C

XYLENES-SUM-CALC-CL	Soil	Sum of Xylene Isomer Concentrations	CALCULATED RESULT

Total xylenes represents the sum of o-xylene and m&p-xylene.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
ED	ALS ENVIRONMENTAL - EDMONTON, ALBERTA, CANADA
CL	ALS ENVIRONMENTAL - CALGARY, ALBERTA, CANADA

Chain of Custody Numbers:

20-904460

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L2639913 Report Date: 18-SEP-21

Client: GOLDER ASSOCIATES LTD
76 Richmond Street Suite 330
Toronto ON M5C 1P1
Contact: Karyn Lewis

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTXS-MEOH-HS-MS-CL	**Soil**							
Batch R5586667								
WG3619882-3 DUP		**L2639913-2**						
Benzene		<0.0050	<0.0050	RPD-NA	mg/kg	N/A	30	18-SEP-21
Ethylbenzene		<0.015	<0.015	RPD-NA	mg/kg	N/A	30	18-SEP-21
Toluene		0.022	0.024		mg/kg	8.2	30	18-SEP-21
o-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	18-SEP-21
m+p-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	18-SEP-21
WG3619882-2 LCS								
Benzene			121.6		%		70-130	18-SEP-21
Ethylbenzene			108.0		%		70-130	18-SEP-21
Toluene			100.4		%		70-130	18-SEP-21
o-Xylene			107.9		%		70-130	18-SEP-21
m+p-Xylene			124.2		%		70-130	18-SEP-21
WG3619882-1 MB								
Benzene			<0.0050		mg/kg		0.005	18-SEP-21
Ethylbenzene			<0.015		mg/kg		0.015	18-SEP-21
Toluene			<0.014		mg/kg		0.014	18-SEP-21
o-Xylene			<0.050		mg/kg		0.05	18-SEP-21
m+p-Xylene			<0.050		mg/kg		0.05	18-SEP-21
Surrogate: 1,4-Difluorobenzene			81.0		%		70-130	18-SEP-21
Surrogate: 4-Bromofluorobenzene			77.9		%		70-130	18-SEP-21
F1-MEOH-HS-FID-CL	**Soil**							
Batch R5586671								
WG3619882-3 DUP		**L2639913-2**						
F1(C6-C10)		<10	<10	RPD-NA	mg/kg	N/A	30	18-SEP-21
WG3619882-2 LCS								
F1(C6-C10)			97.2		%		70-130	18-SEP-21
WG3619882-1 MB								
F1(C6-C10)			<10		mg/kg		10	18-SEP-21
Surrogate: 3,4-Dichlorotoluene			82.3		%		70-130	18-SEP-21
F2-4-TMB-H/A-FID-CL	**Soil**							
Batch R5586796								
WG3619877-4 DUP		**L2639913-2**						
F2: (C10-C16)		<25	<25	RPD-NA	mg/kg	N/A	40	18-SEP-21
F3: (C16-C34)		77	<50	RPD-NA	mg/kg	N/A	40	18-SEP-21
F4: (C34-C50)		<50	<50	RPD-NA	mg/kg	N/A	40	18-SEP-21
WG3619877-3 IRM		**ALS PHC3 RM**						

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-4-TMB-H/A-FID-CL	**Soil**							
Batch R5586796								
WG3619877-3 IRM		**ALS PHC3 RM**						
F2: (C10-C16)			105.3		%		70-130	18-SEP-21
F3: (C16-C34)			106.6		%		70-130	18-SEP-21
F4: (C34-C50)			113.8		%		70-130	18-SEP-21
WG3619877-2 LCS								
F2: (C10-C16)			82.4		%		70-130	18-SEP-21
F3: (C16-C34)			106.1		%		70-130	18-SEP-21
F4: (C34-C50)			97.0		%		70-130	18-SEP-21
WG3619877-1 MB								
F2: (C10-C16)			<25		mg/kg		25	18-SEP-21
F3: (C16-C34)			<50		mg/kg		50	18-SEP-21
F4: (C34-C50)			<50		mg/kg		50	18-SEP-21
Surrogate: 2-Bromobenzotrifluoride			94.3		%		70-130	18-SEP-21
MET-200.2-CCMS-ED	**Soil**							
Batch R5586785								
WG3620031-3 CRM		**SCP_SS-2_SOIL**						
Lead (Pb)			94.6		%		70-130	18-SEP-21
WG3620031-4 DUP		**L2639913-1**						
Lead (Pb)		40.7	39.3		mg/kg	3.4	40	18-SEP-21
WG3620031-2 LCS								
Lead (Pb)			94.8		%		80-120	18-SEP-21
WG3620031-1 MB								
Lead (Pb)			<0.50		mg/kg		0.5	18-SEP-21
MOISTURE-CL	**Soil**							
Batch R5586609								
WG3619880-3 DUP		**L2639913-2**						
Moisture		5.64	5.43		%	3.8	20	18-SEP-21
WG3619880-2 LCS								
Moisture			98.3		%		90-110	18-SEP-21
WG3619880-1 MB								
Moisture			<0.25		%		0.25	18-SEP-21

Quality Control Report

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

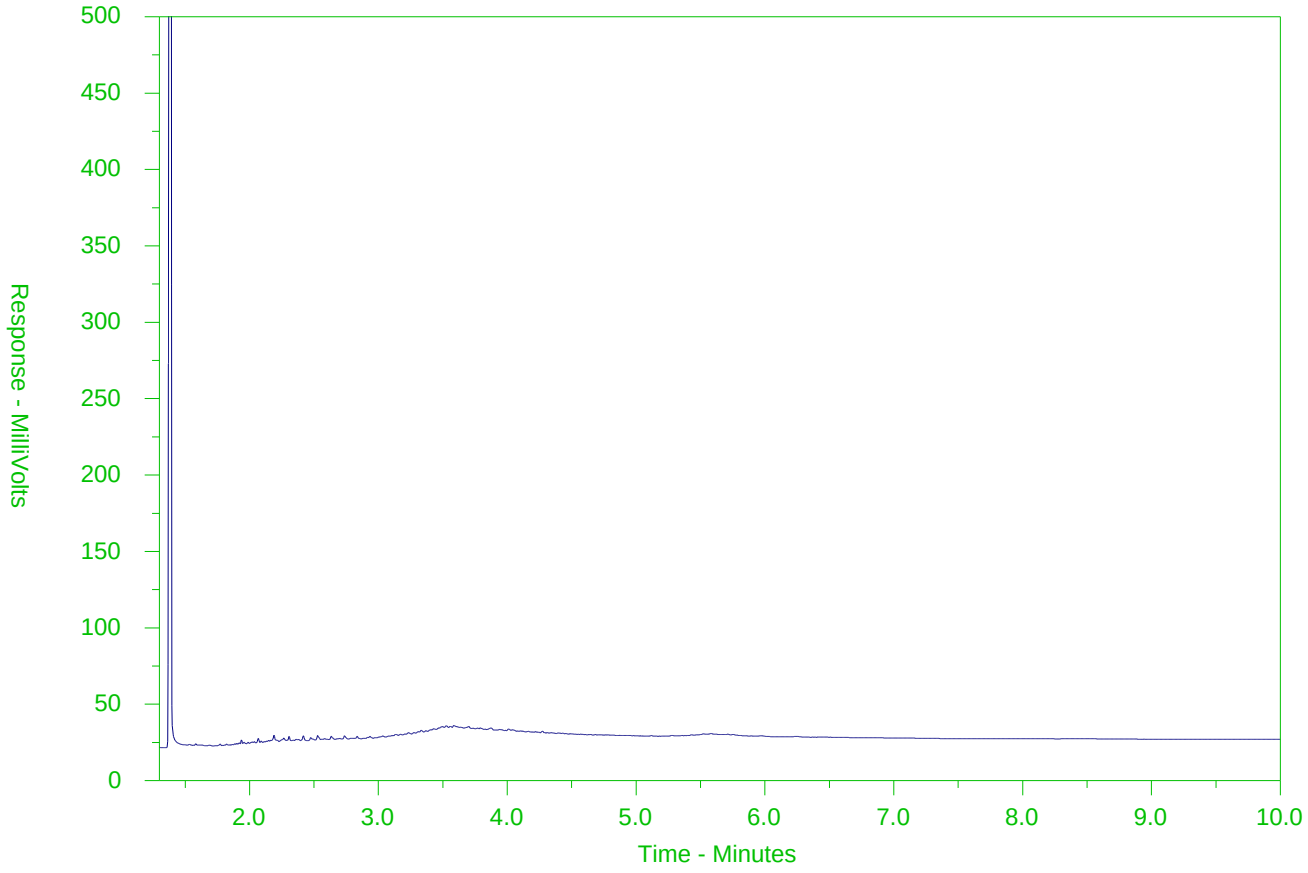
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2639913-2
Client Sample ID: EX15-21-139



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C 346°F	287°C 549°F	481°C 898°F	575°C 1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

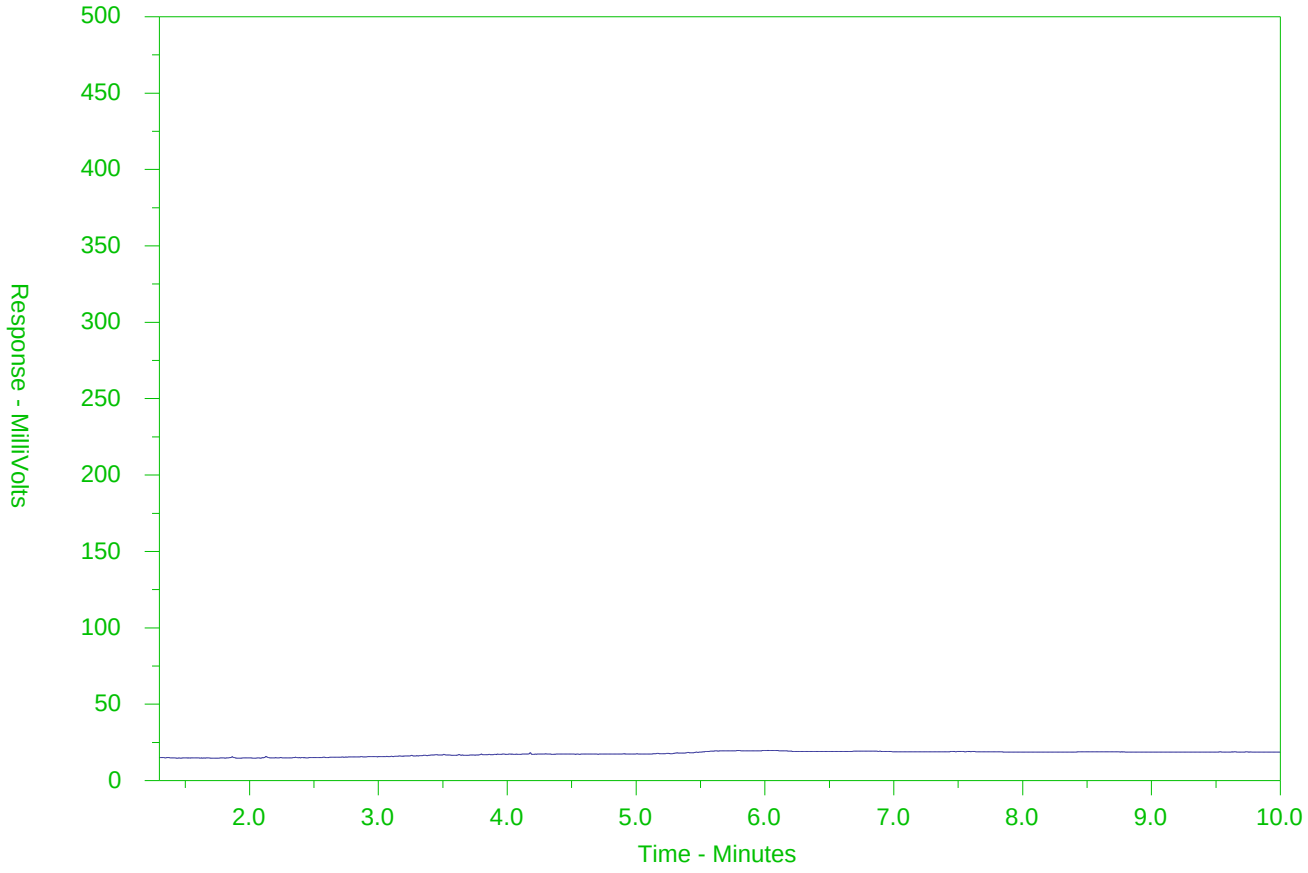
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2639913-3
Client Sample ID: EX15-21-140



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

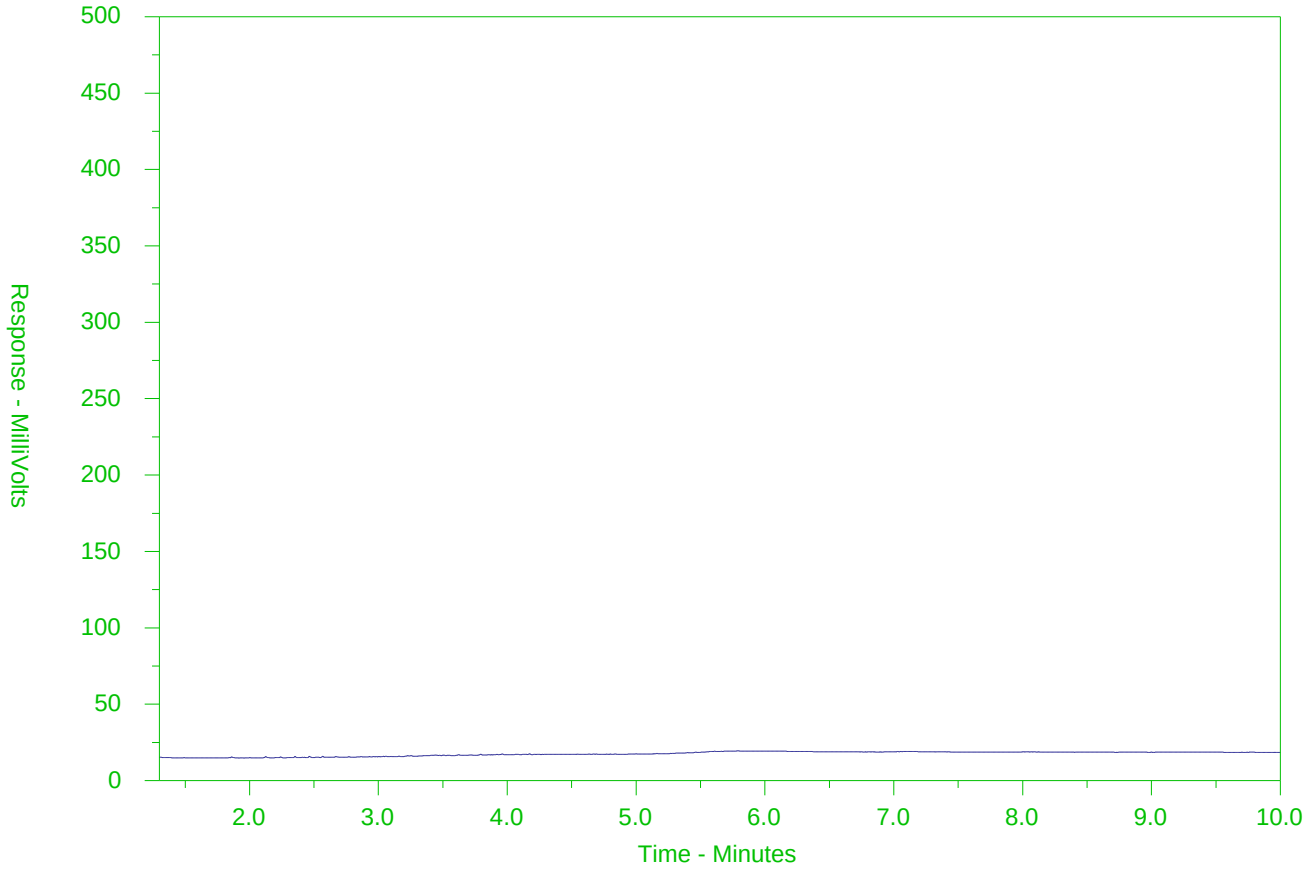
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2639913-4
Client Sample ID: EX15-21-131



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

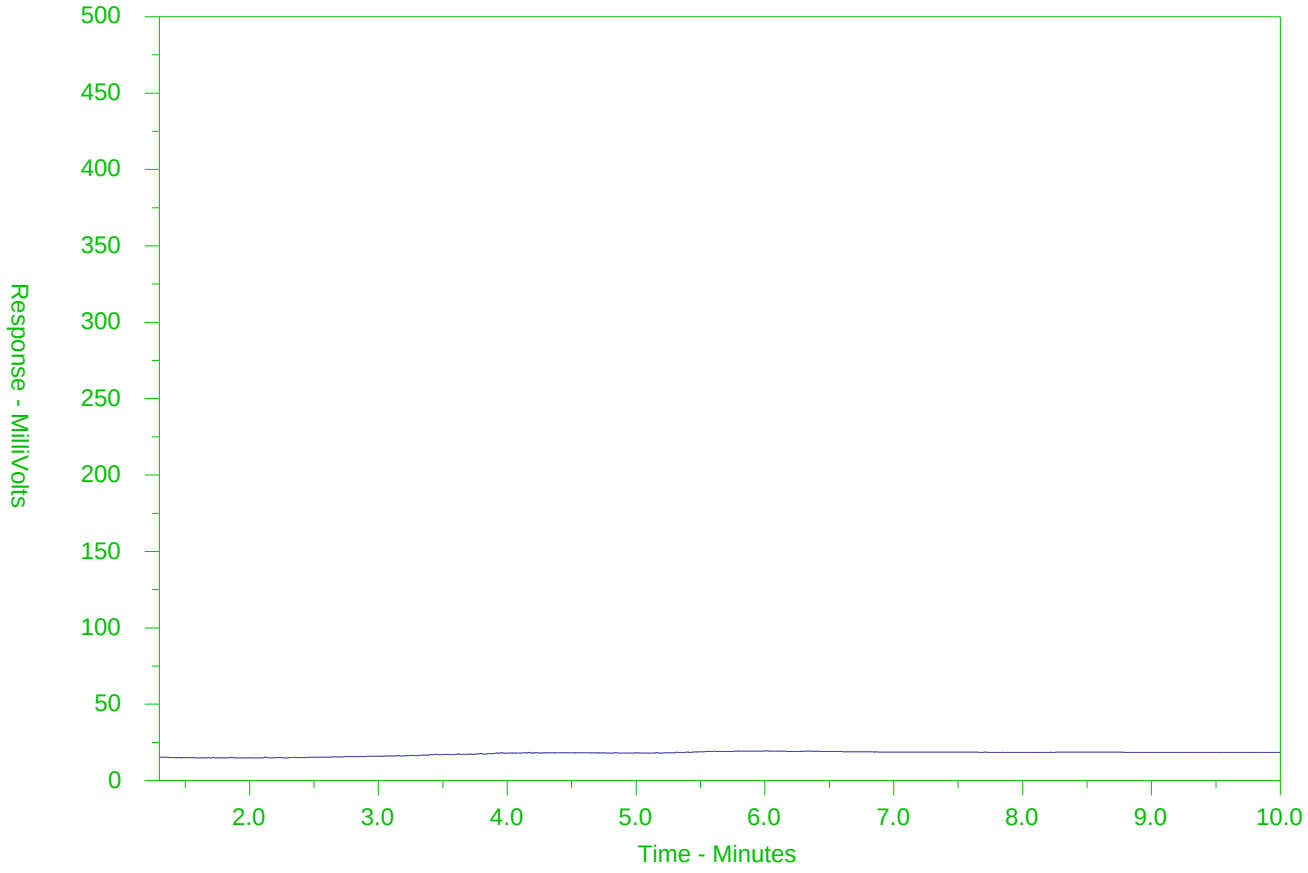
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2639913-5
Client Sample ID: EX15-21-132



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C 346°F	287°C 549°F	481°C 898°F	575°C 1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

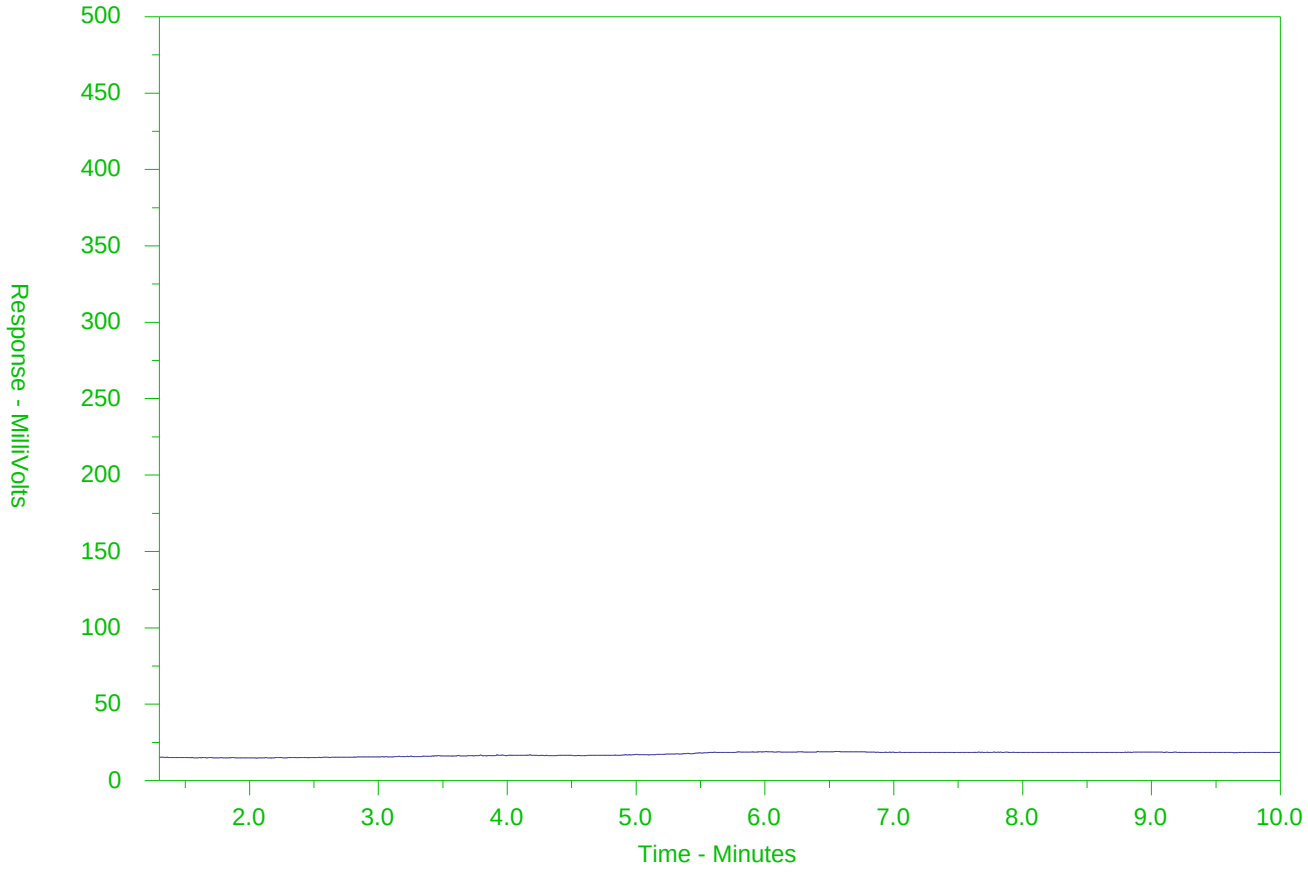
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2639913-6
Client Sample ID: EX15-21-134



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

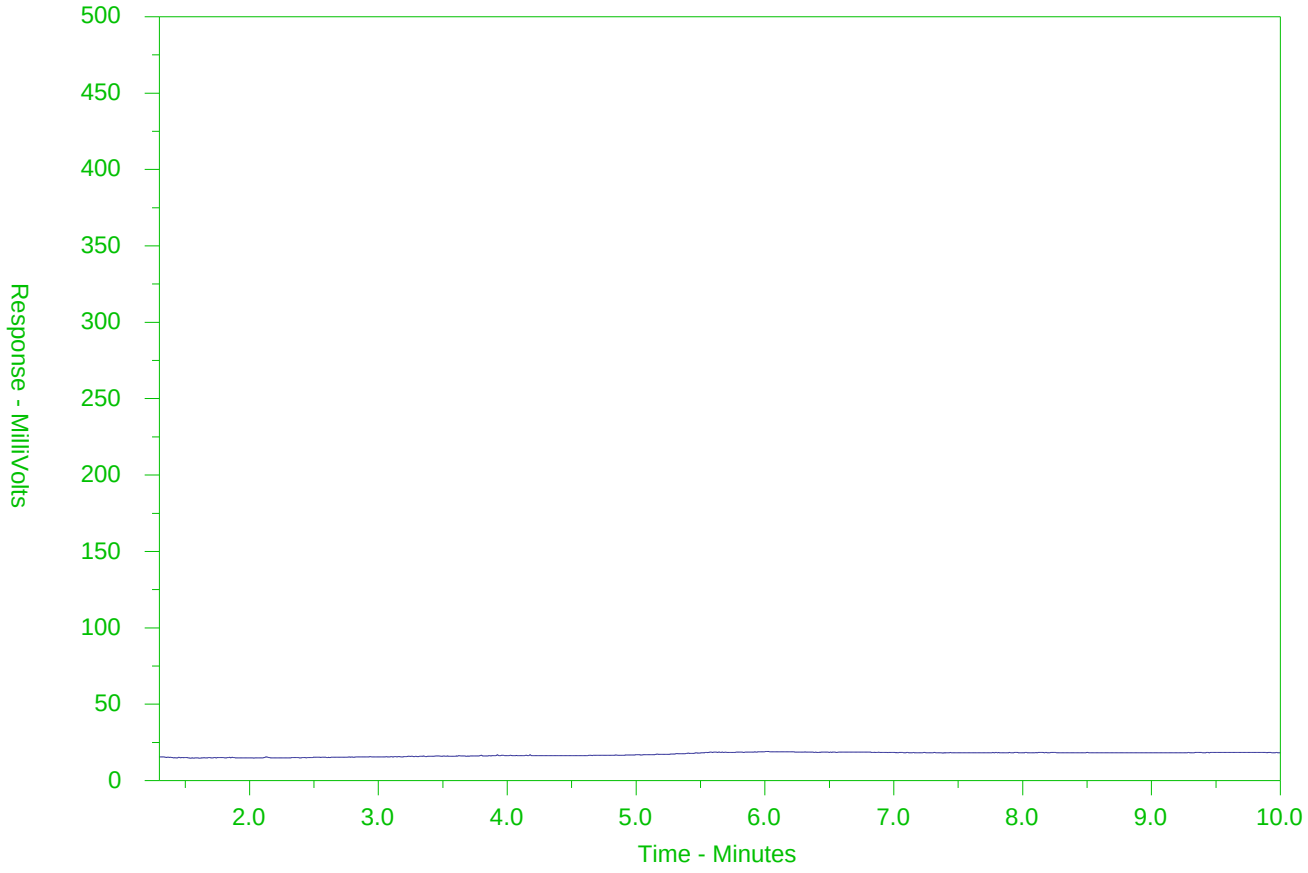
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2639913-7
Client Sample ID: EX15-21-137



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C 346°F	287°C 549°F	481°C 898°F	575°C 1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

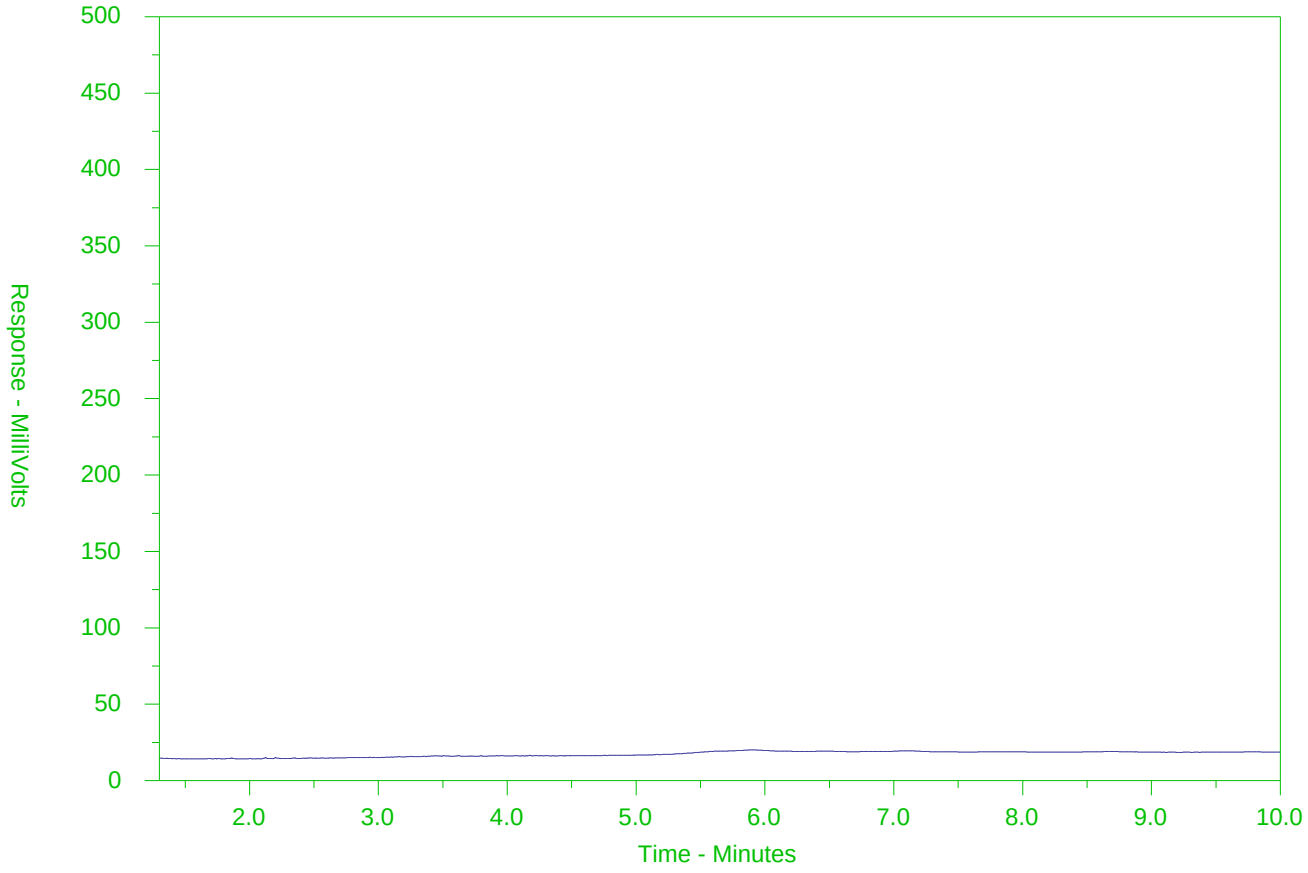
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2639913-8
Client Sample ID: EX15-21-131D



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

Chain of Custody (COC) / Analytical Request Form

COC Number: 20 - 904460

Page 1 of 1

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Report To	Contact and company name below will appear on the final report
Company:	Lupin Mines Inc.
Contact:	Karyn Lewis
Phone:	
	Company address below will appear on the final report
Street:	76 Richmond Street Suite 330
City/Province:	Toronto, ON.
Postal Code:	M5C 1P1
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	K.lewis@mandalayresources.com

Reports / Recipients	
Select Report Format:	☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)
Merge QC/QCI Reports with COA	☑ YES ☐ NO ☐ N/A
☐ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	Klewis@mandalayresources.com
Email 2	pamela_gascon@golder.com
Email 3	jmusijowski@golder.com

Invoice Recipients	
Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	
Email 2	

Project Information	
ALS Account # / Quote #:	Q80711
Job #:	B 20446521
PO / AFE:	
LSD:	Lupin Mine
ALS Lab Work Order # (ALS use only):	L2639913

Oil and Gas Required Fields (client use)		
AFE/Cost Center:	PO#	
Major/Minor Code:	Routing Code:	
Requisitioner:		
Location:		
ALS Contact:	Sampler:	R. Boyce

Turnaround Time (TAT) Requested

- ☐ Routine [R] if received by 3pm M-F - no surcharges apply
- ☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum
- ☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum
- ☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum
- ☒ 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum
- ☐ Same day [E2] if received by 10am M-S - 200% rush surcharge. Additional fees may apply to rush requests on weekends, statutory holidays and non-routine tests

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm am/pm

For all tests with rush TATs requested, please contact your AM to confirm availability.

AFFIX ALS BARCODE LABEL HERE (ALS use only)

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	lead	BTEX, F1-F2	SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	EX15-02	15-Sep-21		Soil	1	X				
	EX15-21-139	"		"	5	X	X			
	EX15-21-140	"		"	5	X	X			
	EX15-21-131	"		"	4	X	X			
	EX15-21-132	"		"	4	X	X			
	EX15-21-134	"		"	4	X	X			
	EX15-21-137	"		"	4	X	X			
	EX15-21-1310	"		"	4	X	X			

L2639913-COFC

Drinking Water (DW) Samples[1] (client use)	Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)
Are samples taken from a Regulated DW System? ☐ YES ☐ NO	
Are samples for human consumption/ use? ☐ YES ☐ NO	

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☐ NONE ☑ ICE ☐ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED

Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO

Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
1.3							

SHIPMENT RELEASE (client use)		
Released by: Rebecca Boyce RLB	Date: Sept 15/21	Time: 11:00

INITIAL SHIPMENT RECEPTION (ALS use only)		
Received by:	Date: Sep 15-21	Time: 1610

FINAL SHIPMENT RECEPTION (ALS use only)		
Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

ALS 2020 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

GENERAL TERMS AND CONDITIONS:

These terms and conditions are incorporated in and form part of the Agreement between ALS Group's Environmental Division and the party named in the Offer (the "Client").

1. Definitions. Capitalized Terms not defined in these Terms and Conditions have the definitions set out in the other Agreement documents.
2. The Services. ALS will provide the Services to the Client as described in the Offer and in any chain of custody form provided with any sample. Unless otherwise agreed, ALS may elect to re-allocate testing, without prior notice, to other ALS Canada laboratories with equivalent services and applicable accreditations and licenses, if required to prevent hold time or due date exceedance due to unanticipated over-capacity situations.
3. Prices. ALS may review and change all prices, fees, surcharges or other charges set out in the Agreement if there are changes to ALS's cost beyond ALS's control, including changes in legislative requirements, Client variations of sample numbers and Client requests for changes to standard reporting requirements. Notwithstanding Condition 3, all quotations expire after three years.
4. Payment Terms. The Client shall pay ALS within 30 days of the invoice date OAC. ALS may, for reasonable business reasons, require the Client to arrange for payment in advance.
5. Quotation Numbers. The Client shall provide the quotation number to ALS (where applicable) to ensure correct pricing.
6. Taxes. Applicable taxes are not included in prices. Applicable surcharges and additional fees will be added at the time of invoicing.
7. Quality Control. ALS has an extensive QA/QC program. Clients' samples are analyzed using approved, referenced procedures followed by thorough data validation prior to reporting of the analytical results.
8. Test Results. Results are obtained from analytical measurements that are subject to inherent variability. Measurement results reflect characteristics of submitted test samples at time of analysis. The Client is responsible for informing itself on the limitation of test results and acknowledges that test results are not guaranteed. When statements of conformity are requested on test reports (e.g. within Criteria Reports), measurement uncertainty is not applied to test results prior to the evaluation.
9. Standard of Care. ALS will use reasonable care and diligence as required by the laws of the province or territory where the sample is tested.
10. Storage. Where possible, ALS will store; soil and water samples for 45 days from date of receipt, tissue/biota samples for 6 months from date of receipt, air samples or re-usable media for 14 days from date of receipt, and microbiological samples for 3 days from date of receipt.
11. Holds. If the Client requests a sample to be placed on hold, ALS will store the samples according to paragraph 10, after which ALS will invoice the Client and discard the sample. Each sample is subject to a minimum $5.00 hold fee. Longer hold periods are available upon request. See paragraph 12.
12. Archives. If the Client requests for a sample to be archived, ALS will invoice in advance and will store the sample for the period requested, after which ALS may discard the sample.
13. Legal Sample Handling Protocol. Legal sample handling protocol must be arranged before samples are collected. ALS charges a surcharge on the list price plus the hourly technologist or chemist rates for legal sample protocol. Additional charges will apply for samples that require storage by ALS.
14. Samples. The quality, condition, content, and source of samples stored and tested are not known to ALS except as declared and described on the chain of custody form completed and submitted by the Client and accompanying the sample.
15. Risk of Loss. ALS will use reasonable care to protect samples during storage, however all samples are stored at the Client's risk and the Client is responsible for obtaining appropriate insurance, if desired. The Client acknowledges that during the performance of the Services samples may be altered, lost, damaged, or destroyed and the Client releases ALS from any claim the Client may have for any loss or damage to the sample.
16. Environmental. The Client must comply with all applicable environment legislation, including labeling all hazardous samples to comply with GHS and TDG regulations, and must provide appropriate Safety Data that include the nature of the hazard and a contact name and phone number to call for information. The Client will indemnify ALS for all loss or damages, including any fine or cost of complying with an order of any government authority, resulting from the Client's breach of this paragraph.
17. Hazardous Materials Disposal. ALS may return, at the Client's cost, hazardous material to the Client for disposal.
18. Hazardous Materials Surcharge. ALS may apply an additional surcharge for handling of hazardous samples or samples with Naturally Occurring Radioactive Materials (NORM), H2S, cyanide, etc.
19. Sample Containers. ALS may ship sample containers to the Client's location by the most cost effective means using ALS preferred courier suppliers, within the specified project timeline.
20. Additional Charges. ALS may charge the Client (a) its cost for emergency bottle shipments and shipments to and from a remote site, and (b) where pickup and delivery services are provided, subject in each instance to a minimum charge of $25.00.
21. Holding Times. Samples and chain of custody forms should be submitted to ALS as soon as possible after sampling, with a minimum of half the analytical hold time remaining, unless prior arrangements are made.
22. Re-Tests. ALS reserves the right to re-test any samples that remain in its possession. Re-tests requested by the Client may be subject to charges.
23. Waiver. The Client is responsible for making any assessment regarding the suitability of the Services and the intended results for the Client's purposes and waives any claims against ALS it may have as a result of the interpretation of the results. The Client shall indemnify ALS for all claims made by any third party against ALS in respect of all losses however arising from the performance of the Services or the use of any report provided in the performance of the Services.
24. Limitation of Liability. In no event shall ALS be liable for any consequential, indirect, incidental, special, exemplary, or punitive damages, whether foreseeable or unforeseeable (including claims for loss of profits or revenue or losses caused by stoppage of other work or impairment of other assets), incurred by the Client arising out of breach or failure of express or implied warranty, breach of contract, breach of warranty, misrepresentation, negligence, strict liability in tort or otherwise. In any event, the liability of ALS to the Client shall be limited to the cost of testing the sample as requested in the chain of custody form under which the sample was originally deposited. For the purposes of this paragraph and paragraphs 8, 15, 16, 23 and 25, as applicable, "ALS" includes without limitations its directors, officers, employees and affiliates and the "Client" includes without limitation any third party that may have a claim against ALS through the Client.
25. Notice of Liability. Notwithstanding paragraph 24, ALS shall not be liable to the Client unless the Client provides notice in writing to ALS of such loss or damage, together with full particulars thereof, within 30 days of the Client's receipt of the report of the analysis of the sample giving rise to such liability. The provisions of this paragraph allocate the risk under the Agreement between the Client and ALS, and the fees to be paid by the Client to ALS reflect this allocation of risks and the limitations of liability in this Agreement.
26. Third Party Service Provider Indemnity. For testing not performed at ALS, and where the Client requires ALS to forward samples to a third party service provider, the Client indemnifies ALS against any breach of this Agreement, all liabilities or losses incurred in connection with the third party service provider, including but not limited to courier services, testing turn-around time, and any additional costs associated with such third party.
27. Third Party Service Provider Indemnity. If ALS is required to engage a third party service provider for whatever reason, the Client indemnifies ALS against any breach of this Agreement, liabilities, or losses incurred in connection with the third party service provider, including but not limited to courier services, testing turn-around time, and any additional costs associated with such third party.
28. Entire Agreement. The Agreement is the entire agreement between the parties and supersedes and takes precedence over any terms and conditions contained in any documentation provided by the Client. ALS's execution of any subsequent documentation from the Client only acknowledges receipt and not acceptance of any terms or conditions therein. If there is a conflict between these terms and conditions and any other Agreement document, these terms and conditions prevail.
29. Term. Providing the first batch of samples to which this tender refers is submitted within three months of the starting date of this quotation, the following prices, terms and conditions will remain firm until the closing date. This offer, and its terms and conditions will automatically lapse if the offer has not been accepted and samples not delivered to ALS by the Closing Date.
30. Termination. (a) Either party may terminate this Agreement for any reason by giving the other party thirty (30) days written notice (Notice Period). (b) If the Agreement is terminated pursuant to clause (a), then the Client must pay ALS for all Services performed up to the expiry of the Notice Period.

ATTACHMENT B

Field Communications

FIELD COMMUNICATION

Date: August 10, 2020 FC#: GOL-011

Project: Lupin Mine Closure

To: Karyn Lewis (Lupin Mines Inc.)

From: Steven Fiddler (Golder)

Copy: Sara Wilkins (Stantec)

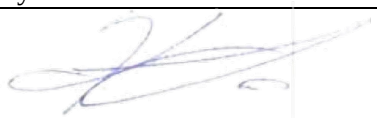
Arthur Cole, Ken Bocking, Dionne Filiatrault, Matthew Deitcher (Golder)

SUBJECT: Clearance of Arsenic Hotspot Contaminated Soil Excavations

DESCRIPTION:

Laboratory results have been received for the confirmatory soil samples collected from the arsenic hotspot excavations completed around historical test pits TP05-49, TP05-56, TP05-57, TP05-59, and TP05-79. Concentrations of total arsenic in all confirmatory soil samples were below the target concentration of 4,000 mg/kg, with the exception of the base sample collected from the excavation around TP05-79. However, as this excavation was completed to permafrost, further excavation is not possible. As a result, the excavations around TP05-49, TP05-56, TP05-57, TP05-59, and TP05-79 are complete.

- Attachments (Yes/No): No

	Steven Fiddler
Signature:	
Owner's Approval	Karyn Lewis
Signature:	

FIELD COMMUNICATION

Date: July 21, 2021 FC#: GOL-021

Project: Lupin Mine Closure

To: Karyn Lewis (Lupin Mines Inc.)

From: Steven Fiddler (Golder)

Copy: Jim McKinley (Stantec)

Mike Blusson / Darren Kress (JDS)

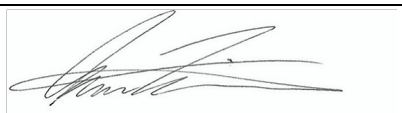
Ken Bocking, Dionne Filiatrault, Steven Fiddler, Erin Salo (Golder)

SUBJECT: Clearance of Excavation 8

DESCRIPTION:

Laboratory results have been received for the confirmatory soil samples collected from Excavation 8, completed around historical test pit TP17-14. Concentrations of benzene, toluene, ethylbenzene, xylenes, and petroleum hydrocarbon fractions F1 through F4 were below the applicable Nunavut Environmental Guidelines for Contaminated Site Remediation. As a result, Excavation 8 around TP17-14 is complete.

Attachments (Yes/No): No

	Steven Fiddler
Signature:	
Owner's Approval	Karyn Lewis
Signature:	

FIELD COMMUNICATION

Date: July 28, 2021 FC#: GOL-022

Project: Lupin Mine Closure

To: Karyn Lewis (Lupin Mines Inc.)

From: Steven Fiddler (Golder)

Copy: Jim McKinley (Stantec)

Mike Blusson / Darren Kress (JDS)

Ken Bocking, Dionne Filiatrault, Steven Fiddler, Erin Salo (Golder)

SUBJECT: Clearance of Excavations 10 and 12

DESCRIPTION:

Laboratory results have been received for the confirmatory soil samples collected from Excavation 10, completed around historical test pit TP17-15, and Excavation 12, completed around historical test pits TP17-35 and TP05-12. Concentrations of benzene, toluene, ethylbenzene, xylenes, and petroleum hydrocarbon fractions F1 through F4 were below the applicable Nunavut Environmental Guidelines for Contaminated Site Remediation. As a result, Excavations 10 and 12 around historical test pits TP17-15, TP17-35, and TP05-12 are complete.

Attachments (Yes/No): No

	Steven Fiddler
Signature:	
Owner's Approval	Karyn Lewis
Signature:	

FIELD COMMUNICATION

Date: July 30, 2021 FC#: GOL-023

Project: Lupin Mine Closure

To: Karyn Lewis (Lupin Mines Inc.)

From: Pamela Gascon (Golder)

Copy: Jim McKinley (Stantec)

Mike Blusson / Darren Kress (JDS)

Ken Bocking, Dionne Filiatrault, Steven Fiddler, Erin Salo (Golder)

SUBJECT: Soil Sampling Protocol – Main Tank Farm

DESCRIPTION:

The purpose of this communication is to provide the protocol to complete soil sampling below the existing liner of the main tank farm. It is understood that the tank farm is currently in-use with decommissioning activities planned for August/September.

The following procedure will be required:

1. A total of six (6) sample stations will be established. Approximate sample locations are presented on the following figure. Sample locations will be adjusted in field based on accessibility and existing infrastructure. Sample locations should provide geographic coverage and avoid any above ground piping or utilities. The sample stations should be established in areas where visual staining may be present (i.e., petroleum hydrocarbon releases on the surface of the liner).

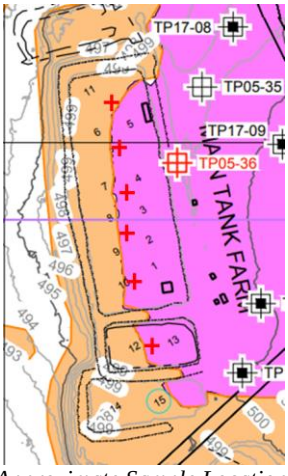


Figure A: Approximate Sample Locations

2. Prior to sample collection, the overlying soil/debris will be cleared and the liner will be exposed. Any hydrocarbon on the liner should be carefully cleaned up to avoid cross-contaminating the soil samples. A small and neat sample portal (less than 70 millimeters in diameter) will be cut into the liner at each sample location. Tools that rip or tear the liner should be avoided. The sample portal should be cut in such a way that the liner can be repaired after sample collection is complete.
3. Following the establishment of the sample portal, a hand auger will be used to collect soil samples beneath the existing liner. The expected stratigraphy includes bedding sand, underlain

FIELD COMMUNICATION

by granular fill. Both the bedding sand and granular fill should be sampled at each station. The maximum depth of soil sampling is expected to be 0.6 meters below ground surface. It is possible that a geotextile fabric may also be encountered below the bedding sand. If encountered, the geotextile should be punctured and the soil below sampled. Soil samples will be screened in the field and submitted for laboratory analysis of benzene, toluene, ethylbenzene, and xylene and petroleum hydrocarbon fractions F1 to F4.

4. Following sample collection, the sample portal will be repaired following the "Band-Aid" approach outlined in *First Aid Geomembrane Repair Best Practices and Recommendations* dated December 3, 2020 and prepared by Glenn Eckert, Manager, Engineering Business Management Group, Layfield Group Ltd. (Technical Services Knowledge Center | Layfield Geosynthetics - Layfield (layfieldgroup.com)).

   A summary of this approach is provided below:
   - Isolate, clean and dry the sample portal plus an additional 3 to 4 inches surrounding the portal.
   - Place the geomembrane patch. The patch can be obtained from a non-critical section of the liner.
   - To place the geomembrane patch, apply double-sided adhesion tape and press it down over the sample portal. Following placement, a strip of one-side geomembrane repair tape will be placed over the patch seams.
   - Once the patch is secured, place 6 inches of sand or gravel over the patch and nominally compact.

All field activities will be documented with a photographic log. Pictures of the patch at each sample location will also be collected.

Attachments (Yes/No): No

	Pamela Gascon
Signature:	
Owner's Approval	Karyn Lewis
Signature:	

FIELD COMMUNICATION

Date: August 3, 2021 FC#: GOL-024

Project: Lupin Mine Closure

To: Karyn Lewis (Lupin Mines Inc.)

From: Steven Fiddler (Golder)

Copy: Jim McKinley (Stantec)

Mike Blusson / Darren Kress (JDS)

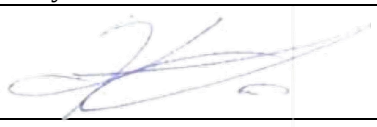
Ken Bocking, Dionne Filiatrault, Steven Fiddler, Erin Salo (Golder)

SUBJECT: Clearance of Excavations 7 and 13

DESCRIPTION:

Laboratory results have been received for the confirmatory soil samples collected from Excavation 7, completed around historical test pit TP17-13, and Excavation 13, completed around historical test pit TP17-32. Concentrations of benzene, toluene, ethylbenzene, xylenes, and petroleum hydrocarbon fractions F1 through F4 were below the applicable Nunavut Environmental Guidelines for Contaminated Site Remediation. As a result, Excavations 7 and 13 around historical test pits TP17-13 and TP17-32 are complete.

Attachments (Yes/No): No

	Pamela Gascon
Signature:	
Owner's Approval	Karyn Lewis
Signature:	

FIELD COMMUNICATION

Date: August 10, 2021 FC#: GOL-025

Project: Lupin Mine Closure

To: Karyn Lewis (Lupin Mines Inc.)

From: Steven Fiddler (Golder)

Copy: Jim McKinley (Stantec)
Mike Blusson / Darren Kress (JDS)
Ken Bocking, Dionne Filiatrault, Steven Fiddler, Erin Salo (Golder)

SUBJECT: Clearance of Excavation 16

DESCRIPTION:

Laboratory results have been received for the confirmatory soil samples collected from Excavation 16, completed around historical test pit TP05-80. Concentrations of benzene, toluene, ethylbenzene, xylenes, and petroleum hydrocarbon fractions F1 through F4 were below the applicable Nunavut Environmental Guidelines for Contaminated Site Remediation. As a result, Excavation 16 around historical test pit TP05-80 is complete.

Attachments (Yes/No): No

	Steven Fiddler
Signature:	
Owner's Approval	Karyn Lewis
Signature:	

FIELD COMMUNICATION

Date: August 31, 2021 FC#: GOL-028

Project: Lupin Mine Closure

To: Karyn Lewis (Lupin Mines Inc.)

From: Steven Fiddler (Golder)

Copy: Jim McKinley (Stantec)

Mike Blusson / Darren Kress (JDS)

Ken Bocking, Dionne Filiatrault, Steven Fiddler, Erin Salo (Golder)

SUBJECT: Clearance of Excavation 22

DESCRIPTION:

Laboratory results have been received for the confirmatory soil samples collected from Excavation 22, completed around historical test pit TP05-23. Concentrations of benzene, toluene, ethylbenzene, xylenes, and petroleum hydrocarbon fractions F1 through F4 were below the applicable Nunavut Environmental Guidelines for Contaminated Site Remediation. As a result, Excavation 22 around historical test pit TP05-23 is complete.

Attachments (Yes/No): No

	Steven Fiddler
Signature:	
Owner's Approval	Karyn Lewis
Signature:	

FIELD COMMUNICATION

Date: September 13, 2021 FC#: GOL-029

Project: Lupin Mine Closure

To: Karyn Lewis (Lupin Mines Inc.)

From: Pamela Gascon (Golder)

Copy: Jim McKinley (Stantec)

Mike Blusson / Darren Kress (JDS)

Ken Bocking, Dionne Filiatrault, Steven Fiddler, Erin Salo (Golder)

SUBJECT: Clearance of Excavations 9 and 20

DESCRIPTION:

Laboratory results have been received for the confirmatory soil samples collected from Excavation 9, completed around historical test pit TP17-17, and Excavation 20, completed around historical test pit TP17-22. Concentrations of benzene, toluene, ethylbenzene, xylenes, and petroleum hydrocarbon fractions F1 through F4 were below the applicable Nunavut Environmental Guidelines for Contaminated Site Remediation. As a result, Excavation 9 (around historical test pit TP17-17) and Excavation 20 (around historical test pit TP17-22) are complete.

Attachments (Yes/No): No

	Pamela Gascon
Signature:	
Owner's Approval	Karyn Lewis
Signature:	

FIELD COMMUNICATION

Date: September 13, 2021 FC#: GOL-031

Project: Lupin Mine Closure

To: Karyn Lewis (Lupin Mines Inc.)

From: Pamela Gascon (Golder)

Copy: Jim McKinley (Stantec)

Mike Blusson / Darren Kress (JDS)

Ken Bocking, Dionne Filiatrault, Steven Fiddler, Erin Salo (Golder)

SUBJECT: Clearance of Excavations 19 and 21

DESCRIPTION:

Laboratory results have been received for the confirmatory soil samples collected from Excavation 19, completed around historical test pit TP05-58, and Excavation 21, completed around historical test pit TP05-36. Concentrations of benzene, toluene, ethylbenzene, xylenes, and petroleum hydrocarbon fractions F1 through F4 were below the applicable Nunavut Environmental Guidelines for Contaminated Site Remediation. As a result, Excavation 19 (around historical test pit TP05-58) and Excavation 21 (around historical test pit TP05-36) are complete.

Attachments (Yes/No): No

	Pamela Gascon
Signature:	
Owner's Approval	Karyn Lewis
Signature:	

FIELD COMMUNICATION

Date: September 20, 2021 FC#: GOL-033

Project: Lupin Mine Closure

To: Karyn Lewis (Lupin Mines Inc.)

From: Pamela Gascon (Golder)

Copy: Jim McKinley (Stantec)
Mike Blusson / Darren Kress (JDS)
Ken Bocking, Dionne Filiatrault, Erin Salo (Golder)

SUBJECT: Clearance of Excavation 15

DESCRIPTION:

Laboratory results have been received for the confirmatory soil samples collected from Excavation 15 completed around historical test pits TP17-33, TP17-34, and TP05-14. Concentrations of benzene, toluene, ethylbenzene, xylenes, petroleum hydrocarbon fractions F1 through F4, and lead were below the applicable Nunavut Environmental Guidelines for Contaminated Site Remediation. As a result, Excavation 15 is complete.

Attachments (Yes/No): No

	Pamela Gascon
Signature:	
Owner's Approval	Karyn Lewis
Signature:	

FIELD COMMUNICATION

Date: October 5, 2021 FC#: GOL-036

Project: Lupin Mine Closure

To: Karyn Lewis (Lupin Mines Inc.)

From: Pamela Gascon (Golder)

Copy: Jim McKinley (Stantec)
Mike Blusson / Darren Kress (JDS)
Ken Bocking, Dionne Filiatrault, Erin Salo (Golder)

SUBJECT: Clearance of the Arsenic Area

DESCRIPTION:

Laboratory results have been received for the confirmatory soil samples collected from the Arsenic Area identified in 2021. The Arsenic Area is situated in the vicinity of former test pits TP05-56 to TP05-59. Concentrations of total arsenic were below the target concentration of 4,000 mg/kg. As a result, this excavation is complete.

Attachments (Yes/No): No

	Pamela Gascon
Signature:	
Owner's Approval	Karyn Lewis
Signature:	

ATTACHMENT C

Data Quality Review

GOLDER DATA QUALITY REVIEW CHECKLIST

Site Location: Lupin Mine

Sampling Date: August 1 and 2, 2020

Golder Project Number: 19136158

Laboratory: ALS - Edmonton

Lab Submission Number: L2484668

Was the Cooler Received at the lab under a sealed and intact custody seal?	n/a
Was proper chain of custody of the samples documented and kept?	Yes
Were sample temperatures acceptable when they reached lab?:	Yes
Were all samples analyzed and extracted within hold times?:	Yes
Has lab warranted all tests were in statistical control in CoA?:	Yes
Was sufficient sample provided for the requested analysis?	Yes
Has lab warranted all samples were analyzed with limited headspace present?:	Yes

Are All Laboratory QC Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Surrogate Recovery			X	All laboratory QC results are within
Method Blank Concentration	X			acceptance criteria.
Laboratory Duplicate RPD	X			
Matrix Spike Recovery			X	
Blank Spike Recovery	X			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	No field QC samples were collected.
Trip Blank Concentration			X	
Field Duplicate RPD			X	

Is data considered reliable (Yes/No/Suspect)?: Yes

If answer is "No" or "Suspect", describe and provide rationale:

Data Reviewed by (Print): Jenny Musijowski

Data Reviewed by (Signature): 

Date: August 10, 2020

GOLDER DATA QUALITY REVIEW CHECKLIST

Site Location: Lupin

Sampling Date: August 2, 3, 5, 6, 7, 8, 9 and 10, 2020

Golder Project Number: 19136158

Laboratory: ALS - Edmonton

Lab Submission Number: L2487835

Was the Cooler Received at the lab under a sealed and intact custody seal?	n/a
Was proper chain of custody of the samples documented and kept?	Yes
Were sample temperatures acceptable when they reached lab?:	Yes
Were all samples analyzed and extracted within hold times?:	Yes
Has lab warranted all tests were in statistical control in CoA?:	Yes
Was sufficient sample provided for the requested analysis?	Yes
Has lab warranted all samples were analyzed with limited headspace present?:	Yes

Are All Laboratory QC Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Surrogate Recovery		X		All laboratory QC results are within
Method Blank Concentration	X			acceptance criteria, please see QA/QC
Laboratory Duplicate RPD	X			appendix.
Matrix Spike Recovery	X			
Blank Spike Recovery	X			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	No field QC samples were collected.
Trip Blank Concentration			X	
Field Duplicate RPD			X	

Is data considered reliable (Yes/No/Suspect)?: Yes

If answer is "No" or "Suspect", describe and provide rationale:

Data Reviewed by (Print): Jenny Musijowski

Data Reviewed by (Signature): 

Date: August 20, 2020

GOLDER DATA QUALITY REVIEW CHECKLIST

Site Location: Lupin Mines

Sampling Date: August 16, 2020

Golder Project Number: 19136158

Laboratory: ALS - Edmonton

Lab Submission Number: L2491764

Was the Cooler Received at the lab under a sealed and intact custody seal?	n/a
Was proper chain of custody of the samples documented and kept?	Yes
Were sample temperatures acceptable when they reached lab?:	Yes
Were all samples analyzed and extracted within hold times?:	Yes
Has lab warranted all tests were in statistical control in CoA?:	Yes
Was sufficient sample provided for the requested analysis?	Yes
Has lab warranted all samples were analyzed with limited headspace present?:	Yes

Are All Laboratory QC Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Surrogate Recovery		X		Surrogate recovery for 4-Bromofluorobenzene (60.9%)
Method Blank Concentration	X			below the acceptance criteria (70-130%).
Laboratory Duplicate RPD	X			All remaining laboratory QC results are within
Matrix Spike Recovery			X	acceptance criteria.
Blank Spike Recovery	X			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	All field QC samples are within
Trip Blank Concentration			X	alert limits.
Field Duplicate RPD	X			

Is data considered reliable (Yes/No/Suspect)?: Yes

If answer is "No" or "Suspect", describe and provide rationale:

Data Reviewed by (Print): Jenny Musijowski

Data Reviewed by (Signature): 

Date: September 18, 2020

GOLDER DATA QUALITY REVIEW CHECKLIST

Site Location: Lupin Mines

Sampling Date: August 17, 2020

Golder Project Number: 19136158

Laboratory: ALS - Edmonton

Lab Submission Number: L2491777

Was the Cooler Received at the lab under a sealed and intact custody seal?	n/a
Was proper chain of custody of the samples documented and kept?	Yes
Were sample temperatures acceptable when they reached lab?:	Yes
Were all samples analyzed and extracted within hold times?:	Yes
Has lab warranted all tests were in statistical control in CoA?:	Yes
Was sufficient sample provided for the requested analysis?	Yes
Has lab warranted all samples were analyzed with limited headspace present?:	Yes

Are All Laboratory QC Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Surrogate Recovery	X			All laboratory QC results are within
Method Blank Concentration	X			acceptance criteria.
Laboratory Duplicate RPD	X			
Matrix Spike Recovery	X			
Blank Spike Recovery	X			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	No field QC samples were collected.
Trip Blank Concentration			X	
Field Duplicate RPD			X	

Is data considered reliable (Yes/No/Suspect)?: Yes

If answer is "No" or "Suspect", describe and provide rationale:

Data Reviewed by (Print): Jenny Musijowski

Data Reviewed by (Signature): 

Date: August 25, 2020

GOLDER DATA QUALITY REVIEW CHECKLIST

Site Location: Lupin Mines

Sampling Date: August 16 and 17, 2020

Golder Project Number: 19136158

Laboratory: ALS - Edmonton

Lab Submission Number: L2491823

Was the Cooler Received at the lab under a sealed and intact custody seal?	n/a
Was proper chain of custody of the samples documented and kept?	Yes
Were sample temperatures acceptable when they reached lab?:	Yes
Were all samples analyzed and extracted within hold times?:	Yes
Has lab warranted all tests were in statistical control in CoA?:	Yes
Was sufficient sample provided for the requested analysis?	Yes
Has lab warranted all samples were analyzed with limited headspace present?:	Yes

Are All Laboratory QC Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Surrogate Recovery	X			All laboratory QC results are within
Method Blank Concentration	X			acceptance criteria.
Laboratory Duplicate RPD	X			
Matrix Spike Recovery			X	
Blank Spike Recovery	X			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	No field QC samples were collected.
Trip Blank Concentration			X	
Field Duplicate RPD			X	

Is data considered reliable (Yes/No/Suspect)?: Yes

If answer is "No" or "Suspect", describe and provide rationale:

Data Reviewed by (Print): Jenny Musijowski

Data Reviewed by (Signature): 

Date: September 18, 2020

GOLDER DATA QUALITY REVIEW CHECKLIST

Site Location: Lupin Mines

Sampling Date: August 26, 2020

Golder Project Number: 19136158

Laboratory: ALS - Edmonton

Lab Submission Number: L2496479

Was the Cooler Received at the lab under a sealed and intact custody seal?	n/a
Was proper chain of custody of the samples documented and kept?	Yes
Were sample temperatures acceptable when they reached lab?:	Yes
Were all samples analyzed and extracted within hold times?:	Yes
Has lab warranted all tests were in statistical control in CoA?:	Yes
Was sufficient sample provided for the requested analysis?	Yes
Has lab warranted all samples were analyzed with limited headspace present?:	Yes

Are All Laboratory QC Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Surrogate Recovery	X			All laboratory QC results are within
Method Blank Concentration	X			acceptance criteria.
Laboratory Duplicate RPD	X			
Matrix Spike Recovery			X	
Blank Spike Recovery	X			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	All field QC samples are within
Trip Blank Concentration			X	alert limits.
Field Duplicate RPD	X			

Is data considered reliable (Yes/No/Suspect)?: Yes

If answer is "No" or "Suspect", describe and provide rationale:

Data Reviewed by (Print): Jenny Musijowski

Data Reviewed by (Signature): 

Date: September 9, 2020

GOLDER DATA QUALITY REVIEW CHECKLIST

Site Location: Lupin Mines

Sampling Date: Augsut 26, 2020

Golder Project Number: 19136158

Laboratory: ALS - Edmonton

Lab Submission Number: L2496511

Was the Cooler Received at the lab under a sealed and intact custody seal?	n/a
Was proper chain of custody of the samples documented and kept?	Yes
Were sample temperatures acceptable when they reached lab?:	Yes
Were all samples analyzed and extracted within hold times?:	Yes
Has lab warranted all tests were in statistical control in CoA?:	Yes
Was sufficient sample provided for the requested analysis?	Yes
Has lab warranted all samples were analyzed with limited headspace present?:	Yes

Are All Laboratory QC Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Surrogate Recovery		X		Surrogate recovery for 3,4-Dichlorotoluene (58.6%),
Method Blank Concentration	X			(63%) and (66.3%) below the acceptance criteria
Laboratory Duplicate RPD	X			(70-130%).
Matrix Spike Recovery			X	All remaining laboratory QC results are within
Blank Spike Recovery	X			acceptance criteria.

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	All field QC samples are within
Trip Blank Concentration			X	alert limits.
Field Duplicate RPD	X			

Is data considered reliable (Yes/No/Suspect)?: Yes

If answer is "No" or "Suspect", describe and provide rationale:

Data Reviewed by (Print): Jenny Musijowski

Data Reviewed by (Signature): 

Date: September 9, 2020

GOLDER DATA QUALITY REVIEW CHECKLIST

Site Location: Lupin Mine

Sampling Date: July 12, 2021

Golder Project Number: 20446521

Laboratory: ALS - Edmonton

Lab Submission Number: L2614352

Was the Cooler Received at the lab under a sealed and intact custody seal?	n/a
Was proper chain of custody of the samples documented and kept?	Yes
Were sample temperatures acceptable when they reached lab?:	Yes
Were all samples analyzed and extracted within hold times?:	Yes
Has lab warranted all tests were in statistical control in CoA?:	Yes
Was sufficient sample provided for the requested analysis?	Yes
Has lab warranted all samples were analyzed with limited headspace present?:	Yes

Are All Laboratory QC Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Surrogate Recovery	X			All laboratory QC results are within
Method Blank Concentration	X			acceptance criteria.
Laboratory Duplicate RPD			X	
Matrix Spike Recovery			X	
Blank Spike Recovery	X			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	No field QC samples were collected.
Trip Blank Concentration			X	
Field Duplicate RPD			X	

Is data considered reliable (Yes/No/Suspect)?: Yes

If answer is "No" or "Suspect", describe and provide rationale:

Data Reviewed by (Print): Anita Colbert

Data Reviewed by (Signature): Anita Colbert

Date: July 20, 2021

GOLDER DATA QUALITY REVIEW CHECKLIST

Site Location: Lupin Mine

Sampling Date: July 13 and 14, 2021

Golder Project Number: 20446521

Laboratory: ALS - Edmonton

Lab Submission Number: L2614441

Was the Cooler Received at the lab under a sealed and intact custody seal?	n/a
Was proper chain of custody of the samples documented and kept?	Yes
Were sample temperatures acceptable when they reached lab?:	Yes
Were all samples analyzed and extracted within hold times?:	Yes
Has lab warranted all tests were in statistical control in CoA?:	Yes
Was sufficient sample provided for the requested analysis?	Yes
Has lab warranted all samples were analyzed with limited headspace present?:	Yes

Are All Laboratory QC Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Surrogate Recovery		X		Surrogate recovery for 4-Bromofluorobenzene
Method Blank Concentration	X			(130.5% and 140.6%) exceeded the acceptance criteria
Laboratory Duplicate RPD	X			(70-130%).
Matrix Spike Recovery	X			All remaining laboratory QC results are within
Blank Spike Recovery	X			acceptance criteria.

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	No field QC samples were collected.
Trip Blank Concentration			X	
Field Duplicate RPD			X	

Is data considered reliable (Yes/No/Suspect)?: Yes

If answer is "No" or "Suspect", describe and provide rationale:

Data Reviewed by (Print): Anita Colbert

Data Reviewed by (Signature): Anita Colbert

Date: July 20, 2021

GOLDER DATA QUALITY REVIEW CHECKLIST

Site Location: Lupin Mine

Sampling Date: July 19, 2021

Golder Project Number: 20446521

Laboratory: ALS - Edmonton

Lab Submission Number: L2617215

Was the Cooler Received at the lab under a sealed and intact custody seal?	n/a
Was proper chain of custody of the samples documented and kept?	Yes
Were sample temperatures acceptable when they reached lab?:	No
Were all samples analyzed and extracted within hold times?:	Yes
Has lab warranted all tests were in statistical control in CoA?:	Yes
Was sufficient sample provided for the requested analysis?	Yes
Has lab warranted all samples were analyzed with limited headspace present?:	Yes

Are All Laboratory QC Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Surrogate Recovery		X		Surrogate recovery for 4-Bromofluorobenzene
Method Blank Concentration	X			(174.1%) exceeded the acceptance criteria (70-130%).
Laboratory Duplicate RPD	X			All remaining laboratory QC results are within
Matrix Spike Recovery	X			acceptance criteria.
Blank Spike Recovery	X			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	All field QC samples are within
Trip Blank Concentration			X	alert limits.
Field Duplicate RPD	X			

Is data considered reliable (Yes/No/Suspect)?: Suspect

If answer is "No" or "Suspect", describe and provide rationale:

Samples were packed on ice and in a sealed cooler. This may increase the uncertainty associated with the data associated with organics testing. Thus, this data should be considered suspect. 10.9°C

Data Reviewed by (Print): Jenny Musijowski

Data Reviewed by (Signature):

Date: July 29, 2021

GOLDER DATA QUALITY REVIEW CHECKLIST

Site Location: Lupin Mine

Sampling Date: July 19, 2021

Golder Project Number: 20446521

Laboratory: ALS - Edmonton

Lab Submission Number: L2617230

Was the Cooler Received at the lab under a sealed and intact custody seal?	n/a
Was proper chain of custody of the samples documented and kept?	Yes
Were sample temperatures acceptable when they reached lab?:	No
Were all samples analyzed and extracted within hold times?:	Yes
Has lab warranted all tests were in statistical control in CoA?:	Yes
Was sufficient sample provided for the requested analysis?	Yes
Has lab warranted all samples were analyzed with limited headspace present?:	Yes

Are All Laboratory QC Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Surrogate Recovery	X			All laboratory QC results are within
Method Blank Concentration	X			acceptance criteria.
Laboratory Duplicate RPD	X			
Matrix Spike Recovery			X	
Blank Spike Recovery	X			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	All field QC samples are within
Trip Blank Concentration			X	alert limits.
Field Duplicate RPD	X			

Is data considered reliable (Yes/No/Suspect)?: Suspect

If answer is "No" or "Suspect", describe and provide rationale:

Please see QA/QC appendix for details

Data Reviewed by (Print): Jenny Musijowski

Data Reviewed by (Signature): 

Date: July 29, 2021

GOLDER DATA QUALITY REVIEW CHECKLIST

Site Location: Lupin Mine

Sampling Date: July 20, 2021

Golder Project Number: 20446521

Laboratory: ALS - Edmonton

Lab Submission Number: L2617242

Was the Cooler Received at the lab under a sealed and intact custody seal?	n/a
Was proper chain of custody of the samples documented and kept?	Yes
Were sample temperatures acceptable when they reached lab?:	No
Were all samples analyzed and extracted within hold times?:	Yes
Has lab warranted all tests were in statistical control in CoA?:	Yes
Was sufficient sample provided for the requested analysis?	Yes
Has lab warranted all samples were analyzed with limited headspace present?:	Yes

Are All Laboratory QC Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Surrogate Recovery		X		Surrogate recovery for 4-Bromofluorobenzene
Method Blank Concentration	X			(174.7%) exceeded the acceptance criteria (70-130%).
Laboratory Duplicate RPD	X			Surrogate recovery for 3,4-Dichlorotoluene (56.7%)
Matrix Spike Recovery			X	below the acceptance criteria (70-130%).
Blank Spike Recovery	X			All remaining laboratory QC results are within acceptance criteria.

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	All field QC samples are within
Trip Blank Concentration			X	alert limits.
Field Duplicate RPD	X			

Is data considered reliable (Yes/No/Suspect)?: Suspect

If answer is "No" or "Suspect", describe and provide rationale:

Samples were packed on ice and in a sealed cooler. This may increase the uncertainty associated with the data associated with organics testing. Thus, this data should be considered suspect. 13.1°C

Data Reviewed by (Print): Jenny Musijowski

Data Reviewed by (Signature): 

Date: July 29, 2021

GOLDER DATA QUALITY REVIEW CHECKLIST

Site Location: Lupin Mine

Sampling Date: July 20, 2021

Golder Project Number: 20446521

Laboratory: ALS - Edmonton

Lab Submission Number: L2617248

Was the Cooler Received at the lab under a sealed and intact custody seal?	n/a
Was proper chain of custody of the samples documented and kept?	Yes
Were sample temperatures acceptable when they reached lab?:	No
Were all samples analyzed and extracted within hold times?:	Yes
Has lab warranted all tests were in statistical control in CoA?:	Yes
Was sufficient sample provided for the requested analysis?	Yes
Has lab warranted all samples were analyzed with limited headspace present?:	Yes

Are All Laboratory QC Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Surrogate Recovery	X			All laboratory QC results are within
Method Blank Concentration	X			acceptance criteria.
Laboratory Duplicate RPD	X			
Matrix Spike Recovery	X			
Blank Spike Recovery	X			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	All field QC samples are within
Trip Blank Concentration			X	alert limits.
Field Duplicate RPD	X			

Is data considered reliable (Yes/No/Suspect)?: Suspect

If answer is "No" or "Suspect", describe and provide rationale:

Samples were packed on ice and in a sealed cooler. This may increase the uncertainty associated with the data associated with organics testing. Thus, this data should be considered suspect. 13.1°C

Data Reviewed by (Print): Jenny Musijowski

Data Reviewed by (Signature): 

Date: July 29, 2021

GOLDER DATA QUALITY REVIEW CHECKLIST

Site Location: Lupin Mine

Sampling Date: July 26, 2021

Golder Project Number: 20446521

Laboratory: ALS - Edmonton

Lab Submission Number: L2620188

Was the Cooler Received at the lab under a sealed and intact custody seal?	n/a
Was proper chain of custody of the samples documented and kept?	Yes
Were sample temperatures acceptable when they reached lab?:	No
Were all samples analyzed and extracted within hold times?:	Yes
Has lab warranted all tests were in statistical control in CoA?:	Yes
Was sufficient sample provided for the requested analysis?	Yes
Has lab warranted all samples were analyzed with limited headspace present?:	Yes

Are All Laboratory QC Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Surrogate Recovery	X			All laboratory QC results are within
Method Blank Concentration	X			acceptance criteria.
Laboratory Duplicate RPD	X			
Matrix Spike Recovery			X	
Blank Spike Recovery	X			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	No field QC samples were collected.
Trip Blank Concentration			X	
Field Duplicate RPD			X	

Is data considered reliable (Yes/No/Suspect)?: Suspect

If answer is "No" or "Suspect", describe and provide rationale:

Please see QA/QC appendix for details

Data Reviewed by (Print): Anita Colbert

Data Reviewed by (Signature): Anita Colbert

Date: August 5, 2021

GOLDER DATA QUALITY REVIEW CHECKLIST

Site Location: Lupin Mine

Sampling Date: July 26, 2021

Golder Project Number: 20446521

Laboratory: ALS - Edmonton

Lab Submission Number: L2620196

Was the Cooler Received at the lab under a sealed and intact custody seal?	n/a
Was proper chain of custody of the samples documented and kept?	Yes
Were sample temperatures acceptable when they reached lab?:	No
Were all samples analyzed and extracted within hold times?:	Yes
Has lab warranted all tests were in statistical control in CoA?:	Yes
Was sufficient sample provided for the requested analysis?	Yes
Has lab warranted all samples were analyzed with limited headspace present?:	Yes

Are All Laboratory QC Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Surrogate Recovery	X			All laboratory QC results are within
Method Blank Concentration	X			acceptance criteria.
Laboratory Duplicate RPD			X	
Matrix Spike Recovery			X	
Blank Spike Recovery	X			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	No field QC samples were collected.
Trip Blank Concentration			X	
Field Duplicate RPD			X	

Is data considered reliable (Yes/No/Suspect)?: Suspect

If answer is "No" or "Suspect", describe and provide rationale:

Please see QA/QC appendix for details

Data Reviewed by (Print): Anita Colbert

Data Reviewed by (Signature): Anita Colbert

Date: August 5, 2021

GOLDER DATA QUALITY REVIEW CHECKLIST

Site Location: Lupin Mine

Sampling Date: July 22, 23 and 27, 2021

Golder Project Number: 20446521

Laboratory: ALS - Edmonton

Lab Submission Number: L2620199

Was the Cooler Received at the lab under a sealed and intact custody seal?	n/a
Was proper chain of custody of the samples documented and kept?	Yes
Were sample temperatures acceptable when they reached lab?:	No
Were all samples analyzed and extracted within hold times?:	Yes
Has lab warranted all tests were in statistical control in CoA?:	Yes
Was sufficient sample provided for the requested analysis?	Yes
Has lab warranted all samples were analyzed with limited headspace present?:	Yes

Are All Laboratory QC Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Surrogate Recovery	X			All laboratory QC results are within
Method Blank Concentration	X			acceptance criteria.
Laboratory Duplicate RPD	X			
Matrix Spike Recovery			X	
Blank Spike Recovery	X			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	All field QC samples are within
Trip Blank Concentration			X	alert limits.
Field Duplicate RPD	X			

Is data considered reliable (Yes/No/Suspect)?: Suspect

If answer is "No" or "Suspect", describe and provide rationale:

Please see QA/QC appendix for details

Data Reviewed by (Print): Anita Colbert

Data Reviewed by (Signature): Anita Colbert

Date: August 5, 2021

GOLDER DATA QUALITY REVIEW CHECKLIST

Site Location: Lupin Mine

Sampling Date: July 23, 26 and 27, 2021

Golder Project Number: 20446521

Laboratory: ALS - Edmonton

Lab Submission Number: L2620218

Was the Cooler Received at the lab under a sealed and intact custody seal?	n/a
Was proper chain of custody of the samples documented and kept?	Yes
Were sample temperatures acceptable when they reached lab?:	No
Were all samples analyzed and extracted within hold times?:	Yes
Has lab warranted all tests were in statistical control in CoA?:	Yes
Was sufficient sample provided for the requested analysis?	Yes
Has lab warranted all samples were analyzed with limited headspace present?:	Yes

Are All Laboratory QC Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Surrogate Recovery	X			All laboratory QC results are within
Method Blank Concentration	X			acceptance criteria.
Laboratory Duplicate RPD	X			
Matrix Spike Recovery			X	
Blank Spike Recovery	X			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	All field QC samples are within
Trip Blank Concentration			X	alert limits.
Field Duplicate RPD	X			

Is data considered reliable (Yes/No/Suspect)?: Suspect

If answer is "No" or "Suspect", describe and provide rationale:

Please see QA/QC appendix for details

Data Reviewed by (Print): Anita Colbert

Data Reviewed by (Signature): Anita Colbert

Date: August 5, 2021

GOLDER DATA QUALITY REVIEW CHECKLIST

Site Location: Lupin Mine

Sampling Date: August 3 and 4, 2021

Golder Project Number: 20446521

Laboratory: ALS - Edmonton

Lab Submission Number: L2622923

Was the Cooler Received at the lab under a sealed and intact custody seal?	n/a
Was proper chain of custody of the samples documented and kept?	Yes
Were sample temperatures acceptable when they reached lab?:	Yes
Were all samples analyzed and extracted within hold times?:	Yes
Has lab warranted all tests were in statistical control in CoA?:	Yes
Was sufficient sample provided for the requested analysis?	Yes
Has lab warranted all samples were analyzed with limited headspace present?:	Yes

Are All Laboratory QC Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Surrogate Recovery	X			All laboratory QC results are within
Method Blank Concentration	X			acceptance criteria.
Laboratory Duplicate RPD			X	
Matrix Spike Recovery			X	
Blank Spike Recovery	X			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	No field QC samples were collected.
Trip Blank Concentration			X	
Field Duplicate RPD			X	

Is data considered reliable (Yes/No/Suspect)?: Yes

If answer is "No" or "Suspect", describe and provide rationale:

Data Reviewed by (Print): Anita Colbert

Data Reviewed by (Signature): Anita Colbert

Date: August 17, 2021

GOLDER DATA QUALITY REVIEW CHECKLIST

Site Location: Lupin Mine

Sampling Date: July 30, 2021

Golder Project Number: 20446521

Laboratory: ALS - Edmonton

Lab Submission Number: L2622938

Was the Cooler Received at the lab under a sealed and intact custody seal?	n/a
Was proper chain of custody of the samples documented and kept?	Yes
Were sample temperatures acceptable when they reached lab?:	Yes
Were all samples analyzed and extracted within hold times?:	Yes
Has lab warranted all tests were in statistical control in CoA?:	Yes
Was sufficient sample provided for the requested analysis?	Yes
Has lab warranted all samples were analyzed with limited headspace present?:	Yes

Are All Laboratory QC Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Surrogate Recovery	X			All laboratory QC results are within
Method Blank Concentration	X			acceptance criteria.
Laboratory Duplicate RPD			X	
Matrix Spike Recovery			X	
Blank Spike Recovery	X			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	No field QC samples were collected.
Trip Blank Concentration			X	
Field Duplicate RPD			X	

Is data considered reliable (Yes/No/Suspect)?: Yes

If answer is "No" or "Suspect", describe and provide rationale:

Data Reviewed by (Print): Anita Colbert

Data Reviewed by (Signature): Anita Colbert

Date: August 17, 2021

GOLDER DATA QUALITY REVIEW CHECKLIST

Site Location: Lupin Mine

Sampling Date: August 4, 2021

Golder Project Number: 20446521

Laboratory: ALS - Edmonton

Lab Submission Number: L2622944

Was the Cooler Received at the lab under a sealed and intact custody seal?	n/a
Was proper chain of custody of the samples documented and kept?	Yes
Were sample temperatures acceptable when they reached lab?:	Yes
Were all samples analyzed and extracted within hold times?:	Yes
Has lab warranted all tests were in statistical control in CoA?:	Yes
Was sufficient sample provided for the requested analysis?	Yes
Has lab warranted all samples were analyzed with limited headspace present?:	Yes

Are All Laboratory QC Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Surrogate Recovery	X			All laboratory QC results are within
Method Blank Concentration	X			acceptance criteria.
Laboratory Duplicate RPD	X			
Matrix Spike Recovery			X	
Blank Spike Recovery	X			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	All field QC samples are within
Trip Blank Concentration			X	alert limits.
Field Duplicate RPD	X			

Is data considered reliable (Yes/No/Suspect)?: Yes

If answer is "No" or "Suspect", describe and provide rationale:

Data Reviewed by (Print): Anita Colbert

Data Reviewed by (Signature): Anita Colbert

Date: August 17, 2021

GOLDER DATA QUALITY REVIEW CHECKLIST

Site Location: Lupin Mine

Sampling Date: August 4, 2021

Golder Project Number: 20446521

Laboratory: ALS - Edmonton

Lab Submission Number: L2622962

Was the Cooler Received at the lab under a sealed and intact custody seal?	n/a
Was proper chain of custody of the samples documented and kept?	Yes
Were sample temperatures acceptable when they reached lab?:	Yes
Were all samples analyzed and extracted within hold times?:	Yes
Has lab warranted all tests were in statistical control in CoA?:	Yes
Was sufficient sample provided for the requested analysis?	Yes
Has lab warranted all samples were analyzed with limited headspace present?:	Yes

Are All Laboratory QC Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Surrogate Recovery	X			All laboratory QC results are within
Method Blank Concentration	X			acceptance criteria.
Laboratory Duplicate RPD	X			
Matrix Spike Recovery			X	
Blank Spike Recovery	X			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	All field QC samples are within
Trip Blank Concentration			X	alert limits.
Field Duplicate RPD	X			

Is data considered reliable (Yes/No/Suspect)?: Yes

If answer is "No" or "Suspect", describe and provide rationale:

Data Reviewed by (Print): Anita Colbert

Data Reviewed by (Signature): Anita Colbert

Date: August 17, 2021

GOLDER DATA QUALITY REVIEW CHECKLIST

Site Location: Lupin Mine

Sampling Date: August 6, 7 and 8, 2021

Golder Project Number: 20446521

Laboratory: ALS - Edmonton

Lab Submission Number: L2624667

Was the Cooler Received at the lab under a sealed and intact custody seal?	n/a
Was proper chain of custody of the samples documented and kept?	Yes
Were sample temperatures acceptable when they reached lab?:	Yes
Were all samples analyzed and extracted within hold times?:	Yes
Has lab warranted all tests were in statistical control in CoA?:	Yes
Was sufficient sample provided for the requested analysis?	Yes
Has lab warranted all samples were analyzed with limited headspace present?:	Yes

Are All Laboratory QC Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Surrogate Recovery	X			All laboratory QC results are within
Method Blank Concentration	X			acceptance criteria.
Laboratory Duplicate RPD			X	
Matrix Spike Recovery			X	
Blank Spike Recovery	X			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	No field QC samples were collected.
Trip Blank Concentration			X	
Field Duplicate RPD			X	

Is data considered reliable (Yes/No/Suspect)?: Yes

If answer is "No" or "Suspect", describe and provide rationale:

Please see QA/QC appendix for details

Data Reviewed by (Print): Anita Colbert

Data Reviewed by (Signature): Anita Colbert

Date: August 20, 2021

GOLDER DATA QUALITY REVIEW CHECKLIST

Site Location: Lupin Mine

Sampling Date: August 19 and 20, 2021

Golder Project Number: 20446521

Laboratory: ALS - Edmonton

Lab Submission Number: L2630059

Was the Cooler Received at the lab under a sealed and intact custody seal?	n/a
Was proper chain of custody of the samples documented and kept?	Yes
Were sample temperatures acceptable when they reached lab?:	Yes
Were all samples analyzed and extracted within hold times?:	Yes
Has lab warranted all tests were in statistical control in CoA?:	Yes
Was sufficient sample provided for the requested analysis?	Yes
Has lab warranted all samples were analyzed with limited headspace present?:	Yes

Are All Laboratory QC Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Surrogate Recovery	X			All laboratory QC samples are within acceptance
Method Blank Concentration	X			criteria.
Laboratory Duplicate RPD	X			
Matrix Spike Recovery			X	
Blank Spike Recovery	X			

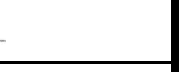
Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	No field QC samples were collected.
Trip Blank Concentration			X	
Field Duplicate RPD			X	

Is data considered reliable (Yes/No/Suspect)?: Yes

If answer is "No" or "Suspect", describe and provide rationale:

Data Reviewed by (Print): Bessie Abella-Coreas

Data Reviewed by (Signature): 

Date: October 19, 2021

GOLDER DATA QUALITY REVIEW CHECKLIST

Site Location: Lupin Mine

Sampling Date: August 24, 2021

Golder Project Number: 20446521

Laboratory: ALS - Edmonton

Lab Submission Number: L2631648

Was the Cooler Received at the lab under a sealed and intact custody seal?	n/a
Was proper chain of custody of the samples documented and kept?	Yes
Were sample temperatures acceptable when they reached lab?:	No
Were all samples analyzed and extracted within hold times?:	Yes
Has lab warranted all tests were in statistical control in CoA?:	Yes
Was sufficient sample provided for the requested analysis?	Yes
Has lab warranted all samples were analyzed with limited headspace present?:	Yes

Are All Laboratory QC Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Surrogate Recovery	X			All laboratory QC results are within acceptance
Method Blank Concentration	X			criteria.
Laboratory Duplicate RPD	X			
Matrix Spike Recovery			X	
Blank Spike Recovery	X			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	All field QC samples are within
Trip Blank Concentration			X	alert limits.
Field Duplicate RPD	X			

Is data considered reliable (Yes/No/Suspect)?: Suspect

If answer is "No" or "Suspect", describe and provide rationale:

Please see QA/QC appendix for details

Data Reviewed by (Print): Bessie Abella-Coreas

Data Reviewed by (Signature): 

Date: September 14, 2021

GOLDER DATA QUALITY REVIEW CHECKLIST

Site Location: Lupin Mine

Sampling Date: August 27, 28, and 29, 2021

Golder Project Number: 20446521

Laboratory: ALS - Edmonton

Lab Submission Number: L2633658

Was the Cooler Received at the lab under a sealed and intact custody seal?	n/a
Was proper chain of custody of the samples documented and kept?	Yes
Were sample temperatures acceptable when they reached lab?:	Yes
Were all samples analyzed and extracted within hold times?:	Yes
Has lab warranted all tests were in statistical control in CoA?:	Yes
Was sufficient sample provided for the requested analysis?	Yes
Has lab warranted all samples were analyzed with limited headspace present?:	Yes

Are All Laboratory QC Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Surrogate Recovery	X			All laboratory QC results are within acceptance
Method Blank Concentration	X			criteria.
Laboratory Duplicate RPD	X			
Matrix Spike Recovery			X	
Blank Spike Recovery	X			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	All field QC samples are within
Trip Blank Concentration			X	alert limits.
Field Duplicate RPD	X			

Is data considered reliable (Yes/No/Suspect)?: Yes

If answer is "No" or "Suspect", describe and provide rationale:

Data Reviewed by (Print): Bessie Abella-Coreas

Data Reviewed by (Signature): 

Date: September 14, 2021

GOLDER DATA QUALITY REVIEW CHECKLIST

Site Location: Lupin Mine

Sampling Date: September 7, 2021

Golder Project Number: 20446521

Laboratory: ALS - Edmonton

Lab Submission Number: L2637321

Was the Cooler Received at the lab under a sealed and intact custody seal?	n/a
Was proper chain of custody of the samples documented and kept?	Yes
Were sample temperatures acceptable when they reached lab?:	Yes
Were all samples analyzed and extracted within hold times?:	Yes
Has lab warranted all tests were in statistical control in CoA?:	Yes
Was sufficient sample provided for the requested analysis?	Yes
Has lab warranted all samples were analyzed with limited headspace present?:	Yes

Are All Laboratory QC Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Surrogate Recovery	X			All laboratory QC results are within
Method Blank Concentration	X			acceptance criteria.
Laboratory Duplicate RPD	X			
Matrix Spike Recovery			X	
Blank Spike Recovery	X			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	All field QC samples are within
Trip Blank Concentration			X	alert limits.
Field Duplicate RPD	X			

Is data considered reliable (Yes/No/Suspect)?: Yes

If answer is "No" or "Suspect", describe and provide rationale:

Data Reviewed by (Print): Anita Colbert

Data Reviewed by (Signature): Anita Colbert

Date: September 14, 2021

GOLDER DATA QUALITY REVIEW CHECKLIST

Site Location: Lupin Mine

Sampling Date: September 7, 2021

Golder Project Number: 20446521

Laboratory: ALS - Edmonton

Lab Submission Number: L2637412

Was the Cooler Received at the lab under a sealed and intact custody seal?	n/a
Was proper chain of custody of the samples documented and kept?	Yes
Were sample temperatures acceptable when they reached lab?:	Yes
Were all samples analyzed and extracted within hold times?:	Yes
Has lab warranted all tests were in statistical control in CoA?:	Yes
Was sufficient sample provided for the requested analysis?	Yes
Has lab warranted all samples were analyzed with limited headspace present?:	Yes

Are All Laboratory QC Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Surrogate Recovery	X			All laboratory QC results are within
Method Blank Concentration	X			acceptance criteria.
Laboratory Duplicate RPD	X			
Matrix Spike Recovery			X	
Blank Spike Recovery	X			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	All field QC samples are within
Trip Blank Concentration			X	alert limits.
Field Duplicate RPD	X			

Is data considered reliable (Yes/No/Suspect)?: Yes

If answer is "No" or "Suspect", describe and provide rationale:

Data Reviewed by (Print): Anita Colbert

Data Reviewed by (Signature): Anita Colbert

Date: September 14, 2021

GOLDER DATA QUALITY REVIEW CHECKLIST

Site Location: Lupin Mine

Sampling Date: September 7, 2021

Golder Project Number: 20446521

Laboratory: ALS - Edmonton

Lab Submission Number: L2637442

Was the Cooler Received at the lab under a sealed and intact custody seal?	n/a
Was proper chain of custody of the samples documented and kept?	Yes
Were sample temperatures acceptable when they reached lab?:	Yes
Were all samples analyzed and extracted within hold times?:	Yes
Has lab warranted all tests were in statistical control in CoA?:	Yes
Was sufficient sample provided for the requested analysis?	Yes
Has lab warranted all samples were analyzed with limited headspace present?:	Yes

Are All Laboratory QC Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Surrogate Recovery	X			All laboratory QC results are within acceptance
Method Blank Concentration	X			criteria.
Laboratory Duplicate RPD	X			
Matrix Spike Recovery			X	
Blank Spike Recovery	X			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	All field QC samples are within
Trip Blank Concentration			X	alert limits.
Field Duplicate RPD	X			

Is data considered reliable (Yes/No/Suspect)?: Yes

If answer is "No" or "Suspect", describe and provide rationale:

Data Reviewed by (Print): Bessie Abella-Coreas

Data Reviewed by (Signature):

Date: September 24, 2021

GOLDER DATA QUALITY REVIEW CHECKLIST

Site Location: Lupin Mine

Sampling Date: September 9, 2021

Golder Project Number: 20446521

Laboratory: ALS - Edmonton

Lab Submission Number: L2637973

Was the Cooler Received at the lab under a sealed and intact custody seal?	n/a
Was proper chain of custody of the samples documented and kept?	Yes
Were sample temperatures acceptable when they reached lab?:	Yes
Were all samples analyzed and extracted within hold times?:	Yes
Has lab warranted all tests were in statistical control in CoA?:	Yes
Was sufficient sample provided for the requested analysis?	Yes
Has lab warranted all samples were analyzed with limited headspace present?:	Yes

Are All Laboratory QC Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Surrogate Recovery	X			All laboratory QC results are within acceptance
Method Blank Concentration	X			criteria.
Laboratory Duplicate RPD			X	
Matrix Spike Recovery			X	
Blank Spike Recovery	X			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	No field QC samples were collected.
Trip Blank Concentration			X	
Field Duplicate RPD			X	

Is data considered reliable (Yes/No/Suspect)?: Yes

If answer is "No" or "Suspect", describe and provide rationale:

Data Reviewed by (Print): Bessie Abella-Coreas

Data Reviewed by (Signature): 

Date: September 24, 2021

GOLDER DATA QUALITY REVIEW CHECKLIST

Site Location: Lupin Mine

Sampling Date: September 10, 2021

Golder Project Number: 20446521

Laboratory: ALS - Edmonton

Lab Submission Number: L2639005

Was the Cooler Received at the lab under a sealed and intact custody seal?	n/a
Was proper chain of custody of the samples documented and kept?	Yes
Were sample temperatures acceptable when they reached lab?:	Yes
Were all samples analyzed and extracted within hold times?:	Yes
Has lab warranted all tests were in statistical control in CoA?:	Yes
Was sufficient sample provided for the requested analysis?	Yes
Has lab warranted all samples were analyzed with limited headspace present?:	Yes

Are All Laboratory QC Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Surrogate Recovery	X			All laboratory QC results are within acceptance
Method Blank Concentration	X			criteria.
Laboratory Duplicate RPD	X			
Matrix Spike Recovery			X	
Blank Spike Recovery	X			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	All field QC samples are within
Trip Blank Concentration			X	alert limits.
Field Duplicate RPD	X			

Is data considered reliable (Yes/No/Suspect)?: Yes

If answer is "No" or "Suspect", describe and provide rationale:

Data Reviewed by (Print): Bessie Abella-Coreas

Data Reviewed by (Signature):

Date: September 24, 2021

GOLDER DATA QUALITY REVIEW CHECKLIST

Site Location: Lupin Mine

Sampling Date: September 15, 2021

Golder Project Number: 20446521

Laboratory: ALS - Edmonton

Lab Submission Number: L2639913

Was the Cooler Received at the lab under a sealed and intact custody seal?	n/a
Was proper chain of custody of the samples documented and kept?	Yes
Were sample temperatures acceptable when they reached lab?:	Yes
Were all samples analyzed and extracted within hold times?:	Yes
Has lab warranted all tests were in statistical control in CoA?:	Yes
Was sufficient sample provided for the requested analysis?	Yes
Has lab warranted all samples were analyzed with limited headspace present?:	Yes

Are All Laboratory QC Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Surrogate Recovery	X			All laboratory QC results are within acceptance
Method Blank Concentration	X			criteria.
Laboratory Duplicate RPD	X			
Matrix Spike Recovery			X	
Blank Spike Recovery	X			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	All field QC samples are within
Trip Blank Concentration			X	alert limits.
Field Duplicate RPD	X			

Is data considered reliable (Yes/No/Suspect)?: Yes

If answer is "No" or "Suspect", describe and provide rationale:

Data Reviewed by (Print): Bessie Abella-Coreas

Data Reviewed by (Signature): 

Date: September 24, 2021