



Revised Phase II Environmental Site Assessment

386 Richmond Road
Ottawa, Ontario

Prepared for:

NRML Real Co.
184 Rideau Street
Ottawa, ON K1N 5X6

Attn: Mr. Yann Darevic

November 3, 2017

Pinchin File: 206278.001



Revised Phase II Environmental Site Assessment

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NRML Real Co.

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Issued To: NRML Real Co.
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Issued On: November 3, 2017
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EXECUTIVE SUMMARY

Pinchin Ltd. (Pinchin) was retained through an Authorization to Proceed signed by Mr. Yann Darevic of NRML Real Co. (Client) to conduct a Phase II Environmental Site Assessment (ESA) of the property located at 386 Richmond Road, Ottawa, Ontario (hereafter referred to as the Site).

The Site is developed with a two-storey mixed-use commercial and residential building (Site Building).

The purpose of this Phase II ESA was to address potential issues of environmental concern in relation to the potential acquisition and financing of the Site.

The results of the Phase I ESA completed by Pinchin identified the following potential issues of environmental concern:

- During Pinchin's Site reconnaissance, the Site Representative reported that the previous Site owner indicated that the Site Building was reportedly heated by heating oil; however, the Site Representative could not confirm or refute if the heating oil was stored in an aboveground storage tank (AST) or underground storage tank. In addition, the Ontario Spills database indicated that on April 20, 2006, a fuel odour complaint for an unknown reason occurred at the Site; and
- The Ontario Spills indicated that several spills had occurred at the property located at 388 Richmond Road between 1993 to 2015, which included a total of 2-litres (L) of furnace oil from an AST, which leaked onto the ground surface; an unknown amount of fuel oil spilled onto the parking lot ground surface; a total of 50-L of furnace oil from an AST leaked onto the ground surface; and an unknown quantity of furnace oil from an AST leaked onto the ground surface. This property is located adjacent to the west elevation of the Site.

Based on the above-mentioned findings, Pinchin recommended that a Phase II ESA be conducted at the Site in order to assess for the presence of environmental impacts.

The Phase II ESA was completed at the Site by Pinchin on June 14 and 15, 2017, and consisted of the advancement of two boreholes, one of which was completed as a groundwater monitoring well. Select "worst case" soil samples collected during the borehole drilling program were submitted for laboratory analysis of benzene, toluene, ethylbenzene and xylenes (collectively referred to as BTEX) and petroleum hydrocarbons (PHCs) in the F1 to F4 fraction ranges (F1-F4). A Groundwater sample collected from the newly installed monitoring well was submitted for laboratory analysis of a combination of BTEX and PHCs (F1-F4).



In addition, it should be noted that two additional soil samples were submitted for laboratory analysis of BTEX and PHCs (F1-F4) as part of a geotechnical investigation completed by Pinchin at the Site on September 26, 2017.

Based on Site-specific information, the soil and groundwater quality was assessed based on the Ontario Ministry of the Environment and Climate Change *Table 7 Standards* for residential/parkland/institutional land use and coarse-textured soil.

The reported concentrations of PHCs (F1-F4) and BTEX in the soil samples submitted for analysis met the Table 7 Standards, with the exception of the soil samples collected from boreholes MW-2 and BH-100, which reported concentrations of PHCs (F2) that marginally exceeded the *Table 7 Standards*.

The reported concentrations of PHCs (F1-F4) and BTEX in the groundwater sample (MW-2) submitted for analysis reported a concentrations of benzene and PHCs (F2) that marginally exceeded the *Table 7 Standards*.

Based on the findings of this Phase II ESA, soil impacts marginally exceeding the *Table 7 Standards* were identified at boreholes MW-2 and BH-100. In addition, groundwater impacts marginally exceeding the *Table 7 Standards* were identified at borehole MW-2. It is Pinchin's understanding that the Client intends to redevelop the Site with a two-storey commercial/residential building. As such, it is Pinchin's opinion that no further subsurface assessment work is warranted at this time; and that any soil or groundwater impacts at the Site could be addressed upon redevelopment of the Site.

This Executive Summary is subject to the same standard limitations as contained in the report and must be read in conjunction with the entire report.



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1.0 INTRODUCTION

Pinchin Ltd. (Pinchin) was retained through an Authorization to Proceed signed by Mr. Yann Darevic of NRML Real Co. (Client) to conduct a Phase II Environmental Site Assessment (ESA) of the property located at 386 Richmond Road, Ottawa, Ontario (hereafter referred to as the Site).

The Site is developed with a two-storey mixed-use commercial and residential building (Site Building).

The purpose of this Phase II ESA was to address potential issues of environmental concern in relation to the potential acquisition and financing of the Site.

This Phase II ESA was completed in general accordance with the Canadian Standards Association document entitled "*Phase II Environmental Site Assessment, CSA Standard Z769-00 (R2013)*", dated 2000 and reaffirmed in 2013.

1.1 Background

Pinchin completed a Phase I ESA for the Site, the findings of which were provided in the report entitled "*Phase I Environmental Site Assessment, 386 Richmond Road, Ottawa, Ontario*", dated June 7, 2017.

The results of the Phase I ESA completed by Pinchin identified the following areas of potential environmental concern (APECs) that could give rise to potential subsurface impacts in connection with the Site:

impacts at the Site:

- During Pinchin's Site reconnaissance, the Site Representative reported that the previous Site owner indicated that the Site Building was reportedly heated by heating oil; however, the Site Representative could not confirm or refute if the heating oil was stored in an aboveground storage tank (AST) or underground storage tank. In addition, the Ontario Spills database indicated that on April 20, 2006, a fuel odour complaint for an unknown reason occurred at the Site; and
- The Ontario Spills indicated that several spills had occurred at the property located at 388 Richmond Road between 1993 to 2015, which included a total of 2-litres (L) of furnace oil from an AST, which leaked onto the ground surface; an unknown amount of fuel oil spilled onto the parking lot ground surface; a total of 50-L of furnace oil from an AST leaked onto the ground surface; and an unknown quantity of furnace oil from an AST leaked onto the ground surface. This property is located adjacent to the west elevation of the Site. Based on the above-noted spills, as well as the close proximity of this property to the Site, it is Pinchin's opinion that this property has the potential to result in subsurface impacts at the Site.



Based on the above-mentioned findings, it was Pinchin's recommendation that a Phase II ESA be conducted at the Site in order to assess the above-noted APECs for the presence of environmental impacts.

1.2 Scope of Work

The scope of work completed by Pinchin, as outlined in the Pinchin proposal entitled "*Proposal for Phase II Environmental Site Assessment, 386 Richmond Road, Ottawa, Ontario*", submitted to the Client on June 1, 2017 included the following:

- Following the clearance of underground services, advancement of two boreholes, both of which were instrumented with a monitoring well;
- Submission of select "worst case" soil samples for laboratory analysis of benzene, toluene, ethylbenzene and xylenes (collectively referred to as BTEX) and petroleum hydrocarbons (PHCs) in the F1 to F4 fraction ranges (F1-F4);
- Collection of groundwater samples from each of the newly installed monitoring wells, following well development and purging, for laboratory analysis of BTEX and PHCs (F1-F4);
- Comparison of the soil and groundwater laboratory analytical results to the applicable regulatory criteria; and
- Preparation of a factual report detailing the findings of the Phase II ESA and recommendations.

The investigation was designed to address APEC 2 by advancing a borehole in the vicinity of the west property line; however, surface obstructions as well as overhead utilities did not allow the drill rig to approach the west property any further than that depicted in Figure 2. Also, advancing boreholes in the basement level was not logistically possible due to restrictive overhead height limitation/access. In addition, it should be noted that two additional soil samples were submitted for laboratory analysis of BTEX and PHCs (F1-F4) as part of a recent geotechnical investigation completed by Pinchin at the Site on September 26, 2017.

2.0 METHODOLOGY

The investigation methodology was conducted in general accordance with the Ontario Ministry of the Environment and Climate Change (MOECC, formerly the Ontario Ministry of the Environment) document entitled "*Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario*" dated December 1996 (*MOECC Sampling Guideline*), the Association of Professional Geoscientists of Ontario

document entitled “*Guidance for Environmental Site Assessments under Ontario Regulation 153/04 (as amended)*”, dated April 2011 (*APGO Guideline*) and Pinchin’s standard operating procedures (SOPs).

2.1 Borehole Investigation

Pinchin retained Strata Drilling Group (Strata) to complete the borehole drilling program at the Site on June 14, 2017, and on September, 26, 2017 as part of a geotechnical investigation following the clearance of underground services in the vicinity of the work area by public utility locators and a private utility locator retained by Pinchin. Strata is licensed by the MOECC in accordance with Ontario Regulation 903 (as amended) to undertake borehole drilling/well installation activities.

The boreholes were advanced to a maximum depth of 2.7 mbgs using a GeoProbe 7822DT direct push drill rig. Auger refusal was completed on inferred bedrock in borehole MW-2. Soil samples were collected at continuous intervals using 3.8 centimetre (cm) inner diameter (ID) direct push soil samplers with dedicated single-use sample liners. Discrete soil samples were collected from the single-use liners and containerized in laboratory-supplied glass sampling jars.

Subsurface soil conditions were logged on-Site by Pinchin personnel at the time of drilling. Soil samples were examined for visual and olfactory evidence of impacts and a portion of each sample was analyzed in the field for solvent and petroleum-derived vapour concentrations in soil headspace using a photoionization detector (PID).

The locations of the boreholes are shown on Figure 2 and a description of the subsurface stratigraphy encountered during the drilling program is documented in the borehole logs included in Appendix II.

2.2 Monitoring Well Installation

A groundwater monitoring well was installed in borehole MW-2 to enable groundwater monitoring and sampling. The monitoring wells were constructed with 5.1 cm inner diameter (ID) flush-threaded Schedule 40 polyvinyl chloride (PVC) risers, followed by a length of 5.1 cm ID No. 10 slot PVC screen that intersected suspected static groundwater level.

The well screen was sealed at the bottom using a threaded cap and each riser was sealed at the top with a lockable J-plug cap. Silica sand was placed around and above the screened interval to form a filter pack around the well screen. A layer of bentonite was placed above the silica sand and was extended to just below the ground surface. A 5.1 cm ID Schedule 40 PVC outer casing, approximately 10 cm in length, was installed in each well around the top of the riser and into the top of the bentonite seal. A bentonite seal was then placed between the riser and outer casing. A protective flush-mount cover was installed at the ground surface over each riser pipe and outer casing and cemented in place.

The locations of the monitoring wells are shown on Figure 2. The monitoring well construction details are shown on the borehole logs included in Appendix II.

2.3 Sampling and Laboratory Analysis

2.3.1 Soil

One most apparent “worst case” soil sample, based on vapour concentrations as well as visual and/or olfactory considerations, recovered from each borehole was submitted for laboratory analysis of BTEX and PHCs (F1-F4). Two additional soil samples were submitted for laboratory analysis of BTEX and PHCs (F1-F4) as part of the geotechnical investigation.

In addition, representative soil samples were submitted for pH analysis and grain size distribution analysis to confirm the Site Condition Standards applicable to the Site as provided in the MOECC document entitled “*Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*”, dated April 15, 2011 (*MOECC Standards*). Two additional soil samples were submitted for pH analysis as part of the geotechnical investigation.

The borehole locations are shown on Figure 2.

2.3.2 Groundwater

On June 15, 2017, the newly installed groundwater monitoring well was purged prior to sampling by removing three to five well casing volumes, or was purged until dry, in accordance with Pinchin’s SOPs. Upon groundwater recovery, groundwater samples were collected from these monitoring wells and submitted for laboratory analysis of BTEX and PHCs (F1-F4).

All monitoring well development, purging and sampling activities were conducted using dedicated inertial pumps comprised of Waterra polyethylene tubing and foot valves to draw groundwater to the surface.

The monitoring well locations are shown on Figure 2.

2.3.3 Analytical Laboratory

Selected soil and groundwater samples were delivered to Maxxam Analytics Inc. (Maxxam) in Ottawa, Ontario for analysis. Maxxam is an independent laboratory accredited by the Standards Council of Canada and the Canadian Association for Laboratory Accreditation. Formal chain of custody records of the sample submissions were maintained between Pinchin and the staff at Maxxam.

2.4 QA/QC Protocols

Various quality assurance/quality control (QA/QC) protocols were followed during the Phase II ESA to ensure that representative samples were obtained and that representative analytical data were reported by the laboratory.

Field QA/QC protocols that were employed by Pinchin included the following:

- Soil samples were extracted from the interior of the sampling device (where possible), rather than from areas in contact with the sampler walls to minimize the potential for cross-contamination;
- Soil and groundwater samples were placed in laboratory-supplied glass sample jars;
- The monitoring well was developed following installation and was purged to remove stagnant water prior to sample collection so that representative groundwater samples could be obtained. Dedicated purging and sampling equipment was used for monitoring well development, purging and sampling to minimize the potential for cross-contamination;
- Soil and groundwater samples were placed in coolers on ice immediately upon collection, with appropriate sample temperatures maintained prior to submission to the laboratory;
- Dedicated and disposable nitrile gloves were used for sample handling;
- Non-dedicated monitoring and sampling equipment was cleaned before initial use and between uses to minimize the potential for cross-contamination by washing with an Alconox™/potable water mixture followed by a deionized water rinse; and
- Sample collection and handling procedures were performed in general accordance with the *MOECC Sampling Guideline*, the *APGO Guideline* and Pinchin's SOPs for Phase II ESAs.

Maxxam's internal laboratory QA/QC consisted of the analysis of laboratory duplicate, method blank, matrix spike and spiked blank samples, an evaluation of relative percent difference (RPD) calculations for laboratory duplicate samples, and an evaluation of surrogate recoveries.

2.5 Ontario Water Well Records

Ontario Regulation 903 (as amended) requires that all wells installed to depths greater than 3.0 mbgs have a water well record completed by a licensed well technician. The owner of the monitoring well must keep the water well record on file for a period of two years and the monitoring wells must be decommissioned as per Ontario Regulation 903 (as amended) if monitoring wells are no longer in use.



Strata is a licensed well driller under Ontario Regulation 903 (as amended), and submitted a water well record to the MOECC and the Client to fulfill the requirements of Ontario Regulation 903 (as amended).

2.6 Site Condition Standards

The Site is a property located within the City of Ottawa. It is Pinchin's understanding that potable water for the Site and surrounding area is supplied by the City of Ottawa, with the Ottawa River serving as the water source.

Ontario Regulation 153/04 (as amended) states that a site is classified as an "environmentally sensitive area" if the pH of the surface soil (less than 1.5 mbgs) is less than 5 or greater than 9, the pH of the subsurface soil (greater than 1.5 mbgs) is less than 5 or greater than 11, or if the site is an area of natural significance or is adjacent to or contains land within 30 metres of an area of natural significance. Two representative soil samples collected from the boreholes advanced at the Site were submitted for pH analysis. The pH values measured in the submitted soil samples were within the limits for non-sensitive sites. The Site is also not an area of natural significance and it is not adjacent to, nor does it contain land within 30 metres of, an area of natural significance. As such, the Site is not an environmentally sensitive area.

One representative soil sample collected from the boreholes advanced as part of the Phase II ESA at the Site was submitted for 75 micron single-sieve grain size analysis. Based on the results of this analysis, the soil at the Site was interpreted to be medium/fine-textured; however, two representative soil samples collected from the boreholes advanced as part of the geotechnical investigation at the Site were submitted for full grain size analysis. Based on the results of this analysis, the soil at the Site is interpreted to be coarse-textured for the purpose of selecting the appropriate *MOECC Standards*.

The pH and grain size analytical results are summarized in Table 2.

The results of the borehole drilling program indicated that the overburden was less than two metres thick over more than one-third of the Site area, classifying the Site as a "shallow soil property" as per Ontario Regulation 153/04 (as amended).

Based on the above, the appropriate Site Condition Standards for the Site are:

- "Table 7: Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition", provided in the *MOECC Standards (Table 7 Standards)* for:
 - Coarse-textured soils; and
 - Residential/parkland/institutional property use.

As such, the analytical results have been compared to these *Table 7 Standards*.

3.0 RESULTS

3.1 Site Geology and Hydrogeology

Based on the soil samples recovered during the borehole drilling program, the soil stratigraphy at the drilling locations generally consists of fill material comprised of sand and gravel and some silt to a depth between approximately 0 and 1.5 mbgs. Moist to wet soil conditions were generally observed below 1.5 mbgs.

A detailed description of the subsurface stratigraphy encountered during borehole advancement is documented in the borehole logs located in Appendix II.

The Ottawa River is located approximately 500 m northwest of the Site. Groundwater flow at the Site is inferred to be towards the northwest based on the location of the Ottawa River.

3.2 Soil Headspace Vapour Concentrations

Vapour concentrations measured in the headspace of soil samples collected during the drilling investigation are presented on the borehole logs in Appendix II and ranged from 0.0 parts per million by volume (ppm_v) to a maximum of 6.9 ppm_v in soil sample SS-3 collected at a depth of 1.5 to 2.4 mbgs in borehole MW-2.

3.3 Field Observations

No odours or staining were observed in the soil samples collected during the borehole drilling program, with the exception of soil sample SS-3 collected at borehole MW-2 at a depth of approximately 1.5 to 2.4 mbgs which exhibited a slight PHC-like odours.

The groundwater at monitoring well MW-2 exhibited a slight PHC-like odour and had a minor PHC-like sheen.

3.4 Analytical

3.4.1 Soil

As indicated in Table 2, reported concentrations of BTEX and PHCs (F1-F4) and metals in the soil samples submitted for analysis met the *Table 7 Standards*, with the following exceptions:

- Soil sample SS-2 collected at borehole MW-2 exceeded the *Table 7 Standards* for PHCs (F2) (160 micrograms per gram (µg/g) vs. the *Table 7 Standard* of 98 µg/g); and
- Soil sample SS-3 collected at borehole BH-100 exceeded the *Table 7 Standards* for PHCs (F2) (190 µg/g vs. the *Table 7 Standard* of 98 µg/g).

The laboratory Certificates of Analysis for the soil samples are provided in Appendix IV.

3.4.2 Groundwater

As indicated in Table 3, reported concentrations in the groundwater sample submitted for analysis of BTEX and PHCs (F1-F4) met the *Table 7 Standards* with the exception of the PHC F2 concentration of 230 ug/L vs. the *Table 7 Standards* of 150 ug/L reported for MW-2.

As indicated in Table 3, reported concentrations of BTEX and PHCs (F1-F4) in the groundwater samples submitted for analysis met the *Table 7 Standards*, with the exception of the groundwater sample collected from monitoring well MW-2, which reported concentrations of benzene (3.6 micrograms per litre (µg/L) vs. the *Table 7 Standard* of 0.5 µg/L) and PHCs F2 (230 µg/L vs. the *Table 7 Standard* of 98 µg/L) that exceeded the *Table 7 Standards*.

The laboratory Certificate of Analysis for the groundwater samples are provided in Appendix IV.

It should be noted that drilling on the Site, along the west property line in particular, was limited due to surface obstructions as well as overhead utilities, both of which limited the drill rig's maneuverability in advancing boreholes any further west than that depicted in Figure 2. In addition, drilling within the Site Building footprint was not spatially/logistically possible. Thus, impacts to soil and groundwater may be present further west of MW-2 and/or beneath the Site Building; however, it is Pinchin's understanding that any such impacts, if present, would be dealt with at the time of a proposed Site redevelopment.

4.0 FINDINGS AND CONCLUSIONS

Based on the work completed, the following is a summary of the activities and findings of this Phase II ESA:

- Pinchin retained Strata to advance two boreholes at the Site on June 14, 2017 and on September, 26, 2017 (as part of a geotechnical investigation). The boreholes were advanced to a maximum depth of 2.7 mbgs using a GeoProbe 7822DT direct push drill rig. Auger refusal was completed on inferred bedrock in borehole MW-2;
- The soil stratigraphy at the drilling locations generally consists of fill material comprised of sand and gravel and some silt to a depth between approximately 0 and 1.5 mbgs. Moist to wet soil conditions were generally observed below 1.5 mbgs;
- Based on Site-specific information, the soil and groundwater quality was assessed based on the Ontario Ministry of the Environment and Climate Change *Table 7 Standards* for residential/parkland/institutional land use and coarse-textured soil;

- Two “worst case” soil samples based on the results of field screening were submitted for laboratory analysis of a combination of BTEX and PHCs (F1-F4). In addition, two additional soil samples were submitted for laboratory analysis of BTEX and PHCs (F1-F4) as part of a recent geotechnical investigation completed by Pinchin;
- A groundwater sample was collected from the monitoring well installed by Pinchin on June 15, 2017, and were submitted for laboratory analyses of a combination of BTEX and PHCs (F1-F4);
- The reported concentrations of PHCs (F1-F4) and BTEX in the soil samples submitted for analysis met the *Table 7 Standards*, with the exception of the soil samples collected from boreholes MW-2 and BH-100, which reported concentrations of PHCs (F2) that marginally exceeded the *Table 7 Standards*; and
- The reported concentrations of PHCs (F1-F4) and BTEX in the groundwater sample (MW-2) submitted for analysis reported a concentrations of benzene and PHCs (F2) that marginally exceeded the *Table 7 Standards*.

Based on the findings of this Phase II ESA, soil impacts marginally exceeding the *Table 7 Standards* were identified at boreholes MW-2 and BH-100. In addition, groundwater impacts marginally exceeding the *Table 7 Standards* were identified at borehole MW-2. It is Pinchin’s understanding that the Client intends to redevelop the Site with a two-storey commercial/residential building. As such, it is Pinchin’s opinion that no further subsurface assessment work is warranted at this time; and that any soil or groundwater impacts at the Site could be addressed upon redevelopment of the Site.

5.0 TERMS AND LIMITATIONS

This Phase II ESA was performed for NRML Real Co. (Client) in order to investigate potential environmental impacts at 386 Richmond Road, Ottawa, Ontario (Site). The term recognized environmental condition means the presence or likely presence of any hazardous substance on a property under conditions that indicate an existing release, past release, or a material threat of a release of a hazardous substance into structures on the property or into the ground, groundwater, or surface water of the property. This Phase II ESA does not quantify the extent of the current and/or recognized environmental condition or the cost of any remediation.

Conclusions derived are specific to the immediate area of study and cannot be extrapolated extensively away from sample locations. Samples have been analyzed for a limited number of contaminants that are expected to be present at the Site, and the absence of information relating to a specific contaminant does not indicate that it is not present.



No environmental site assessment can wholly eliminate uncertainty regarding the potential for recognized environmental conditions on a property. Performance of this Phase II ESA to the standards established by Pinchin is intended to reduce, but not eliminate, uncertainty regarding the potential for recognized environmental conditions on the Site, and recognizes reasonable limits on time and cost.

This Phase II ESA was performed in general compliance with currently acceptable practices for environmental site investigations, and specific Client requests, as applicable to this Site. The scope of work completed by Pinchin, as part of this Phase II ESA is not sufficient (in and of itself) to meet the requirements for the submission of a Record of Site Condition (RSC) in accordance with Ontario Regulation 153/04 (as amended). If an RSC is an intended end product of work conducted at the Site, further consultation and/or work will be required. The scope of work completed by Pinchin, as part of this Phase II ESA is not sufficient (in and of itself) to meet the provincial requirements for a Phase II ESA. If the report is expected to be sent to the MOE, or is sent to the MOE through any other means, further consultation and/or work will be required.

This report was prepared for the exclusive use of the Client, subject to the terms, conditions and limitations contained within the duly authorized proposal for this project. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, is the sole responsibility of such third parties. Pinchin accepts no responsibility for damages suffered by any third party as a result of decisions made or actions conducted.

If additional parties require reliance on this report, written authorization from Pinchin will be required. Pinchin disclaims responsibility of consequential financial effects on transactions or property values, or requirements for follow-up actions and costs. No other warranties are implied or expressed. Furthermore, this report should not be construed as legal advice. Pinchin will not provide results or information to any party unless disclosure by Pinchin is required by law.

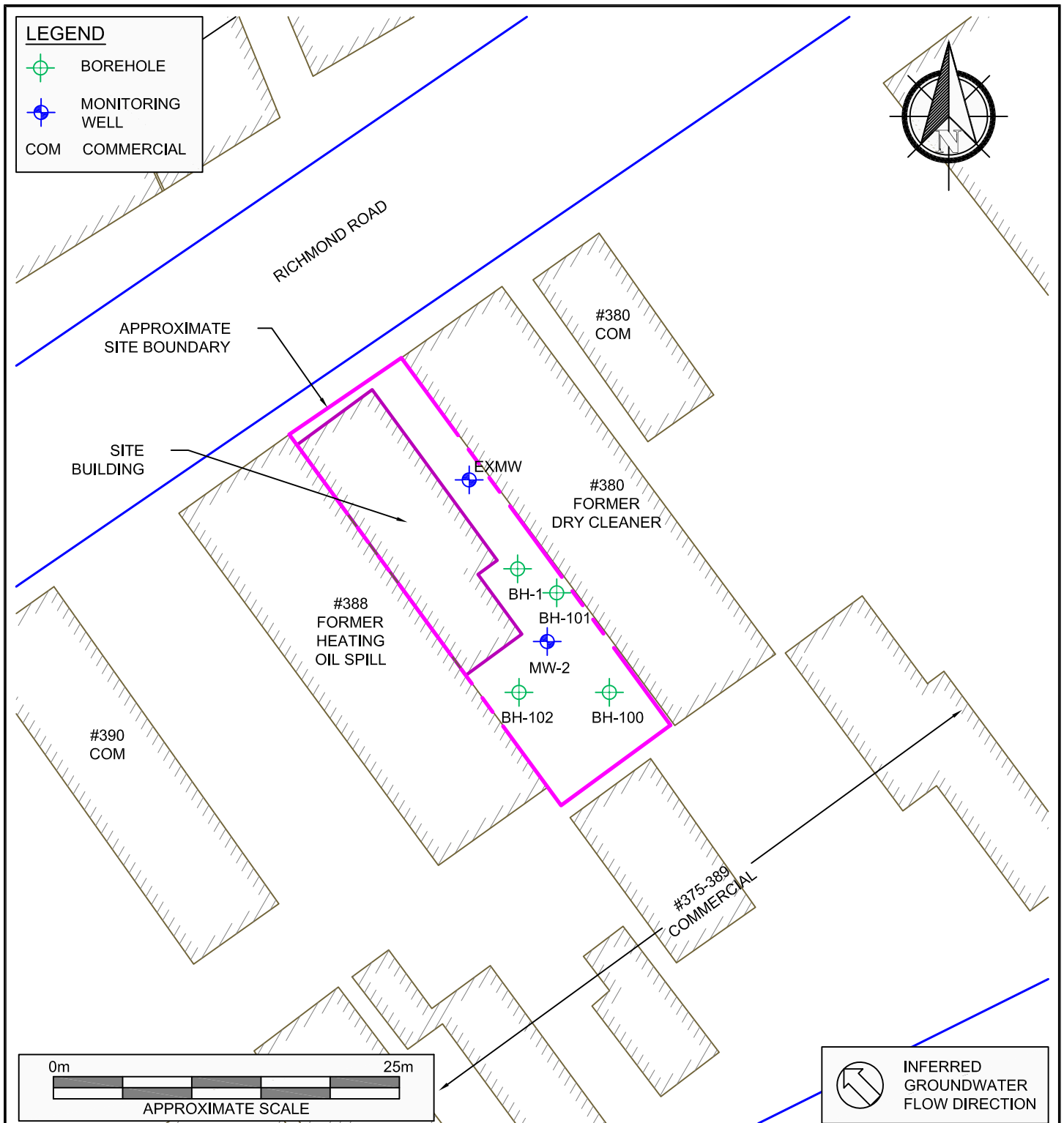
Pinchin makes no other representations whatsoever, including those concerning the legal significance of its findings, or as to other legal matters touched on in this report, including, but not limited to, ownership of any property, or the application of any law to the facts set forth herein. With respect to regulatory compliance issues, regulatory statutes are subject to interpretation and these interpretations may change over time.

206278.001 Phase II ESA 386 Richmond Road Ottawa, ON NRML Real Co
Template: Master Report for Phase II ESA - Stage 2 PSI, EDR, April 28, 2017

APPENDIX I
Figures



PROJECT NAME			
PHASE II ENVIRONMENTAL SITE ASSESSMENT			
CLIENT NAME			
NRML REAL CO.			
PROJECT LOCATION			
386 RICHMOND ROAD, OTTAWA, ONTARIO			
FIGURE NAME			FIGURE NO.
KEY MAP			
APPROXIMATE SCALE	PROJECT NO.	DATE	
AS SHOWN	206278.001	NOV 2017	1



	PROJECT NAME			
	PHASE II ENVIRONMENTAL SITE ASSESSMENT			
	CLIENT NAME			
	NRML REAL CO.			
	PROJECT LOCATION			
	386 RICHMOND ROAD, OTTAWA, ONTARIO			
FIGURE NAME		FIGURE NO.		
BOREHOLE AND MONITORING WELL LOCATION PLAN		2		
APPROXIMATE SCALE	PROJECT NO.			DATE
AS SHOWN	206278.001			NOV 2017

APPENDIX II
Borehole Logs



Log of Borehole: BH-1

Project #: 206278.001

Logged By: MK

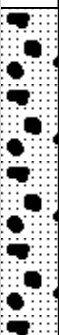
Project: Phase II Environmental Site Assessment

Client: NRML Real Co.

Location: 386 Richmond Road, Ottawa, Ontario

Drill Date: June 14, 2017

Project Manager: MR

SUBSURFACE PROFILE					SAMPLE				
Depth	Symbol	Description	Measured Depth (m)	Monitoring Well Details	Sampler #	Recovery (%)	Sample ID	Soil Vapour Concentration (ppm)	Laboratory Analysis
0 ft 0 m		Ground Surface	0.00	↑ No Monitoring Well Installed ↓					
1		Sand and Gravel Fill Grey, damp.			1	40	SS-1	0.0	pH
2							SS-2	0.0	PHCs, BTEX
3 1		End of Borehole	1.37						
4		Auger refusal at 1.37 mbgs on Inferred Bedrock.							
5									
6 2									
7									
8									
9									
10 3									
11									
12									
13 4									
14									
15									

Contractor: Strata Drilling Group Inc.

Pinchin Ltd.

Grade Elevation: NM

Drilling Method: Direct Push

555 Legget Drive

Top of Casing Elevation: NA

Well Casing Size: NA

Suite 1001, Tower A

Sheet: 1 of 1

Kanata, ON K2K2X3

Borehole Log: BH100



1 Hines Road, Suite 200
Kanata, Ontario

Project No.: 212056

Project: Geotechnical Investigation

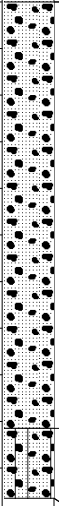
Client: Normal Real Estate

Location: 386 Richmond Road, Ottawa, Ontario

Logged By: W.Tabaczuk

Entered By: W.Tabaczuk

Reviewed By: V.Marshall

SUBSURFACE PROFILE				SAMPLE				Dynamic Penetration Resistance								Remarks				
Depth (m)	Strata Plot	Description	Elevation	Sample No.	Sample Type	Blows/0.3m	Recovery (%)	Blows / 0.3 m				Undrained Shear Strength (Cu, kPa)					Water Content (%)			
								10	30	50	70	90	50	100	150		200	250	10	20
0		Ground Surface Asphalt ~ 38 mm Fill - Sandy gravel, some silt, damp, brown, loose to very dense Till - Silty sand and gravel, trace to some clay, moist, brown, very dense End of Borehole Due to SPT refusal on probable bedrock	0.0 <																	

Drilled By: Strata Drilling Group

Drill Method: Direct Push/Split Spoon

Drill Date: September 26, 2017

Datum: N/A

Ground Elevation: N/A

Sheet: 1 of 1

This data relates to the boring and shouldn't be interpreted as being indicative of the whole site BH100

Borehole Log: BH101



1 Hines Road, Suite 200
Kanata, Ontario

Project No.: 212056

Project: Geotechnical Investigation

Client: Normal Real Estate

Location: 386 Richmond Road, Ottawa, Ontario

Logged By: W.Tabaczuk

Entered By: W.Tabaczuk

Reviewed By: V.Marshall

SUBSURFACE PROFILE				SAMPLE				Dynamic Penetration Resistance Blows / 0.3 m 10 30 50 70 90	Undrained Shear Strength (Cu, kPa) 50 100 150 200 250	Water Content (%) 10 20 30 40	Remarks
Depth (m)	Strata Plot	Description	Elevation	Sample No.	Sample Type	Blows/0.3m	Recovery (%)				
0		Ground Surface	0.0								
		Asphalt ~ 38 mm Fill - Sandy gravel, some silt, damp, brown, compact to very dense		SS1	SS	19	70	19			
1				SS2	SS	78	100	78			
			-1.4								
		End of Borehole Due to SPT refusal on probable bedrock									
2											
3											
4											
5											

Drilled By: Strata Drilling Group

Drill Method: Direct Push/Split Spoon

Drill Date: September 26, 2017

Datum: N/A

Ground Elevation: N/A

Sheet: 1 of 1

This data relates to the boring and shouldn't be interpreted as being indicative of the whole site BH101

Borehole Log: BH102



1 Hines Road, Suite 200
Kanata, Ontario

Project No.: 212056

Project: Geotechnical Investigation

Client: Normal Real Estate

Location: 386 Richmond Road, Ottawa, Ontario

Logged By: W.Tabaczuk

Entered By: W.Tabaczuk

Reviewed By: V.Marshall

SUBSURFACE PROFILE				SAMPLE				Dynamic Penetration Resistance		Water Content (%)				Remarks
Depth (m)	Strata Plot	Description	Elevation	Sample No.	Sample Type	Blows/0.3m	Recovery (%)	Blows / 0.3 m						
								10	30	50	70	90	50	100
0		Ground Surface	0.0											At drilling completion groundwater was not encountered
		Asphalt ~ 38 mm Fill - Sandy gravel, some silt, damp, brown, loose to very dense		SS1	SS	4	60	4						
1				SS2	SS	64	50	64						
		End of Borehole Due to SPT refusal on probable bedrock	-1.5											
2														
3														
4														
5														

Drilled By: Strata Drilling Group

Drill Method: Direct Push/Split Spoon

Drill Date: September 26, 2017

Datum: N/A

Ground Elevation: N/A

Sheet: 1 of 1

This data relates to the boring and shouldn't be interpreted as being indicative of the whole site BH102



Log of Borehole: MW-2

Project #: 206278.001

Logged By: MK

Project: Phase II Environmental Site Assessment

Client: NRML Real Co.

Location: 386 Richmond Road, Ottawa, Ontario

Drill Date: June 14, 2017

Project Manager: MR

SUBSURFACE PROFILE					SAMPLE				
Depth	Symbol	Description	Measured Depth (m)	Monitoring Well Details	Sampler #	Recovery (%)	Sample ID	Soil Vapour Concentration (ppm)	Laboratory Analysis
0		Ground Surface	0.00						
1		Sand and Gravel Fill Brown, damp.			1	10	SS-1	0.0	
2									
3									
4		Wet, PHC-like odour from 1.52 to 2.44 mbgs.					SS-2	0.0	
5									
6									
7					2		SS-3	6.9	PHCs, BTEX
8		Sample refusal at 2.44 mbgs. Augered to 2.74 mbgs.	2.44						
9			2.74						
10		End of Borehole							
11									
12		Auger refusal at 2.74 mbgs on Inferred Bedrock.							
13									
14									
15									

Contractor: Strata Drilling Group Inc.

Pinchin Ltd.

Grade Elevation: NM

Drilling Method: Direct Push

1 Hines Road, Suite 200

Top of Casing Elevation: NA

Well Casing Size: NA

Kanata, ON K2K 3C7

Sheet: 1 of 1

APPENDIX III
Summary Tables

TABLE 1
pH AND GRAIN SIZE ANALYSIS FOR SOIL
NRML Real Co.
386 Richmond Road, Ottawa, Ontario

Parameter	Units	MOECC Site Condition Standard Selection Criteria	Sample Designation				
			Sample Collection Date (dd/mm/yyyy)				
			Sample Depth (mbgs)				
			BH-1 SS-1	MW-2 SS-3	BH-1 G.S.	BH-100	BH-101
			14/06/2017	14/06/2017	14/06/2017	26/09/2017	26/09/2017
			0.0-0.8	1.5-2.4	Composite	0.5-2.1	0.5-1.4
pH		Surface: 5 < pH < 9	7.66	7.90	NA	NA	NA
		Subsurface: 5 < pH < 11					
Sieve #200 <0.075 mm	%	50%	NA	NA	71	11.1	19.8
Sieve #200 >0.075 mm	%	50%	NA	NA	29	88.9	80.2
Grain Size Classification					FINE	COARSE	COARSE

Notes:

BOLD	Environmentally Sensitive Area (Based Upon pH of Surface Soil)
BOLD	Environmentally Sensitive Area (Based Upon pH of Sub-Surface Soil)
NA	Not Analysed
mbgs	Metres Below Ground Surface

TABLE 2
PETROLEUM HYDROCARBON ANALYSIS FOR SOIL
NRML Real Co.
386 Richmond Road, Ottawa, Ontario

Parameter	MOECC Table 7 Standards*	Sample Designation			
		Sample Collection Date (dd/mm/yyyy)			
		Sample Depth (mbgs)			
		BH-1 SS-2	MW-2 SS-3	BH-100 SS-3	BH-101 SS-2
		14/06/2017	14/06/2017	26/09/2017	26/09/2017
		0.8-1.4	1.5-2.4	1.5-2.1	0.8-1.4
Benzene	0.21	<0.020	0.022	<0.02	<0.02
Toluene	2.3	0.04	0.068	<0.02	<0.02
Ethylbenzene	2	<0.020	<0.020	<0.02	<0.02
Xylenes (Total)	3.1	<0.040	0.091	<0.04	<0.04
Petroleum Hydrocarbons F1 (C ₆ - C ₁₀)	55	<10	<10	<10	<10
Petroleum Hydrocarbons F2 (>C ₁₀ - C ₁₆)	98	<10	160	190	<10
Petroleum Hydrocarbons F3 (>C ₁₆ - C ₃₄)	300	<50	250	220	<50
Petroleum Hydrocarbons F4 (>C ₃₄ - C ₅₀)	2800	<50	190	<50	<50

Notes:

MOECC Table 3 Standards* Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, Table 7 Standards, Coarse-Textured Soils, Non-Potable Groundwater Condition, for Residential/Parkland/Institutional Property Use.

BOLD	Exceeds Site Condition Standard
BOLD	Reportable Detection Limit Exceeds Site Condition Standard
Units	All Units in µg/g
mbgs	Metres Below Ground Surface
BTEX	Benzene, Toluene, Ethylbenzene and Xylenes

TABLE 3
PETROLEUM HYDROCARBON ANALYSIS FOR GROUNDWATER
NRML Real Co.
386 Richmond Road, Ottawa, Ontario

<i>Parameter</i>	<i>MOECC Table 7 Standards*</i>	<i>Sample Designation</i>
		<i>Sample Collection Date (dd/mm/yyyy)</i>
		<i>MW-2</i>
		<i>15/06/2017</i>
Benzene	0.5	3.6
Toluene	320	4
Ethylbenzene	54	0.51
Xylenes (Total)	72	3.3
Petroleum Hydrocarbons F1 (C ₆ - C ₁₀)	55	<25
Petroleum Hydrocarbons F2 (>C ₁₀ - C ₁₆)	98	230
Petroleum Hydrocarbons F3 (>C ₁₆ - C ₃₄)	300	<200
Petroleum Hydrocarbons F4 (>C ₃₄ - C ₅₀)	2800	<200

Notes:

MOECC Table 3 Standards*

Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, Table 7 Standards, Coarse-Textured Soils, Non-Potable Groundwater Condition, for Residential/Parkland/Institutional Property Use.

BOLD
BOLD

Units

Exceeds Site Condition Standard

Reportable Detection Limit Exceeds Site Condition Standard

All Units in µg/L

APPENDIX IV
Laboratory Certificates of Analysis

Your Project #: 212056
Your C.O.C. #: 64440

Attention: Wesley Tabaczuk

Pinchin Ltd
Ottawa
1 Hines Road
Suite 200
Kanata, ON
K2K 3C7

Report Date: 2017/10/02
Report #: R4754134
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7L2929

Received: 2017/09/27, 16:00

Sample Matrix: Soil
Samples Received: 2

Analyses	Date		Laboratory Method	Reference
	Quantity	Extracted	Analyzed	
Petroleum Hydro. CCME F1 & BTEX in Soil (1)	2	N/A	2017/09/29 OTT SOP-00002	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil (2)	2	2017/09/29	2017/09/30 OTT SOP-00001	CCME CWS
Moisture	2	N/A	2017/10/02 CAM SOP-00445	McKeague 2nd ed 1978

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported: unless indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) No lab extraction date is given for F1BTEX & VOC samples that are field preserved with methanol. Extraction date is the date sampled unless otherwise stated.

(2) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

Your Project #: 212056
Your C.O.C. #: 64440

Attention: Wesley Tabaczuk

Pinchin Ltd
Ottawa
1 Hines Road
Suite 200
Kanata, ON
K2K 3C7

Report Date: 2017/10/02
Report #: R4754134
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7L2929
Received: 2017/09/27, 16:00

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Jonathan Urben, Senior Project Manager
Email: jurben@maxxam.ca
Phone# (613) 274-0573

=====

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

O.REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		FFG019	FFG020		
Sampling Date		2017/09/26 11:00	2017/09/26 11:00		
COC Number		64440	64440		
	UNITS	BH 100-SS3	BH 101-SS2	RDL	QC Batch
Inorganics					
Moisture	%	24	10	0.2	5188999
BTEX & F1 Hydrocarbons					
Benzene	ug/g	<0.02	<0.02	0.02	5182639
Toluene	ug/g	<0.02	<0.02	0.02	5182639
Ethylbenzene	ug/g	<0.02	<0.02	0.02	5182639
o-Xylene	ug/g	<0.02	<0.02	0.02	5182639
p+m-Xylene	ug/g	<0.04	<0.04	0.04	5182639
Total Xylenes	ug/g	<0.04	<0.04	0.04	5182639
F1 (C6-C10)	ug/g	<10	<10	10	5182639
F1 (C6-C10) - BTEX	ug/g	<10	<10	10	5182639
F2-F4 Hydrocarbons					
F2 (C10-C16 Hydrocarbons)	ug/g	190	<10	10	5189010
F3 (C16-C34 Hydrocarbons)	ug/g	220	<50	50	5189010
F4 (C34-C50 Hydrocarbons)	ug/g	<50	<50	50	5189010
Reached Baseline at C50	ug/g	Yes	Yes		5189010
Surrogate Recovery (%)					
1,4-Difluorobenzene	%	101	96		5182639
4-Bromofluorobenzene	%	99	103		5182639
D10-Ethylbenzene	%	120	126		5182639
D4-1,2-Dichloroethane	%	113	108		5182639
o-Terphenyl	%	79	79		5189010
RDL = Reportable Detection Limit					
QC Batch = Quality Control Batch					

Maxxam Job #: B7L2929
Report Date: 2017/10/02

Pinchin Ltd
Client Project #: 212056
Sampler Initials: WMT

TEST SUMMARY

Maxxam ID: FFG019
Sample ID: BH 100-SS3
Matrix: Soil

Collected: 2017/09/26
Shipped:
Received: 2017/09/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	5182639	N/A	2017/09/29	Lyndsey Hart
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	5189010	2017/09/29	2017/09/30	Arezoo Habibagahi
Moisture	BAL	5188999	N/A	2017/10/02	Paul Rubinato

Maxxam ID: FFG020
Sample ID: BH 101-SS2
Matrix: Soil

Collected: 2017/09/26
Shipped:
Received: 2017/09/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	5182639	N/A	2017/09/29	Lyndsey Hart
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	5189010	2017/09/29	2017/09/30	Arezoo Habibagahi
Moisture	BAL	5188999	N/A	2017/10/02	Paul Rubinato

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	5.3°C
-----------	-------

Results relate only to the items tested.

QUALITY ASSURANCE REPORT

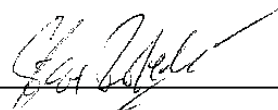
QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits			
5182639	LHR	Matrix Spike	1,4-Difluorobenzene	2017/09/28		97	%	60 - 140			
			4-Bromofluorobenzene	2017/09/28		93	%	60 - 140			
			D10-Ethylbenzene	2017/09/28		128	%	30 - 130			
			D4-1,2-Dichloroethane	2017/09/28		100	%	60 - 140			
			Benzene	2017/09/28		96	%	60 - 140			
			Toluene	2017/09/28		93	%	60 - 140			
			Ethylbenzene	2017/09/28		97	%	60 - 140			
			o-Xylene	2017/09/28		93	%	60 - 140			
			p+m-Xylene	2017/09/28		99	%	60 - 140			
			F1 (C6-C10)	2017/09/28		104	%	60 - 140			
			5182639	LHR	Spiked Blank	1,4-Difluorobenzene	2017/09/28		98	%	60 - 140
4-Bromofluorobenzene	2017/09/28		96	%	60 - 140						
D10-Ethylbenzene	2017/09/28		111	%	30 - 130						
D4-1,2-Dichloroethane	2017/09/28		104	%	60 - 140						
Benzene	2017/09/28		102	%	60 - 140						
Toluene	2017/09/28		97	%	60 - 140						
Ethylbenzene	2017/09/28		102	%	60 - 140						
o-Xylene	2017/09/28		99	%	60 - 140						
p+m-Xylene	2017/09/28		101	%	60 - 140						
F1 (C6-C10)	2017/09/28		98	%	80 - 120						
5182639	LHR	Method Blank	1,4-Difluorobenzene	2017/09/28		96	%	60 - 140			
			4-Bromofluorobenzene	2017/09/28		94	%	60 - 140			
			D10-Ethylbenzene	2017/09/28		110	%	30 - 130			
			D4-1,2-Dichloroethane	2017/09/28		105	%	60 - 140			
			Benzene	2017/09/28	<0.02		ug/g				
			Toluene	2017/09/28	<0.02		ug/g				
			Ethylbenzene	2017/09/28	<0.02		ug/g				
			o-Xylene	2017/09/28	<0.02		ug/g				
			p+m-Xylene	2017/09/28	<0.04		ug/g				
			Total Xylenes	2017/09/28	<0.04		ug/g				
			F1 (C6-C10)	2017/09/28	<10		ug/g				
			F1 (C6-C10) - BTEX	2017/09/28	<10		ug/g				
			5182639	LHR	RPD	Benzene	2017/09/28	NC		%	50
			Toluene	2017/09/28	NC		%	50			
Ethylbenzene	2017/09/28	NC		%	50						
o-Xylene	2017/09/28	NC		%	50						
p+m-Xylene	2017/09/28	NC		%	50						
Total Xylenes	2017/09/28	NC		%	50						
F1 (C6-C10)	2017/09/28	NC		%	50						
F1 (C6-C10) - BTEX	2017/09/28	NC		%	50						
5188999	PRB	RPD	Moisture	2017/10/02	0		%	50			
5189010	AH1	Matrix Spike	o-Terphenyl	2017/09/30		71	%	30 - 130			
			F2 (C10-C16 Hydrocarbons)	2017/09/30		87	%	50 - 130			
			F3 (C16-C34 Hydrocarbons)	2017/09/30		87	%	50 - 130			
			F4 (C34-C50 Hydrocarbons)	2017/09/30		87	%	50 - 130			
5189010	AH1	Spiked Blank	o-Terphenyl	2017/09/30		81	%	30 - 130			
			F2 (C10-C16 Hydrocarbons)	2017/09/30		82	%	80 - 120			
			F3 (C16-C34 Hydrocarbons)	2017/09/30		82	%	80 - 120			
			F4 (C34-C50 Hydrocarbons)	2017/09/30		82	%	80 - 120			
5189010	AH1	Method Blank	o-Terphenyl	2017/09/30		77	%	30 - 130			
			F2 (C10-C16 Hydrocarbons)	2017/09/30	<10		ug/g				
			F3 (C16-C34 Hydrocarbons)	2017/09/30	<50		ug/g				
			F4 (C34-C50 Hydrocarbons)	2017/09/30	<50		ug/g				
5189010	AH1	RPD	F2 (C10-C16 Hydrocarbons)	2017/09/30	NC		%	50			

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			F3 (C16-C34 Hydrocarbons)	2017/09/30	NC		%	50
			F4 (C34-C50 Hydrocarbons)	2017/09/30	NC		%	50
Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement. Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference. Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy. Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination. Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency. NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).								

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Steve Roberts, Ottawa Lab Manager

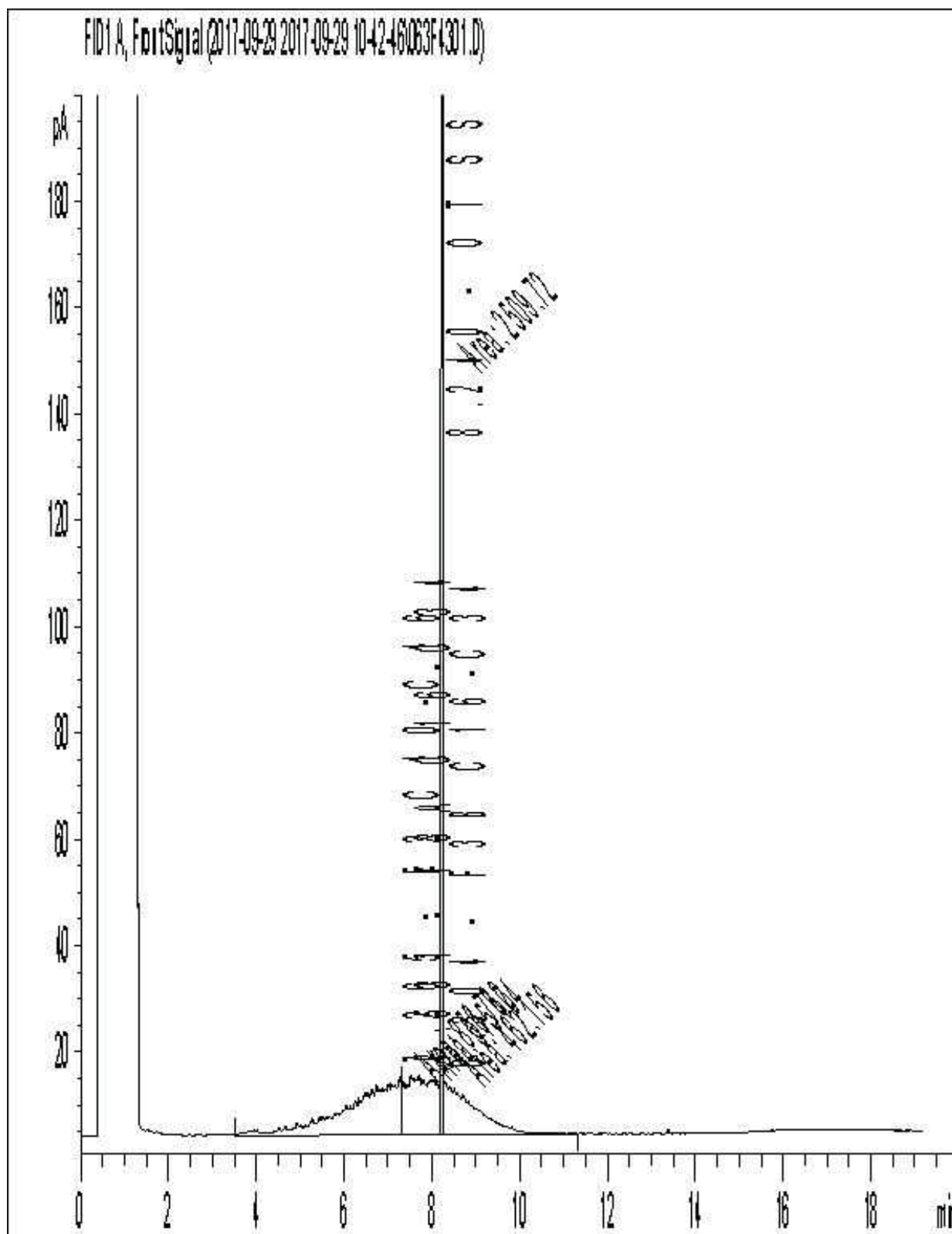
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

CHAIN OF CUSTODY RECORD 64440

Page 1 of 1

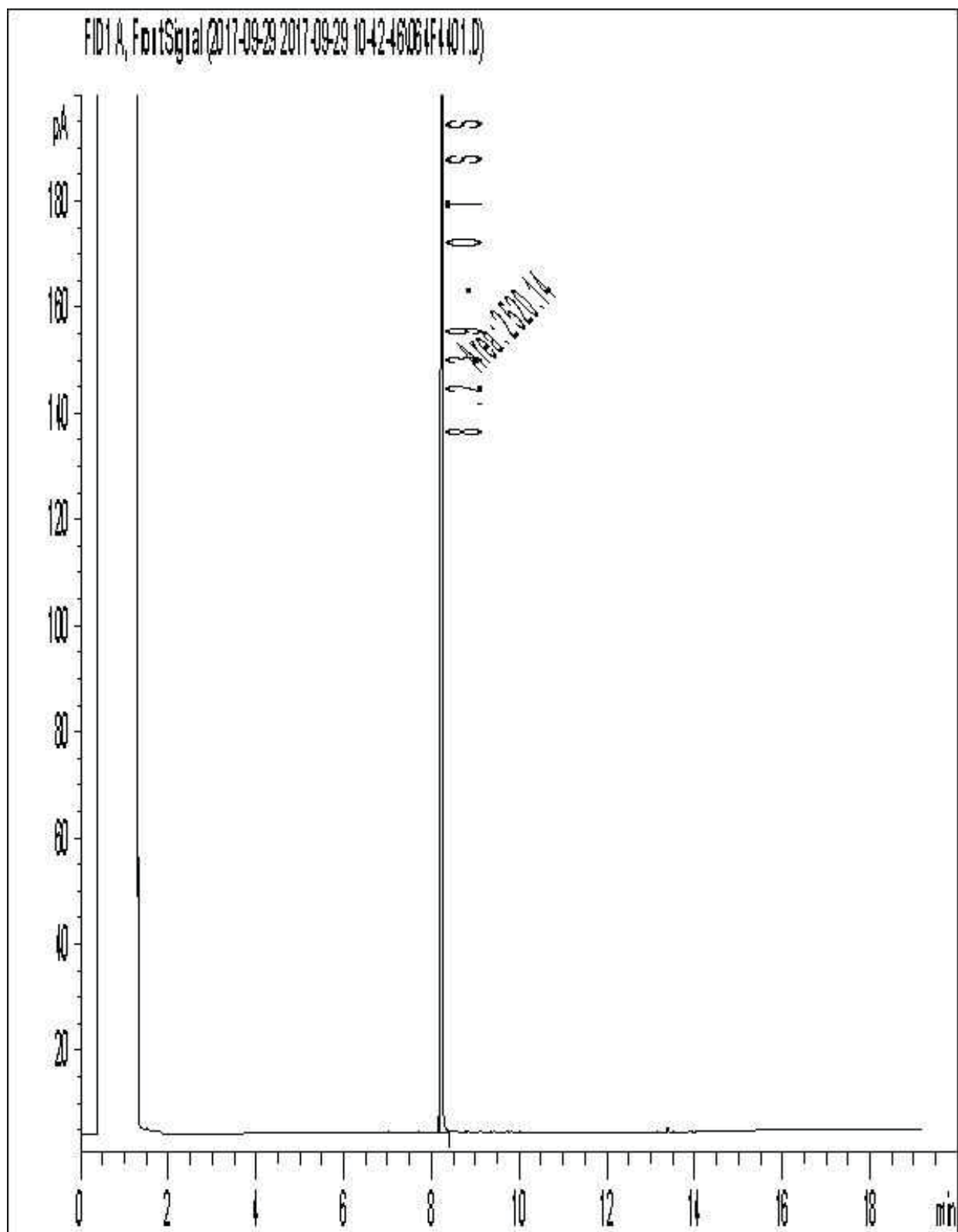
Invoice Information			Report Information (If differs from invoice)			Project Information (where applicable)			Turnaround Time (TAT) Required		
Company Name: <u>Pinchin</u>			Company Name: <u>Wesley Tabaczuk</u>			Quotation #: _____			☒ Regular TAT (5-7 days) Most analyses		
Contact Name: <u>Ottawa</u>			Contact Name: _____			P.O. #/ AFER: _____			PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS		
Address: _____			Address: _____			Project #: <u>217056</u>			Rush TAT (Surcharges will be applied)		
Phone: _____ Fax: _____			Phone: _____ Fax: _____			Site Location: _____			☐ 1 Day ☐ 2 Days ☐ 3-4 Days		
Email: _____			Email: <u>mtyan@pinchin.com</u>			Site #: _____			Date Required: _____		
Email: _____			Email: _____			Sampled By: <u>WMT</u>			Date Required: _____		
MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE MAXXAM DRINKING WATER CHAIN OF CUSTODY											
Regulation 153			Other Regulations			Analysis Requested					
☐ Table 1 ☐ Res/Park ☐ Med/ Fine ☐ Table 2 ☐ Ind/Comm ☐ Coarse ☐ Table 3 ☐ Agri/ Other ☐ Table _____ FOR RSC (PLEASE CIRCLE) Y / N			☐ CCME ☐ Sanitary Sewer Bylaw ☐ MISA ☐ Storm Sewer Bylaw ☐ PWQO Region _____ ☐ Other (Specify) _____ ☐ REG 55B (MIN. 3 DAY TAT REQUIRED)			REFERENCE TO BACK OF COC REG 153 METALS & INORGANICS REG 153 ICP/MS METALS REG 153 METALS (Hg, Cr, V, IC/MS Metals, HWS - B) REG 153 METALS (Hg, Cr, V, IC/MS Metals, HWS - B)					
Include Criteria on Certificate of Analysis: Y / N			# OF CONTAINERS SUBMITTED			HOLD - DO NOT ANALYZE					
SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM			FIELD FILTERED (CIRCLE) Metals / Hg / CVI			COOLING MEDIA PRESENT: ☒ Y ☐ N					
SAMPLE IDENTIFICATION			DATE SAMPLED (YYYY/MM/DD)			TIME SAMPLED (HH:MM)			MATRIX		
1 BH 100 - SS3			2017/06/19			11 AM			Soil		
2 BH 101 - SS2			"			"			"		
3											
4											
5											
6											
7											
8											
9											
10											
RELINQUISHED BY: (Signature/Print)			DATE: (YYYY/MM/DD)			TIME: (HH:MM)			RECEIVED BY: (Signature/Print)		
Wesley Tabaczuk			2017/09/27			16 AM			Marilena Dason / Dason		
W. Tabaczuk									2017/09/27 16:00		
MAXXAM JOB #											

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Your Project #: 212056
Your C.O.C. #: 64440

Attention: Wesley Tabaczuk

Pinchin Ltd
Ottawa
1 Hines Road
Suite 200
Kanata, ON
K2K 3C7

Report Date: 2017/10/02
Report #: R4754134
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7L2929

Received: 2017/09/27, 16:00

Sample Matrix: Soil
Samples Received: 2

Analyses	Date		Date Analyzed	Laboratory Method	Reference
	Quantity	Extracted			
Petroleum Hydro. CCME F1 & BTEX in Soil (1)	2	N/A	2017/09/29	OTT SOP-00002	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil (2)	2	2017/09/29	2017/09/30	OTT SOP-00001	CCME CWS
Moisture	2	N/A	2017/10/02	CAM SOP-00445	McKeague 2nd ed 1978

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

(1) No lab extraction date is given for F1BTEX & VOC samples that are field preserved with methanol. Extraction date is the date sampled unless otherwise stated.

(2) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Jonathan Urben, Senior Project Manager

Email: jurben@maxxam.ca

Phone# (613) 274-0573

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Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

RESULTS OF ANALYSES OF SOIL

Maxxam ID		FFG019	FFG020			
Sampling Date		2017/09/26 11:00	2017/09/26 11:00			
COC Number		64440	64440			
	UNITS	BH 100-SS3	BH 101-SS2	RDL	QC Batch	MDL
Inorganics						
Moisture	%	24	10	0.2	5188999	N/A
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable						

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		FFG019	FFG020			
Sampling Date		2017/09/26 11:00	2017/09/26 11:00			
COC Number		64440	64440			
	UNITS	BH 100-SS3	BH 101-SS2	RDL	QC Batch	MDL
BTEX & F1 Hydrocarbons						
Benzene	ug/g	<0.02	<0.02	0.02	5182639	N/A
Toluene	ug/g	<0.02	<0.02	0.02	5182639	N/A
Ethylbenzene	ug/g	<0.02	<0.02	0.02	5182639	N/A
o-Xylene	ug/g	<0.02	<0.02	0.02	5182639	N/A
p+m-Xylene	ug/g	<0.04	<0.04	0.04	5182639	N/A
Total Xylenes	ug/g	<0.04	<0.04	0.04	5182639	N/A
F1 (C6-C10)	ug/g	<10	<10	10	5182639	N/A
F1 (C6-C10) - BTEX	ug/g	<10	<10	10	5182639	N/A
F2-F4 Hydrocarbons						
F2 (C10-C16 Hydrocarbons)	ug/g	190	<10	10	5189010	N/A
F3 (C16-C34 Hydrocarbons)	ug/g	220	<50	50	5189010	N/A
F4 (C34-C50 Hydrocarbons)	ug/g	<50	<50	50	5189010	N/A
Reached Baseline at C50	ug/g	Yes	Yes		5189010	
Surrogate Recovery (%)						
1,4-Difluorobenzene	%	101	96		5182639	
4-Bromofluorobenzene	%	99	103		5182639	
D10-Ethylbenzene	%	120	126		5182639	
D4-1,2-Dichloroethane	%	113	108		5182639	
o-Terphenyl	%	79	79		5189010	
RDL = Reportable Detection Limit						
QC Batch = Quality Control Batch						
N/A = Not Applicable						

Maxxam Job #: B7L2929
Report Date: 2017/10/02

Pinchin Ltd
Client Project #: 212056
Sampler Initials: WMT

TEST SUMMARY

Maxxam ID: FFG019
Sample ID: BH 100-SS3
Matrix: Soil

Collected: 2017/09/26
Shipped:
Received: 2017/09/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	5182639	N/A	2017/09/29	Lyndsey Hart
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	5189010	2017/09/29	2017/09/30	Arezoo Habibagahi
Moisture	BAL	5188999	N/A	2017/10/02	Paul Rubinato

Maxxam ID: FFG020
Sample ID: BH 101-SS2
Matrix: Soil

Collected: 2017/09/26
Shipped:
Received: 2017/09/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	5182639	N/A	2017/09/29	Lyndsey Hart
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	5189010	2017/09/29	2017/09/30	Arezoo Habibagahi
Moisture	BAL	5188999	N/A	2017/10/02	Paul Rubinato

GENERAL COMMENTS

Results relate only to the items tested.

QUALITY ASSURANCE REPORT

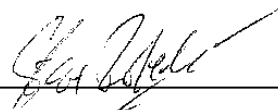
QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
5182639	LHR	Matrix Spike	1,4-Difluorobenzene	2017/09/28		97	%	60 - 140
			4-Bromofluorobenzene	2017/09/28		93	%	60 - 140
			D10-Ethylbenzene	2017/09/28		128	%	30 - 130
			D4-1,2-Dichloroethane	2017/09/28		100	%	60 - 140
			Benzene	2017/09/28		96	%	60 - 140
			Toluene	2017/09/28		93	%	60 - 140
			Ethylbenzene	2017/09/28		97	%	60 - 140
			o-Xylene	2017/09/28		93	%	60 - 140
			p+m-Xylene	2017/09/28		99	%	60 - 140
			F1 (C6-C10)	2017/09/28		104	%	60 - 140
			F1 (C6-C10)	2017/09/28		104	%	60 - 140
5182639	LHR	Spiked Blank	1,4-Difluorobenzene	2017/09/28		98	%	60 - 140
			4-Bromofluorobenzene	2017/09/28		96	%	60 - 140
			D10-Ethylbenzene	2017/09/28		111	%	30 - 130
			D4-1,2-Dichloroethane	2017/09/28		104	%	60 - 140
			Benzene	2017/09/28		102	%	60 - 140
			Toluene	2017/09/28		97	%	60 - 140
			Ethylbenzene	2017/09/28		102	%	60 - 140
			o-Xylene	2017/09/28		99	%	60 - 140
			p+m-Xylene	2017/09/28		101	%	60 - 140
			F1 (C6-C10)	2017/09/28		98	%	80 - 120
			F1 (C6-C10)	2017/09/28		98	%	80 - 120
5182639	LHR	Method Blank	1,4-Difluorobenzene	2017/09/28		96	%	60 - 140
			4-Bromofluorobenzene	2017/09/28		94	%	60 - 140
			D10-Ethylbenzene	2017/09/28		110	%	30 - 130
			D4-1,2-Dichloroethane	2017/09/28		105	%	60 - 140
			Benzene	2017/09/28	<0.02		ug/g	
			Toluene	2017/09/28	<0.02		ug/g	
			Ethylbenzene	2017/09/28	<0.02		ug/g	
			o-Xylene	2017/09/28	<0.02		ug/g	
			p+m-Xylene	2017/09/28	<0.04		ug/g	
			Total Xylenes	2017/09/28	<0.04		ug/g	
			F1 (C6-C10)	2017/09/28	<10		ug/g	
			F1 (C6-C10) - BTEX	2017/09/28	<10		ug/g	
			Benzene	2017/09/28	NC		%	50
			Toluene	2017/09/28	NC		%	50
			Ethylbenzene	2017/09/28	NC		%	50
			o-Xylene	2017/09/28	NC		%	50
			p+m-Xylene	2017/09/28	NC		%	50
5182639	LHR	RPD - Sample/Sample Dup	Total Xylenes	2017/09/28	NC		%	50
			F1 (C6-C10)	2017/09/28	NC		%	50
			F1 (C6-C10) - BTEX	2017/09/28	NC		%	50
			Moisture	2017/10/02	0		%	50
			Moisture	2017/10/02	0		%	50
			Moisture	2017/10/02	0		%	50
			Moisture	2017/10/02	0		%	50
			Moisture	2017/10/02	0		%	50
5188999	PRB	RPD - Sample/Sample Dup	Moisture	2017/10/02	0		%	50
			Moisture	2017/10/02	0		%	50
			Moisture	2017/10/02	0		%	50
			Moisture	2017/10/02	0		%	50
5189010	AH1	Matrix Spike	o-Terphenyl	2017/09/30		71	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2017/09/30		87	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2017/09/30		87	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2017/09/30		87	%	50 - 130
5189010	AH1	Spiked Blank	o-Terphenyl	2017/09/30		81	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2017/09/30		82	%	80 - 120
			F3 (C16-C34 Hydrocarbons)	2017/09/30		82	%	80 - 120
			F4 (C34-C50 Hydrocarbons)	2017/09/30		82	%	80 - 120
5189010	AH1	Method Blank	o-Terphenyl	2017/09/30		77	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2017/09/30	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2017/09/30	<50		ug/g	
			F4 (C34-C50 Hydrocarbons)	2017/09/30	<50		ug/g	
5189010	AH1	RPD - Sample/Sample Dup	F2 (C10-C16 Hydrocarbons)	2017/09/30	NC		%	50

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC	Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
				F3 (C16-C34 Hydrocarbons)	2017/09/30	NC		%	50
				F4 (C34-C50 Hydrocarbons)	2017/09/30	NC		%	50
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference. Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy. Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination. Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency. NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).									

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

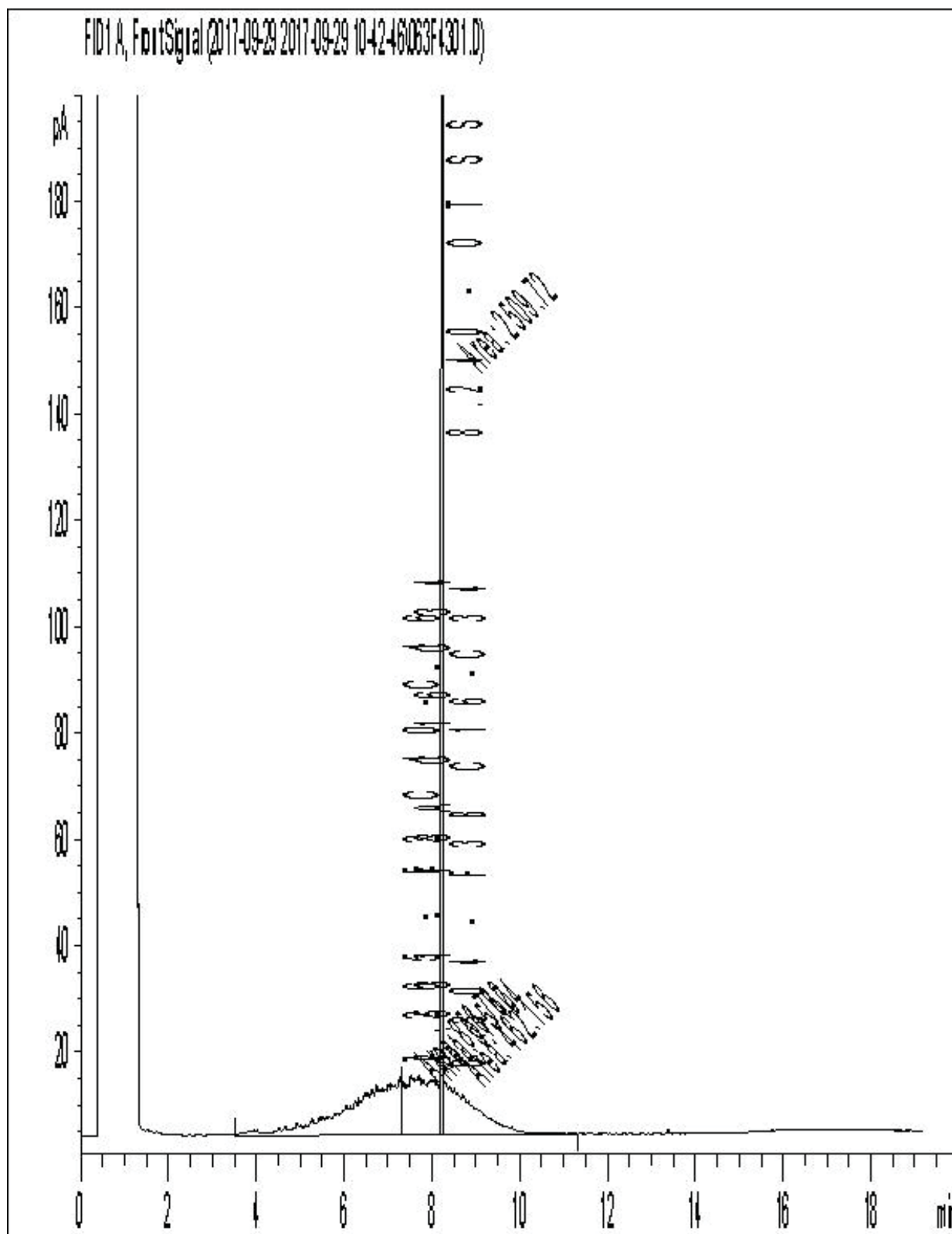


Steve Roberts, Ottawa Lab Manager

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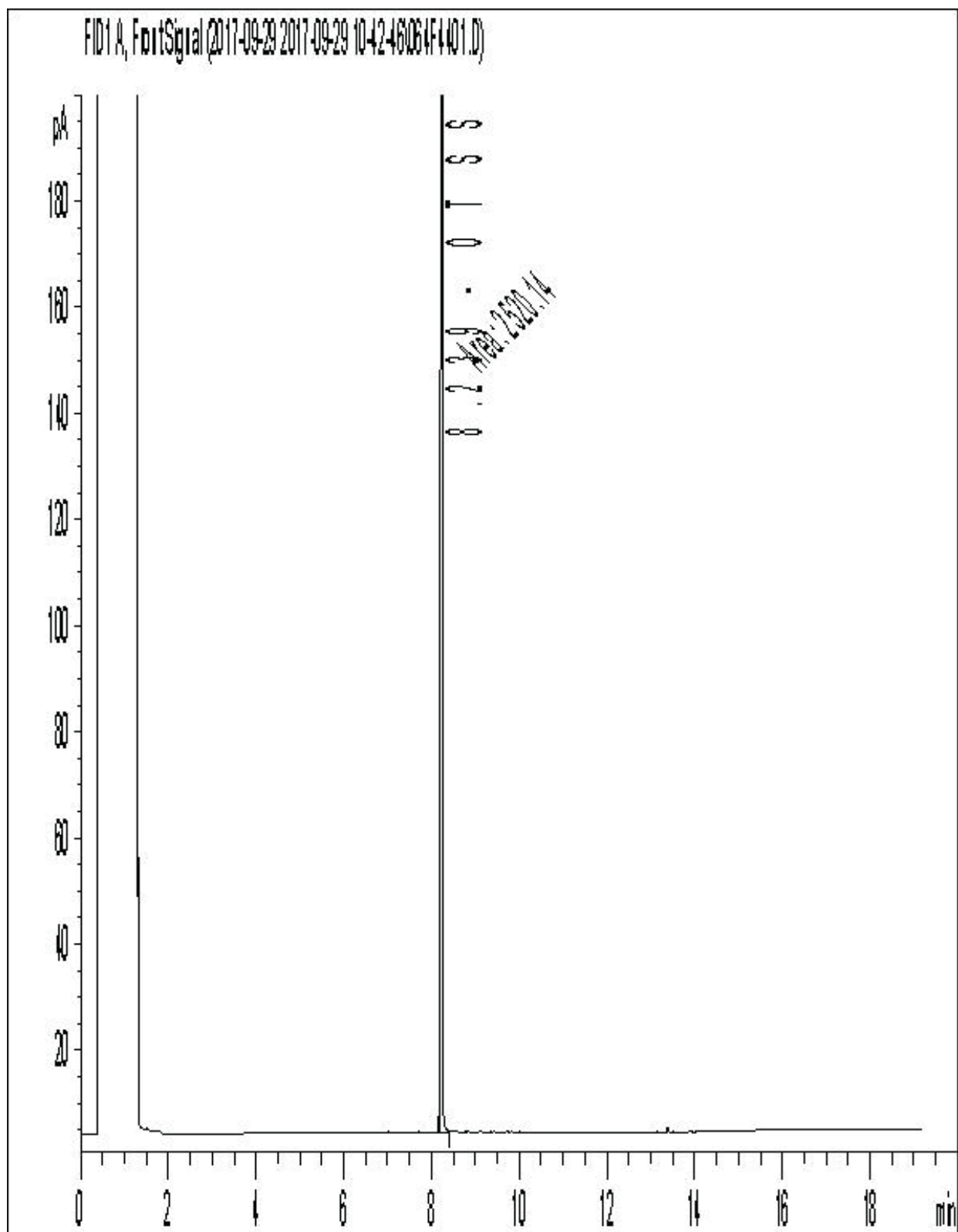
Invoice Information		Report Information (if differs from invoice)		Project Information (where applicable)		Turnaround Time (TAT) Required	
Company Name: <u>Pinchin</u>		Company Name: <u>Wesley Tabaczuk</u>		Quotation #: _____		☒ Regular TAT (5-7 days) Most analyses.	
Contact Name: <u>Ottawa</u>		Contact Name: _____		P.O. # / A/E/R: _____		PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS	
Address: _____		Address: <u>Wtabaczuk@Pinchin.com</u>		Project #: <u>212056</u>		Rush TAT (Surcharges will be applied)	
Phone: _____ Fax: _____		Phone: _____ Fax: _____		Site Location: _____		☐ 1 Day ☐ 2 Days ☐ 3-4 Days	
Email: _____		Email: <u>mryan@Pinchin.com</u>		Site #: _____		Date Required: _____	
Sampled By: <u>WMT</u>		Rush Confirmation #: _____		Date Required: _____		Date Required: _____	
MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE MAXXAM DRINKING WATER CHAIN OF CUSTODY							
Regulation 153		Other Regulations		Analysis Requested		LABORATORY USE ONLY	
☐ Table 1 ☐ Res/Park ☐ Med/ Fine ☐ Table 2 ☐ Ind/Comm ☐ Coarse ☐ Table 3 ☐ Agri/ Other ☐ Table _____ FOR RSC (PLEASE CIRCLE) Y / N		☐ CCME ☐ Sanitary Sewer Bylaw ☐ MISA ☐ Storm Sewer Bylaw ☐ PWQO ☐ Region ☐ Other (Specify) _____ ☐ REG 558 (MIN. 3 DAY TAT REQUIRED)		REFER TO BACK OF COC REG 153 METALS & INORGANICS REG 153 METALS (Hg, Cr, V, ICNMS Metals, HWS - B)		CUSTODY SEAL Present <u>9</u> / N Intact <u>9</u> / N COOLING MEDIA PRESENT: ☒ Y / N	
SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM							
SAMPLE IDENTIFICATION		DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH:MM)	MATRIX	# OF CONTAINERS SUBMITTED	FIELD FILTERED (CIRCLE) Metals / Hg / CVI	W/DO NOT ANALYZE
1 BH 100 - SS 3		2017/26/9	11 AM	Soil	3	XX	
2 BH 101 - SS 2		"	"	"	3	XX	
3							
4							
5							
6							
7							
8							
9							
10							
RELINQUISHED BY: (Signature/Print)		DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY: (Signature/Print)		DATE: (YYYY/MM/DD)	TIME: (HH:MM)
<u>Wesley Tabaczuk</u>		2017/9/27	16 AM	<u>Marlene Saxon / Saxon</u>		2017/09/27	16:00
<u>W. Tabaczuk</u>							

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Your Project #: 206278.001
Site Location: RICHMOND ROAD

Attention:Mike Kosiw

Pinchin Ltd
Ottawa
1 Hines Road
Suite 200
Kanata, ON
K2K 3C7

Report Date: 2017/06/16
Report #: R4534750
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7C4552

Received: 2017/06/15, 14:30

Sample Matrix: Water
Samples Received: 1

Analyses	Date		Date Analyzed	Laboratory Method	Reference
	Quantity	Extracted			
Petroleum Hydro. CCME F1 & BTEX in Water	1	N/A	2017/06/16	OTT SOP-00002	CCME CWS
Petroleum Hydrocarbons F2-F4 in Water (1)	1	2017/06/15	2017/06/16	OTT SOP-00001	CCME Hydrocarbons

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported: unless indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

Your Project #: 206278.001
Site Location: RICHMOND ROAD

Attention:Mike Kosiw

Pinchin Ltd
Ottawa
1 Hines Road
Suite 200
Kanata, ON
K2K 3C7

Report Date: 2017/06/16
Report #: R4534750
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7C4552
Received: 2017/06/15, 14:30

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Alison Cameron, Project Manager
Email: ACameron@maxxam.ca
Phone# (613) 274-0573

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O.REG 153 PETROLEUM HYDROCARBONS (WATER)

Maxxam ID		EOK567		
Sampling Date		2017/06/15		
	UNITS	MW-2	RDL	QC Batch
BTEX & F1 Hydrocarbons				
Benzene	ug/L	3.6	0.20	5027905
Toluene	ug/L	4.0	0.20	5027905
Ethylbenzene	ug/L	0.51	0.20	5027905
o-Xylene	ug/L	1.2	0.20	5027905
p+m-Xylene	ug/L	2.1	0.40	5027905
Total Xylenes	ug/L	3.3	0.40	5027905
F1 (C6-C10)	ug/L	<25	25	5027905
F1 (C6-C10) - BTEX	ug/L	<25	25	5027905
F2-F4 Hydrocarbons				
F2 (C10-C16 Hydrocarbons)	ug/L	230	100	5029732
F3 (C16-C34 Hydrocarbons)	ug/L	<200	200	5029732
F4 (C34-C50 Hydrocarbons)	ug/L	<200	200	5029732
Reached Baseline at C50	ug/L	Yes		5029732
Surrogate Recovery (%)				
1,4-Difluorobenzene	%	93		5027905
4-Bromofluorobenzene	%	101		5027905
D10-Ethylbenzene	%	109		5027905
D4-1,2-Dichloroethane	%	97		5027905
o-Terphenyl	%	95		5029732
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				

Maxxam Job #: B7C4552
Report Date: 2017/06/16

Pinchin Ltd
Client Project #: 206278.001
Site Location: RICHMOND ROAD
Sampler Initials: MK

TEST SUMMARY

Maxxam ID: EOK567
Sample ID: MW-2
Matrix: Water

Collected: 2017/06/15
Shipped:
Received: 2017/06/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	5027905	N/A	2017/06/16	Lyndsey Hart
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	5029732	2017/06/15	2017/06/16	Liliana Gaburici

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	8.3°C
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Results relate only to the items tested.

QUALITY ASSURANCE REPORT

QA/QC	Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
5027905	LHR	Matrix Spike		1,4-Difluorobenzene	2017/06/15		96	%	70 - 130
				4-Bromofluorobenzene	2017/06/15		91	%	70 - 130
				D10-Ethylbenzene	2017/06/15		111	%	70 - 130
				D4-1,2-Dichloroethane	2017/06/15		99	%	70 - 130
				Benzene	2017/06/15		93	%	70 - 130
				Toluene	2017/06/15		91	%	70 - 130
				Ethylbenzene	2017/06/15		93	%	70 - 130
				o-Xylene	2017/06/15		87	%	70 - 130
				p+m-Xylene	2017/06/15		100	%	70 - 130
				F1 (C6-C10)	2017/06/15		108	%	70 - 130
5027905	LHR	Spiked Blank		1,4-Difluorobenzene	2017/06/15		100	%	70 - 130
				4-Bromofluorobenzene	2017/06/15		128	%	70 - 130
				D10-Ethylbenzene	2017/06/15		106	%	70 - 130
				D4-1,2-Dichloroethane	2017/06/15		100	%	70 - 130
				Benzene	2017/06/15		93	%	70 - 130
				Toluene	2017/06/15		96	%	70 - 130
				Ethylbenzene	2017/06/15		100	%	70 - 130
				o-Xylene	2017/06/15		90	%	70 - 130
				p+m-Xylene	2017/06/15		104	%	70 - 130
				F1 (C6-C10)	2017/06/15		106	%	70 - 130
5027905	LHR	Method Blank		1,4-Difluorobenzene	2017/06/15		95	%	70 - 130
				4-Bromofluorobenzene	2017/06/15		128	%	70 - 130
				D10-Ethylbenzene	2017/06/15		104	%	70 - 130
				D4-1,2-Dichloroethane	2017/06/15		98	%	70 - 130
				Benzene	2017/06/15	<0.20		ug/L	
				Toluene	2017/06/15	<0.20		ug/L	
				Ethylbenzene	2017/06/15	<0.20		ug/L	
				o-Xylene	2017/06/15	<0.20		ug/L	
				p+m-Xylene	2017/06/15	<0.40		ug/L	
				Total Xylenes	2017/06/15	<0.40		ug/L	
				F1 (C6-C10)	2017/06/15	<25		ug/L	
5027905	LHR	RPD		F1 (C6-C10) - BTEX	2017/06/15	<25		ug/L	
				F1 (C6-C10)	2017/06/16	NC		%	40
				F1 (C6-C10) - BTEX	2017/06/16	NC		%	40
5029732	LGA	Matrix Spike		o-Terphenyl	2017/06/16		89	%	30 - 130
				F2 (C10-C16 Hydrocarbons)	2017/06/16		88	%	50 - 130
				F3 (C16-C34 Hydrocarbons)	2017/06/16		88	%	50 - 130
				F4 (C34-C50 Hydrocarbons)	2017/06/16		88	%	50 - 130
5029732	LGA	Spiked Blank		o-Terphenyl	2017/06/16		91	%	30 - 130
				F2 (C10-C16 Hydrocarbons)	2017/06/16		90	%	80 - 120
				F3 (C16-C34 Hydrocarbons)	2017/06/16		90	%	80 - 120
				F4 (C34-C50 Hydrocarbons)	2017/06/16		90	%	80 - 120
5029732	LGA	RPD		F2 (C10-C16 Hydrocarbons)	2017/06/16	1.1		%	50
				F3 (C16-C34 Hydrocarbons)	2017/06/16	1.1		%	50
				F4 (C34-C50 Hydrocarbons)	2017/06/16	1.1		%	50
5029732	LGA	Method Blank		o-Terphenyl	2017/06/16		87	%	30 - 130
				F2 (C10-C16 Hydrocarbons)	2017/06/16	<100		ug/L	
				F3 (C16-C34 Hydrocarbons)	2017/06/16	<200		ug/L	

Maxxam Job #: B7C4552
Report Date: 2017/06/16

Pinchin Ltd
Client Project #: 206278.001
Site Location: RICHMOND ROAD
Sampler Initials: MK

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC	Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
				F4 (C34-C50 Hydrocarbons)	2017/06/16	<200		ug/L	
Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement. Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference. Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy. Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination. Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency. NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).									

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



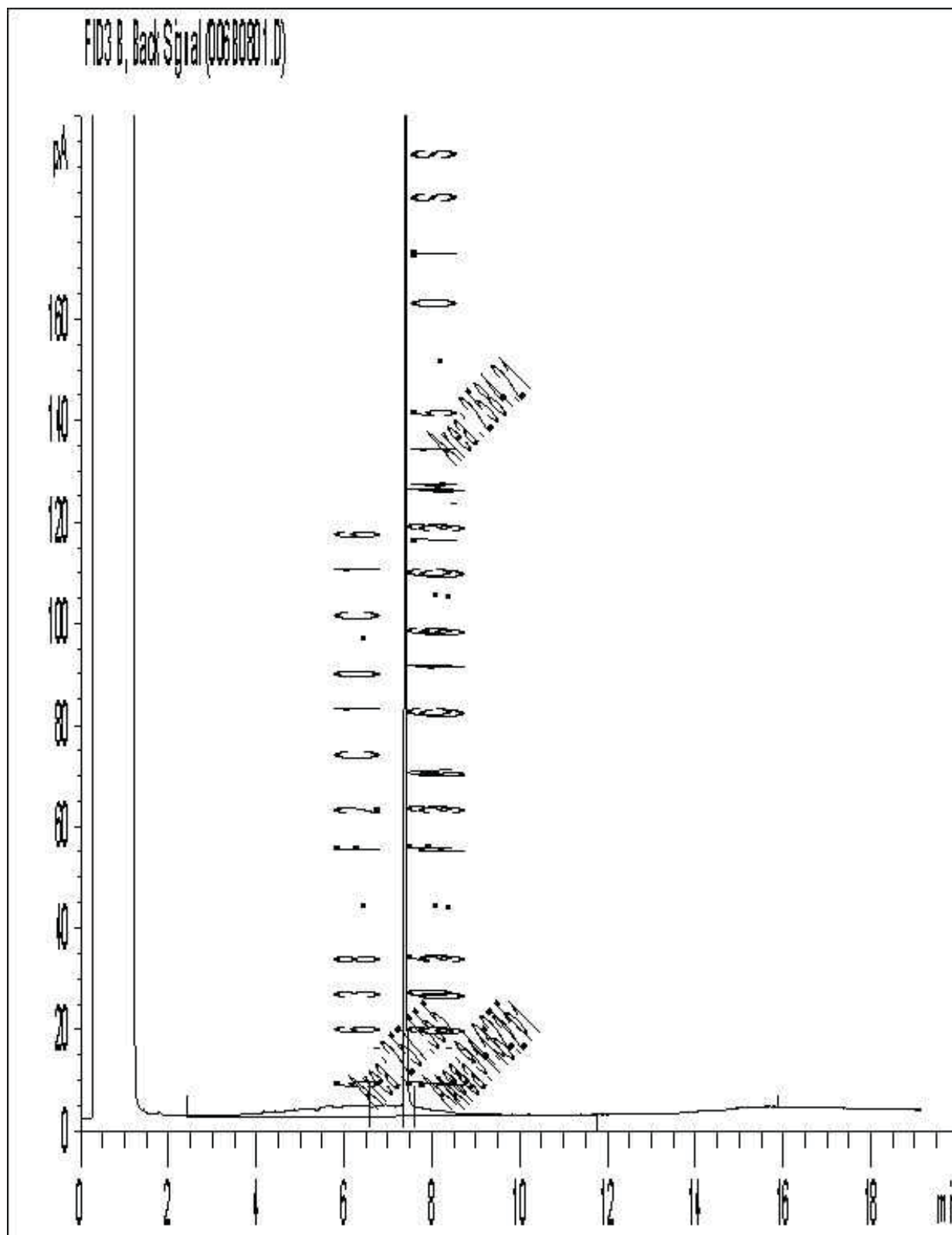
Paul Rubinato, Analyst, Maxxam Analytics

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Invoice Information		Report Information (if differs from Invoice)		Project Information (where applicable)		Turnaround Time (TAT) Required		
Company Name: <u>Pinchin</u>	Company Name:	Quotation #:	☐ Regular TAT (5-7 days) Most analyses					
Contact Name: <u>Mike Kosch</u>	Contact Name:	P.O. #/ AFER:	PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS					
Address: <u>Christine Wilson R. X</u>	Address: <u>E SAME</u>	Project #:	<u>206278-001</u>		Rush TAT (Surcharges will be applied)			
Phone:	Phone:	Site Location:	<u>Richmond Rd.</u>		☒ 1 Day ☐ 2 Days ☐ 3-4 Days			
Fax:	Fax:	Site #:	Date Required: <u>RUSH</u>					
Email:	Email:	Sampled By:	Rush Confirmation #:					
MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE MAXXAM DRINKING WATER CHAIN OF CUSTODY								
Regulation 153 ☐ Table 1 ☐ Res/Park ☐ Med/ Fine ☐ Table 2 ☐ Ad/Comm ☐ Coarse ☒ Table 3 ☐ Agri/ Other ☐ Table 4 FOR RSC (PLEASE CIRCLE) Y <u>N</u>		Other Regulations ☐ CCME ☐ Sanitary Sewer Bylaw ☐ MISA ☐ Storm Sewer Bylaw ☐ PWQO ☐ Region ☐ Other (Specify) ☐ REG 558 (MIN. 3 DAY TAT REQUIRED)		Analysis Requested # OF CONTAINERS SUBMITTED FIELD TESTED (CIRCLE) Metals / Hg / Cu / Pb OTHER / PHC / FI PHC / FI 12 - 14 VOCs REG 153 METALS & INORGANICS REG 153 COPAS METALS REG 153 METALS (Hg, Cr VI, COPAS Metals, HWS - B)			LABORATORY USE ONLY CUSTODY SEAL Y / N Present Intact Y Y COOLER TEMPERATURES 8, 8, 8 COOLING MEDIA PRESENT: <u>Y</u> / N COMMENTS	
SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM								
SAMPLE IDENTIFICATION	DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH:MM)	MATRIX	HOLD-DO NOT ANALYZE				
1 <u>MW-2</u>	<u>June 15, 2017</u>	<u>AM 6:55</u>	<u>XX</u>					
2								
3								
4								
5								
6								
7								
8								
9								
10								
RELINQUISHED BY: (Signature/Print)		DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY: (Signature/Print)		DATE: (YYYY/MM/DD)	TIME: (HH:MM)	
<u>Mike Kosch</u>		<u>11:30</u>		<u>Mariana Vascon / Vascon</u>		<u>2017/06/15</u>	<u>14:30</u>	
		<u>June 15, 2017</u>						

Unless otherwise agreed to in writing, work submitted on this Chain of Custody is subject to Maxxam's standard Terms and Conditions. Signing of this Chain of Custody document is acknowledgment and acceptance of our terms which are available for viewing at www.maxxam.ca/terms. Sample container, preservation, hold time and packages information can be viewed at <http://www.maxxam.ca/wp-content/uploads/Ontario-COC.pdf>.

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Your Project #: 206278.001
Site Location: RICHMOND ROAD

Attention:Mike Kosiw

Pinchin Ltd
Ottawa
1 Hines Road
Suite 200
Kanata, ON
K2K 3C7

Report Date: 2017/06/16
Report #: R4534750
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7C4552

Received: 2017/06/15, 14:30

Sample Matrix: Water
Samples Received: 1

Analyses	Date		Date Analyzed	Laboratory Method	Reference
	Quantity	Extracted			
Petroleum Hydro. CCME F1 & BTEX in Water	1	N/A	2017/06/16	OTT SOP-00002	CCME CWS
Petroleum Hydrocarbons F2-F4 in Water (1)	1	2017/06/15	2017/06/16	OTT SOP-00001	CCME Hydrocarbons

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

(1) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Alison Cameron, Project Manager

Email: ACameron@maxxam.ca

Phone# (613) 274-0573

=====

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		EOK567			
Sampling Date		2017/06/15			
	UNITS	MW-2	RDL	QC Batch	MDL
BTEX & F1 Hydrocarbons					
Benzene	ug/L	3.6	0.20	5027905	N/A
Toluene	ug/L	4.0	0.20	5027905	N/A
Ethylbenzene	ug/L	0.51	0.20	5027905	N/A
o-Xylene	ug/L	1.2	0.20	5027905	N/A
p+m-Xylene	ug/L	2.1	0.40	5027905	N/A
Total Xylenes	ug/L	3.3	0.40	5027905	N/A
F1 (C6-C10)	ug/L	<25	25	5027905	N/A
F1 (C6-C10) - BTEX	ug/L	<25	25	5027905	N/A
F2-F4 Hydrocarbons					
F2 (C10-C16 Hydrocarbons)	ug/L	230	100	5029732	N/A
F3 (C16-C34 Hydrocarbons)	ug/L	<200	200	5029732	N/A
F4 (C34-C50 Hydrocarbons)	ug/L	<200	200	5029732	N/A
Reached Baseline at C50	ug/L	Yes		5029732	
Surrogate Recovery (%)					
1,4-Difluorobenzene	%	93		5027905	
4-Bromofluorobenzene	%	101		5027905	
D10-Ethylbenzene	%	109		5027905	
D4-1,2-Dichloroethane	%	97		5027905	
o-Terphenyl	%	95		5029732	
RDL = Reportable Detection Limit					
QC Batch = Quality Control Batch					
N/A = Not Applicable					

Maxxam Job #: B7C4552
Report Date: 2017/06/16

Pinchin Ltd
Client Project #: 206278.001
Site Location: RICHMOND ROAD
Sampler Initials: MK

TEST SUMMARY

Maxxam ID: EOK567
Sample ID: MW-2
Matrix: Water

Collected: 2017/06/15
Shipped:
Received: 2017/06/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	5027905	N/A	2017/06/16	Lyndsey Hart
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	5029732	2017/06/15	2017/06/16	Liliana Gaburici

GENERAL COMMENTS

Results relate only to the items tested.

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
5027905	LHR	Matrix Spike	1,4-Difluorobenzene	2017/06/15		96	%	70 - 130
			4-Bromofluorobenzene	2017/06/15		91	%	70 - 130
			D10-Ethylbenzene	2017/06/15		111	%	70 - 130
			D4-1,2-Dichloroethane	2017/06/15		99	%	70 - 130
			Benzene	2017/06/15		93	%	70 - 130
			Toluene	2017/06/15		91	%	70 - 130
			Ethylbenzene	2017/06/15		93	%	70 - 130
			o-Xylene	2017/06/15		87	%	70 - 130
			p+m-Xylene	2017/06/15		100	%	70 - 130
			F1 (C6-C10)	2017/06/15		108	%	70 - 130
5027905	LHR	Spiked Blank	1,4-Difluorobenzene	2017/06/15		100	%	70 - 130
			4-Bromofluorobenzene	2017/06/15		128	%	70 - 130
			D10-Ethylbenzene	2017/06/15		106	%	70 - 130
			D4-1,2-Dichloroethane	2017/06/15		100	%	70 - 130
			Benzene	2017/06/15		93	%	70 - 130
			Toluene	2017/06/15		96	%	70 - 130
			Ethylbenzene	2017/06/15		100	%	70 - 130
			o-Xylene	2017/06/15		90	%	70 - 130
			p+m-Xylene	2017/06/15		104	%	70 - 130
			F1 (C6-C10)	2017/06/15		106	%	70 - 130
5027905	LHR	Method Blank	1,4-Difluorobenzene	2017/06/15		95	%	70 - 130
			4-Bromofluorobenzene	2017/06/15		128	%	70 - 130
			D10-Ethylbenzene	2017/06/15		104	%	70 - 130
			D4-1,2-Dichloroethane	2017/06/15		98	%	70 - 130
			Benzene	2017/06/15	<0.20		ug/L	
			Toluene	2017/06/15	<0.20		ug/L	
			Ethylbenzene	2017/06/15	<0.20		ug/L	
			o-Xylene	2017/06/15	<0.20		ug/L	
			p+m-Xylene	2017/06/15	<0.40		ug/L	
			Total Xylenes	2017/06/15	<0.40		ug/L	
			F1 (C6-C10)	2017/06/15	<25		ug/L	
			F1 (C6-C10) - BTEX	2017/06/15	<25		ug/L	
5027905	LHR	RPD - Sample/Sample Dup	F1 (C6-C10)	2017/06/16	NC		%	40
			F1 (C6-C10) - BTEX	2017/06/16	NC		%	40
5029732	LGA	Matrix Spike	o-Terphenyl	2017/06/16		89	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2017/06/16		88	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2017/06/16		88	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2017/06/16		88	%	50 - 130
5029732	LGA	Spiked Blank	o-Terphenyl	2017/06/16		91	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2017/06/16		90	%	80 - 120
			F3 (C16-C34 Hydrocarbons)	2017/06/16		90	%	80 - 120
			F4 (C34-C50 Hydrocarbons)	2017/06/16		90	%	80 - 120
5029732	LGA	RPD	F2 (C10-C16 Hydrocarbons)	2017/06/16	1.1		%	50
			F3 (C16-C34 Hydrocarbons)	2017/06/16	1.1		%	50
			F4 (C34-C50 Hydrocarbons)	2017/06/16	1.1		%	50
5029732	LGA	Method Blank	o-Terphenyl	2017/06/16		87	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2017/06/16	<100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2017/06/16	<200		ug/L	

Maxxam Job #: B7C4552
Report Date: 2017/06/16

Pinchin Ltd
Client Project #: 206278.001
Site Location: RICHMOND ROAD
Sampler Initials: MK

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC		QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
Batch	Init							
			F4 (C34-C50 Hydrocarbons)	2017/06/16	<200		ug/L	
Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement. Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference. Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy. Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination. Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency. NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).								

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



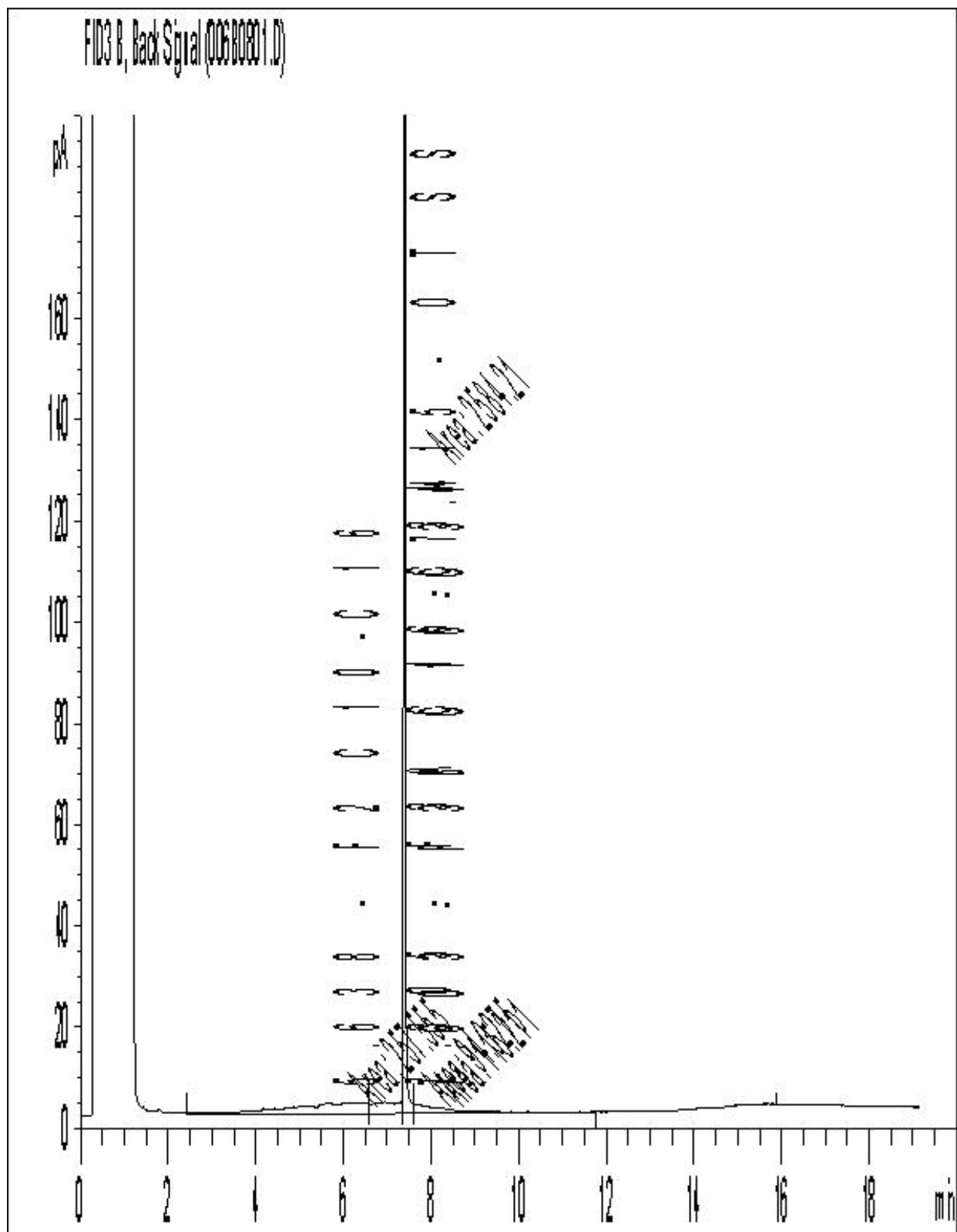
Paul Rubinato, Analyst, Maxxam Analytics

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Invoice Information		Report Information (if differs from Invoice)		Project Information (where applicable)		Turnaround Time (TAT) Required	
Company Name: <u>Pinchin</u>	Company Name:	Company Name:	Quotation #:	Regular TAT (5-7 days) Most analyses		☐	
Contact Name: <u>Mike Kosch</u>	Contact Name:	Contact Name:	P.O. #/ A/FER:	PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS			
Address: <u>Christine Wilson R. York</u>	Address:	Address: <u>E SAME</u>	Project #:	Rush TAT (Surcharges will be applied)		☒ 1 Day ☐ 2 Days ☐ 3-4 Days	
Phone:	Fax:	Phone:	Site Location: <u>Richmond Rd.</u>	Date Required: <u>RUSH</u>			
Email:		Email:	Sampled By:	Rush Confirmation #:			
MDE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE MAXXAM DRINKING WATER CHAIN OF CUSTODY							
Regulation 153		Other Regulations		Analysis Requested		LABORATORY USE ONLY	
☐ Table 1	☐ Res/Park	☐ CCME	☐ Sanitary Sewer Bylaw			CUSTODY SEAL	
☐ Table 2	☐ Agri/Comm	☐ MISA	☐ Storm Sewer Bylaw			Present Intact	
☒ Table 3	☐ Agri/ Other	☐ PWQO	Region			COOLER TEMPERATURES	
☐ Table 4		☐ Other (Specify)				Y Y 9.9.9	
FOR RSC (PLEASE CIRCLE) Y <u>N</u>		☐ REG 558 (MIN. 3 DAY TAT REQUIRED)				COOLING MEDIA PRESENT: <u>Y</u> / N	
Include Criteria on Certificate of Analysis: Y / N						COMMENTS	
SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM							
SAMPLE IDENTIFICATION	DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH:MM)	MATRIX	# OF CONTAINERS SUBMITTED	FIELD TESTED (CIRCLE) Metals / Hg / Cu/Pb	OTDS / PHC/FI	PHC/FI 12 - 14
1 <u>MW-2</u>	<u>June 15, 2017</u>	<u>AM 6:55</u>	<u>XX</u>				
2							
3							
4							
5							
6							
7							
8							
9							
10							
RELINQUISHED BY: (Signature/Print)		DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY: (Signature/Print)		DATE: (YYYY/MM/DD)	TIME: (HH:MM)
<u>Mike Kosch</u>		<u>11:30</u>		<u>Mariana Vascon/Vascon</u>		<u>2017/06/15</u>	<u>14:30</u>
		<u>June 15, 2017</u>					

Unless otherwise agreed to in writing, work submitted on this Chain of Custody is subject to Maxxam's standard Terms and Conditions. Signing of this Chain of Custody document is acknowledgment and acceptance of our terms which are available for viewing at www.maxxam.ca/terms. Sample container, preservation, hold time and packages information can be viewed at <http://www.maxxam.ca/wp-content/uploads/Ontario-COC.pdf>.

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Your Project #: 206278.001
Site Location: RICHMOND RD
Your C.O.C. #: 98454

Attention:Mike Kosiw

Pinchin Ltd
Ottawa
1 Hines Road
Suite 200
Kanata, ON
K2K 3C7

Report Date: 2017/06/19
Report #: R4547498
Version: 2 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7C3980

Received: 2017/06/14, 16:00

Sample Matrix: Soil
Samples Received: 4

Analyses	Date		Date Analyzed	Laboratory Method	Reference
	Quantity	Extracted			
Petroleum Hydro. CCME F1 & BTEX in Soil (1, 2)	2	N/A	2017/06/16	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Soil (1, 3)	2	2017/06/15	2017/06/16	CAM SOP-00316	CCME CWS m
F4G (CCME Hydrocarbons Gravimetric) (1)	1	2017/06/17	2017/06/17	CAM SOP-00316	CCME PHC-CWS m
Moisture (1)	2	N/A	2017/06/15	CAM SOP-00445	Carter 2nd ed 51.2 m
pH CaCl2 EXTRACT (1)	2	2017/06/16	2017/06/16	CAM SOP-00413	EPA 9045 D m
Sieve, 75um (1)	1	N/A	2017/06/16	CAM SOP-00467	Carter 2nd ed m

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported: unless indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Your Project #: 206278.001
Site Location: RICHMOND RD
Your C.O.C. #: 98454

Attention:Mike Kosiw

Pinchin Ltd
Ottawa
1 Hines Road
Suite 200
Kanata, ON
K2K 3C7

Report Date: 2017/06/19
Report #: R4547498
Version: 2 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7C3980

Received: 2017/06/14, 16:00

- (1) This test was performed by Maxxam Analytics Mississauga
(2) No lab extraction date is given for F1BTEX & VOC samples that are field preserved with methanol. Extraction date is the date sampled unless otherwise stated.
(3) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Alison Cameron, Project Manager
Email: ACameron@maxxam.ca
Phone# (613) 274-0573

=====

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O.REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		EOH260	EOH262		
Sampling Date		2017/06/14	2017/06/14		
COC Number		98454	98454		
	UNITS	BH-1 SS-2	MW-2 SS-3	RDL	QC Batch
Inorganics					
Moisture	%	11	12	1.0	5030251
BTEX & F1 Hydrocarbons					
Benzene	ug/g	<0.020	0.022	0.020	5030828
Toluene	ug/g	0.040	0.068	0.020	5030828
Ethylbenzene	ug/g	<0.020	<0.020	0.020	5030828
o-Xylene	ug/g	<0.020	0.025	0.020	5030828
p+m-Xylene	ug/g	<0.040	0.066	0.040	5030828
Total Xylenes	ug/g	<0.040	0.091	0.040	5030828
F1 (C6-C10)	ug/g	<10	<10	10	5030828
F1 (C6-C10) - BTEX	ug/g	<10	<10	10	5030828
F2-F4 Hydrocarbons					
F2 (C10-C16 Hydrocarbons)	ug/g	<10	160	10	5030790
F3 (C16-C34 Hydrocarbons)	ug/g	<50	250	50	5030790
F4 (C34-C50 Hydrocarbons)	ug/g	<50	190	50	5030790
Reached Baseline at C50	ug/g	Yes	No		5030790
Surrogate Recovery (%)					
1,4-Difluorobenzene	%	99	96		5030828
4-Bromofluorobenzene	%	102	100		5030828
D10-Ethylbenzene	%	112	109		5030828
D4-1,2-Dichloroethane	%	95	92		5030828
o-Terphenyl	%	98	100		5030790
RDL = Reportable Detection Limit					
QC Batch = Quality Control Batch					

Maxxam Job #: B7C3980
Report Date: 2017/06/19

Pinchin Ltd
Client Project #: 206278.001
Site Location: RICHMOND RD
Sampler Initials: MK

RESULTS OF ANALYSES OF SOIL

Maxxam ID		EOH259	EOH261		EOH262	
Sampling Date		2017/06/14	2017/06/14		2017/06/14	
COC Number		98454	98454		98454	
	UNITS	BH-1 SS-1	BH-1 G.S.	RDL	MW-2 SS-3	QC Batch
Inorganics						
Available (CaCl ₂) pH	pH	7.66			7.90	5031490
Miscellaneous Parameters						
Grain Size	%		FINE	N/A		5030043
Sieve - #200 (<0.075mm)	%		71	1		5030043
Sieve - #200 (>0.075mm)	%		29	1		5030043
RDL = Reportable Detection Limit						
QC Batch = Quality Control Batch						
N/A = Not Applicable						

Maxxam Job #: B7C3980
Report Date: 2017/06/19

Pinchin Ltd
Client Project #: 206278.001
Site Location: RICHMOND RD
Sampler Initials: MK

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		EOH262		
Sampling Date		2017/06/14		
COC Number		98454		
	UNITS	MW-2 SS-3	RDL	QC Batch
F2-F4 Hydrocarbons				
F4G-sg (Grav. Heavy Hydrocarbons)	ug/g	660	100	5033224
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				

Maxxam Job #: B7C3980
Report Date: 2017/06/19

Pinchin Ltd
Client Project #: 206278.001
Site Location: RICHMOND RD
Sampler Initials: MK

TEST SUMMARY

Maxxam ID: EOH259
Sample ID: BH-1 SS-1
Matrix: Soil

Collected: 2017/06/14
Shipped:
Received: 2017/06/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
pH CaCl2 EXTRACT	AT	5031490	2017/06/16	2017/06/16	Tahir Anwar

Maxxam ID: EOH260
Sample ID: BH-1 SS-2
Matrix: Soil

Collected: 2017/06/14
Shipped:
Received: 2017/06/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	5030828	N/A	2017/06/16	Georgeta Rusu
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	5030790	2017/06/15	2017/06/16	Zhiyue (Frank) Zhu
Moisture	BAL	5030251	N/A	2017/06/15	Valentina Kaftani

Maxxam ID: EOH261
Sample ID: BH-1 G.S.
Matrix: Soil

Collected: 2017/06/14
Shipped:
Received: 2017/06/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Sieve, 75um	SIEV	5030043	N/A	2017/06/16	Chun Yan

Maxxam ID: EOH262
Sample ID: MW-2 SS-3
Matrix: Soil

Collected: 2017/06/14
Shipped:
Received: 2017/06/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	5030828	N/A	2017/06/16	Georgeta Rusu
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	5030790	2017/06/15	2017/06/16	Zhiyue (Frank) Zhu
F4G (CCME Hydrocarbons Gravimetric)	BAL	5033224	2017/06/17	2017/06/17	Sandeep Kaur
Moisture	BAL	5030251	N/A	2017/06/15	Valentina Kaftani
pH CaCl2 EXTRACT	AT	5031490	2017/06/16	2017/06/16	Tahir Anwar

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	9.3°C
-----------	-------

Results relate only to the items tested.

QUALITY ASSURANCE REPORT

QA/QC	Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
5030043	CYN	QC Standard		Sieve - #200 (<0.075mm)	2017/06/16		55	%	53 - 58
				Sieve - #200 (>0.075mm)	2017/06/16		45	%	42 - 47
5030043	CYN	RPD		Sieve - #200 (<0.075mm)	2017/06/16	0.97		%	20
				Sieve - #200 (>0.075mm)	2017/06/16	0.99		%	20
5030251	NS3	RPD		Moisture	2017/06/15	0.72		%	20
5030790	ZZ	Matrix Spike		o-Terphenyl	2017/06/16		95	%	60 - 130
				F2 (C10-C16 Hydrocarbons)	2017/06/16		95	%	50 - 130
				F3 (C16-C34 Hydrocarbons)	2017/06/16		99	%	50 - 130
				F4 (C34-C50 Hydrocarbons)	2017/06/16		98	%	50 - 130
5030790	ZZ	Spiked Blank		o-Terphenyl	2017/06/16		93	%	60 - 130
				F2 (C10-C16 Hydrocarbons)	2017/06/16		92	%	80 - 120
				F3 (C16-C34 Hydrocarbons)	2017/06/16		97	%	80 - 120
				F4 (C34-C50 Hydrocarbons)	2017/06/16		93	%	80 - 120
5030790	ZZ	Method Blank		o-Terphenyl	2017/06/16		97	%	60 - 130
				F2 (C10-C16 Hydrocarbons)	2017/06/16	<10		ug/g	
				F3 (C16-C34 Hydrocarbons)	2017/06/16	<50		ug/g	
				F4 (C34-C50 Hydrocarbons)	2017/06/16	<50		ug/g	
5030790	ZZ	RPD		F2 (C10-C16 Hydrocarbons)	2017/06/16	NC		%	30
				F3 (C16-C34 Hydrocarbons)	2017/06/16	26		%	30
				F4 (C34-C50 Hydrocarbons)	2017/06/16	NC		%	30
5030828	GRU	Matrix Spike		1,4-Difluorobenzene	2017/06/16		98	%	60 - 140
				4-Bromofluorobenzene	2017/06/16		101	%	60 - 140
				D10-Ethylbenzene	2017/06/16		111	%	60 - 140
				D4-1,2-Dichloroethane	2017/06/16		93	%	60 - 140
				Benzene	2017/06/16		100	%	60 - 140
				Toluene	2017/06/16		97	%	60 - 140
				Ethylbenzene	2017/06/16		97	%	60 - 140
				o-Xylene	2017/06/16		100	%	60 - 140
				p+m-Xylene	2017/06/16		95	%	60 - 140
				F1 (C6-C10)	2017/06/16		86	%	60 - 140
5030828	GRU	Spiked Blank		1,4-Difluorobenzene	2017/06/16		97	%	60 - 140
				4-Bromofluorobenzene	2017/06/16		98	%	60 - 140
				D10-Ethylbenzene	2017/06/16		95	%	60 - 140
				D4-1,2-Dichloroethane	2017/06/16		95	%	60 - 140
				Benzene	2017/06/16		97	%	60 - 140
				Toluene	2017/06/16		89	%	60 - 140
				Ethylbenzene	2017/06/16		91	%	60 - 140
				o-Xylene	2017/06/16		90	%	60 - 140
				p+m-Xylene	2017/06/16		87	%	60 - 140
				F1 (C6-C10)	2017/06/16		91	%	80 - 120
5030828	GRU	Method Blank		1,4-Difluorobenzene	2017/06/15		97	%	60 - 140
				4-Bromofluorobenzene	2017/06/15		100	%	60 - 140
				D10-Ethylbenzene	2017/06/15		101	%	60 - 140
				D4-1,2-Dichloroethane	2017/06/15		95	%	60 - 140
				Benzene	2017/06/15	<0.020		ug/g	
				Toluene	2017/06/15	<0.020		ug/g	
				Ethylbenzene	2017/06/15	<0.020		ug/g	
				o-Xylene	2017/06/15	<0.020		ug/g	
				p+m-Xylene	2017/06/15	<0.040		ug/g	
				Total Xylenes	2017/06/15	<0.040		ug/g	
				F1 (C6-C10)	2017/06/15	<10		ug/g	
				F1 (C6-C10) - BTEX	2017/06/15	<10		ug/g	

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
5030828	GRU	RPD	Benzene	2017/06/16	NC		%	50
			Toluene	2017/06/16	NC		%	50
			Ethylbenzene	2017/06/16	NC		%	50
			o-Xylene	2017/06/16	NC		%	50
			p+m-Xylene	2017/06/16	NC		%	50
			Total Xylenes	2017/06/16	NC		%	50
			F1 (C6-C10)	2017/06/16	NC		%	30
			F1 (C6-C10) - BTEX	2017/06/16	NC		%	30
5031490	TA1	Spiked Blank	Available (CaCl2) pH	2017/06/16		99	%	97 - 103
5031490	TA1	RPD	Available (CaCl2) pH	2017/06/16	0.028		%	N/A
5033224	SK1	Matrix Spike	F4G-sg (Grav. Heavy Hydrocarbons)	2017/06/17		105	%	65 - 135
5033224	SK1	Spiked Blank	F4G-sg (Grav. Heavy Hydrocarbons)	2017/06/17		101	%	65 - 135
5033224	SK1	Method Blank	F4G-sg (Grav. Heavy Hydrocarbons)	2017/06/17	<100		ug/g	
5033224	SK1	RPD	F4G-sg (Grav. Heavy Hydrocarbons)	2017/06/17	NC		%	50

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Brad Newman, Scientific Specialist



Cristina Carriere, Scientific Services

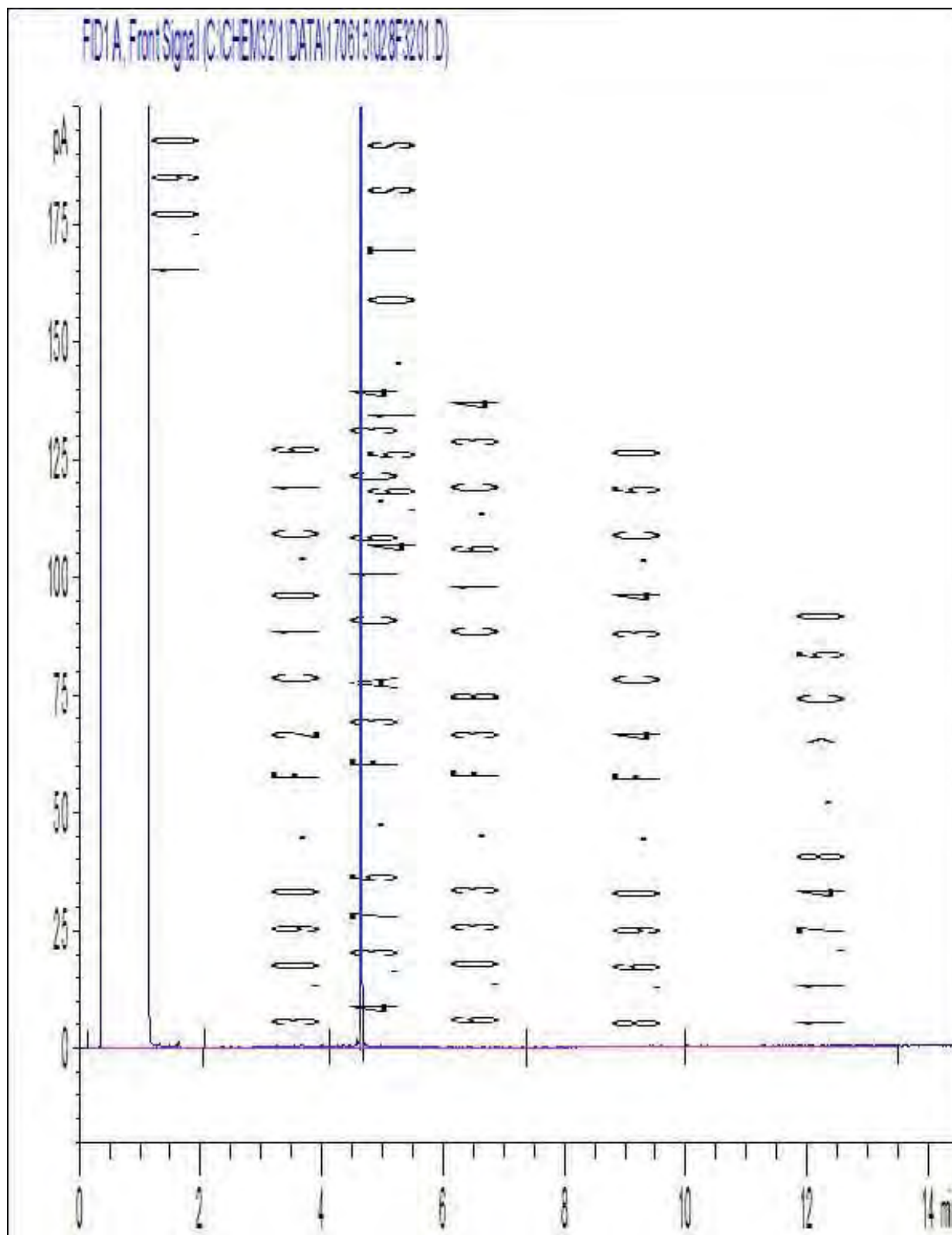
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

098454 Page 1 of 1

Invoice Information Company Name: Pinehill Ltd Contact Name: Mike Kosich, Ryan Address: Christine Wilson Phone: 1 Hines Email:		Report Information (if differs from Invoice) Company Name: Contact Name: Address: ← SAME Phone: / Fax: Email:		Project Information (where applicable) Discussion #: Proj. # After: Project # 2062-78-001 Site Location: Chickman Rd Date #: Sampled By:		Turnaround Time (TAT) Required ☐ Regular TAT (3-7 days) (Most analyses) PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS Rush TAT (Samples will be accepted) ☒ 1 Day ☐ 2 Days ☐ 3-4 Days Date Required: RUSH ASAP Rush Confirmation #:	
MOSE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE MAXIMAX ANALYSIS CHAIN OF CUSTODY						LABORATORY USE ONLY	
Regulation 153 ☐ Table 1 ☐ Res/Park ☐ Sewer/Storm ☒ Other ☐ Table 2 ☐ Land/Comms ☐ Other ☐ Table 3 ☐ Heavy Other ☒ Table 7 FOR NSC (PLEASE CIRCLE) Y ☒ N		Other Regulations ☐ CCME ☐ Sanitary Sewer Bylaw ☐ MISA ☐ Storm Sewer Bylaw ☐ PWQG Region ☐ Other (Specify) ☐ RESI 558 (MUN. 1 DAY TAT REQUIRED)		Analysis Chain of Custody RECEIVED (Signature) Initial (Date) BY/DATE ANALYST ANALYST'S PHONE NUMBER ANALYST'S EMAIL TIME & DATE (Municipal) (Municipal) (Municipal)		CUSTOMER SEAL Project ID: 55 10, 8, 10 Project ID: 55 4, 4, 3 COOLING MEDIA PRESENT: 0 / 1 COMMENTS:	
Include Criteria on Garphs of Analysis: Y / N SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXIMAX						CHAIN OF CUSTODY SAMPLE IDENTIFICATION DATE SAMPLED (YYYY/MM/DD) TIME SAMPLED (HH:MM) NUMBER 1 BH-1 SS-1 June 14 AM 5:00 2 BH-1 SS-2 2017 3 BH-1 G.S. 4 MW-2 SS-3 5 6 7 8 9 10	
RECEIVED IN OTTAWA						RECEIVED IN OTTAWA	
14-Jun-17 16:00 Alison Cameron B7C3980 TSP ENV-1079						On ice	
SIGNATURE OF (Signature/Print) Mike Kosich		DATE: (YYYY/MM/DD) June 14, 2017		TIME: (HH:MM) 2:00		RECEIVED BY (Signature/Print) Mariana Vascon / Alison	
DATE: (YYYY/MM/DD) June 14, 2017		TIME: (HH:MM) 16:00		RECEIVED BY (Signature/Print) Mariana Vascon / Alison		DATE: (YYYY/MM/DD) 2017/06/14	
TIME: (HH:MM) 16:00		RECEIVED BY (Signature/Print) Mariana Vascon / Alison		DATE: (YYYY/MM/DD) 2017/06/14		TIME: (HH:MM) 16:00	

Unless otherwise agreed to in writing, work submitted on this Chain of Custody is subject to Maxam's standard Terms and Conditions. Signing of this Chain of Custody document is acknowledgement and acceptance of our terms which are available for viewing at www.maxam.ca/terms. Sample containers, preservation, hold times and packaging information can be viewed at <http://www.maxam.ca/no-content/uploads/CM2012-02-01.pdf>.

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

[illegible]

Page 13 of 13

Your Project #: 206278.001
Site Location: RICHMOND RD
Your C.O.C. #: 98454

Attention:Mike Kosiw

Pinchin Ltd
Ottawa
1 Hines Road
Suite 200
Kanata, ON
K2K 3C7

Report Date: 2017/06/19
Report #: R4547498
Version: 2 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7C3980

Received: 2017/06/14, 16:00

Sample Matrix: Soil
Samples Received: 4

Analyses	Date		Date Analyzed	Laboratory Method	Reference
	Quantity	Extracted			
Petroleum Hydro. CCME F1 & BTEX in Soil (1, 2)	2	N/A	2017/06/16	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Soil (1, 3)	2	2017/06/15	2017/06/16	CAM SOP-00316	CCME CWS m
F4G (CCME Hydrocarbons Gravimetric) (1)	1	2017/06/17	2017/06/17	CAM SOP-00316	CCME PHC-CWS m
Moisture (1)	2	N/A	2017/06/15	CAM SOP-00445	Carter 2nd ed 51.2 m
pH CaCl2 EXTRACT (1)	2	2017/06/16	2017/06/16	CAM SOP-00413	EPA 9045 D m
Sieve, 75um (1)	1	N/A	2017/06/16	CAM SOP-00467	Carter 2nd ed m

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

(1) This test was performed by Maxxam Analytics Mississauga

(2) No lab extraction date is given for F1BTEX & VOC samples that are field preserved with methanol. Extraction date is the date sampled unless otherwise stated.

(3) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Alison Cameron, Project Manager

Email: ACameron@maxxam.ca

Phone# (613) 274-0573

=====

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Job #: B7C3980
Report Date: 2017/06/19

Pinchin Ltd
Client Project #: 206278.001
Site Location: RICHMOND RD
Sampler Initials: MK

RESULTS OF ANALYSES OF SOIL

Maxxam ID		EOH259	EOH260	EOH261	EOH262			
Sampling Date		2017/06/14	2017/06/14	2017/06/14	2017/06/14			
COC Number		98454	98454	98454	98454			
	UNITS	BH-1 SS-1	BH-1 SS-2	BH-1 G.S.	MW-2 SS-3	RDL	QC Batch	MDL
Inorganics								
Moisture	%		11		12	1.0	5030251	0.50
Available (CaCl ₂) pH	pH	7.66			7.90		5031490	
Miscellaneous Parameters								
Grain Size	%			FINE		N/A	5030043	N/A
Sieve - #200 (<0.075mm)	%			71		1	5030043	N/A
Sieve - #200 (>0.075mm)	%			29		1	5030043	N/A
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		EOH260	EOH262			
Sampling Date		2017/06/14	2017/06/14			
COC Number		98454	98454			
	UNITS	BH-1 SS-2	MW-2 SS-3	RDL	QC Batch	MDL
BTEX & F1 Hydrocarbons						
Benzene	ug/g	<0.020	0.022	0.020	5030828	0.020
Toluene	ug/g	0.040	0.068	0.020	5030828	0.020
Ethylbenzene	ug/g	<0.020	<0.020	0.020	5030828	0.020
o-Xylene	ug/g	<0.020	0.025	0.020	5030828	0.020
p+m-Xylene	ug/g	<0.040	0.066	0.040	5030828	0.040
Total Xylenes	ug/g	<0.040	0.091	0.040	5030828	0.040
F1 (C6-C10)	ug/g	<10	<10	10	5030828	5.0
F1 (C6-C10) - BTEX	ug/g	<10	<10	10	5030828	5.0
F2-F4 Hydrocarbons						
F4G-sg (Grav. Heavy Hydrocarbons)	ug/g		660	100	5033224	100
F2 (C10-C16 Hydrocarbons)	ug/g	<10	160	10	5030790	5.0
F3 (C16-C34 Hydrocarbons)	ug/g	<50	250	50	5030790	5.0
F4 (C34-C50 Hydrocarbons)	ug/g	<50	190	50	5030790	10
Reached Baseline at C50	ug/g	Yes	No		5030790	
Surrogate Recovery (%)						
1,4-Difluorobenzene	%	99	96		5030828	
4-Bromofluorobenzene	%	102	100		5030828	
D10-Ethylbenzene	%	112	109		5030828	
D4-1,2-Dichloroethane	%	95	92		5030828	
o-Terphenyl	%	98	100		5030790	
RDL = Reportable Detection Limit						
QC Batch = Quality Control Batch						

Maxxam Job #: B7C3980
Report Date: 2017/06/19

Pinchin Ltd
Client Project #: 206278.001
Site Location: RICHMOND RD
Sampler Initials: MK

TEST SUMMARY

Maxxam ID: EOH259
Sample ID: BH-1 SS-1
Matrix: Soil

Collected: 2017/06/14
Shipped:
Received: 2017/06/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
pH CaCl2 EXTRACT	AT	5031490	2017/06/16	2017/06/16	Tahir Anwar

Maxxam ID: EOH260
Sample ID: BH-1 SS-2
Matrix: Soil

Collected: 2017/06/14
Shipped:
Received: 2017/06/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	5030828	N/A	2017/06/16	Georgeta Rusu
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	5030790	2017/06/15	2017/06/16	Zhiyue (Frank) Zhu
Moisture	BAL	5030251	N/A	2017/06/15	Valentina Kaftani

Maxxam ID: EOH261
Sample ID: BH-1 G.S.
Matrix: Soil

Collected: 2017/06/14
Shipped:
Received: 2017/06/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Sieve, 75um	SIEV	5030043	N/A	2017/06/16	Chun Yan

Maxxam ID: EOH262
Sample ID: MW-2 SS-3
Matrix: Soil

Collected: 2017/06/14
Shipped:
Received: 2017/06/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	5030828	N/A	2017/06/16	Georgeta Rusu
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	5030790	2017/06/15	2017/06/16	Zhiyue (Frank) Zhu
F4G (CCME Hydrocarbons Gravimetric)	BAL	5033224	2017/06/17	2017/06/17	Sandeep Kaur
Moisture	BAL	5030251	N/A	2017/06/15	Valentina Kaftani
pH CaCl2 EXTRACT	AT	5031490	2017/06/16	2017/06/16	Tahir Anwar

GENERAL COMMENTS

Results relate only to the items tested.

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
5030043	CYN	QC Standard	Sieve - #200 (<0.075mm)	2017/06/16		55	%	53 - 58
			Sieve - #200 (>0.075mm)	2017/06/16		45	%	42 - 47
5030043	CYN	RPD - Sample/Sample Dup	Sieve - #200 (<0.075mm)	2017/06/16	0.97		%	20
			Sieve - #200 (>0.075mm)	2017/06/16	0.99		%	20
5030251	NS3	RPD - Sample/Sample Dup	Moisture	2017/06/15	0.72		%	20
5030790	ZZ	Matrix Spike	o-Terphenyl	2017/06/16		95	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2017/06/16		95	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2017/06/16		99	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2017/06/16		98	%	50 - 130
5030790	ZZ	Spiked Blank	o-Terphenyl	2017/06/16		93	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2017/06/16		92	%	80 - 120
			F3 (C16-C34 Hydrocarbons)	2017/06/16		97	%	80 - 120
			F4 (C34-C50 Hydrocarbons)	2017/06/16		93	%	80 - 120
5030790	ZZ	Method Blank	o-Terphenyl	2017/06/16		97	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2017/06/16	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2017/06/16	<50		ug/g	
			F4 (C34-C50 Hydrocarbons)	2017/06/16	<50		ug/g	
5030790	ZZ	RPD - Sample/Sample Dup	F2 (C10-C16 Hydrocarbons)	2017/06/16	NC		%	30
			F3 (C16-C34 Hydrocarbons)	2017/06/16	26		%	30
			F4 (C34-C50 Hydrocarbons)	2017/06/16	NC		%	30
5030828	GRU	Matrix Spike	1,4-Difluorobenzene	2017/06/16		98	%	60 - 140
			4-Bromofluorobenzene	2017/06/16		101	%	60 - 140
			D10-Ethylbenzene	2017/06/16		111	%	60 - 140
			D4-1,2-Dichloroethane	2017/06/16		93	%	60 - 140
			Benzene	2017/06/16		100	%	60 - 140
			Toluene	2017/06/16		97	%	60 - 140
			Ethylbenzene	2017/06/16		97	%	60 - 140
			o-Xylene	2017/06/16		100	%	60 - 140
			p+m-Xylene	2017/06/16		95	%	60 - 140
			F1 (C6-C10)	2017/06/16		86	%	60 - 140
5030828	GRU	Spiked Blank	1,4-Difluorobenzene	2017/06/16		97	%	60 - 140
			4-Bromofluorobenzene	2017/06/16		98	%	60 - 140
			D10-Ethylbenzene	2017/06/16		95	%	60 - 140
			D4-1,2-Dichloroethane	2017/06/16		95	%	60 - 140
			Benzene	2017/06/16		97	%	60 - 140
			Toluene	2017/06/16		89	%	60 - 140
			Ethylbenzene	2017/06/16		91	%	60 - 140
			o-Xylene	2017/06/16		90	%	60 - 140
			p+m-Xylene	2017/06/16		87	%	60 - 140
			F1 (C6-C10)	2017/06/16		91	%	80 - 120
5030828	GRU	Method Blank	1,4-Difluorobenzene	2017/06/15		97	%	60 - 140
			4-Bromofluorobenzene	2017/06/15		100	%	60 - 140
			D10-Ethylbenzene	2017/06/15		101	%	60 - 140
			D4-1,2-Dichloroethane	2017/06/15		95	%	60 - 140
			Benzene	2017/06/15	<0.020		ug/g	
			Toluene	2017/06/15	<0.020		ug/g	
			Ethylbenzene	2017/06/15	<0.020		ug/g	
			o-Xylene	2017/06/15	<0.020		ug/g	
			p+m-Xylene	2017/06/15	<0.040		ug/g	
			Total Xylenes	2017/06/15	<0.040		ug/g	
			F1 (C6-C10)	2017/06/15	<10		ug/g	
			F1 (C6-C10) - BTEX	2017/06/15	<10		ug/g	

Maxxam Job #: B7C3980
Report Date: 2017/06/19

Pinchin Ltd
Client Project #: 206278.001
Site Location: RICHMOND RD
Sampler Initials: MK

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
5030828	GRU	RPD - Sample/Sample Dup	Benzene	2017/06/16	NC		%	50
			Toluene	2017/06/16	NC		%	50
			Ethylbenzene	2017/06/16	NC		%	50
			o-Xylene	2017/06/16	NC		%	50
			p+m-Xylene	2017/06/16	NC		%	50
			Total Xylenes	2017/06/16	NC		%	50
			F1 (C6-C10)	2017/06/16	NC		%	30
			F1 (C6-C10) - BTEX	2017/06/16	NC		%	30
5031490	TA1	Spiked Blank	Available (CaCl2) pH	2017/06/16		99	%	97 - 103
5031490	TA1	RPD - Sample/Sample Dup	Available (CaCl2) pH	2017/06/16	0.028		%	N/A
5033224	SK1	Matrix Spike	F4G-sg (Grav. Heavy Hydrocarbons)	2017/06/17		105	%	65 - 135
5033224	SK1	Spiked Blank	F4G-sg (Grav. Heavy Hydrocarbons)	2017/06/17		101	%	65 - 135
5033224	SK1	Method Blank	F4G-sg (Grav. Heavy Hydrocarbons)	2017/06/17	<100		ug/g	
5033224	SK1	RPD - Sample/Sample Dup	F4G-sg (Grav. Heavy Hydrocarbons)	2017/06/17	NC		%	50

N/A = Not Applicable

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Brad Newman, Scientific Specialist



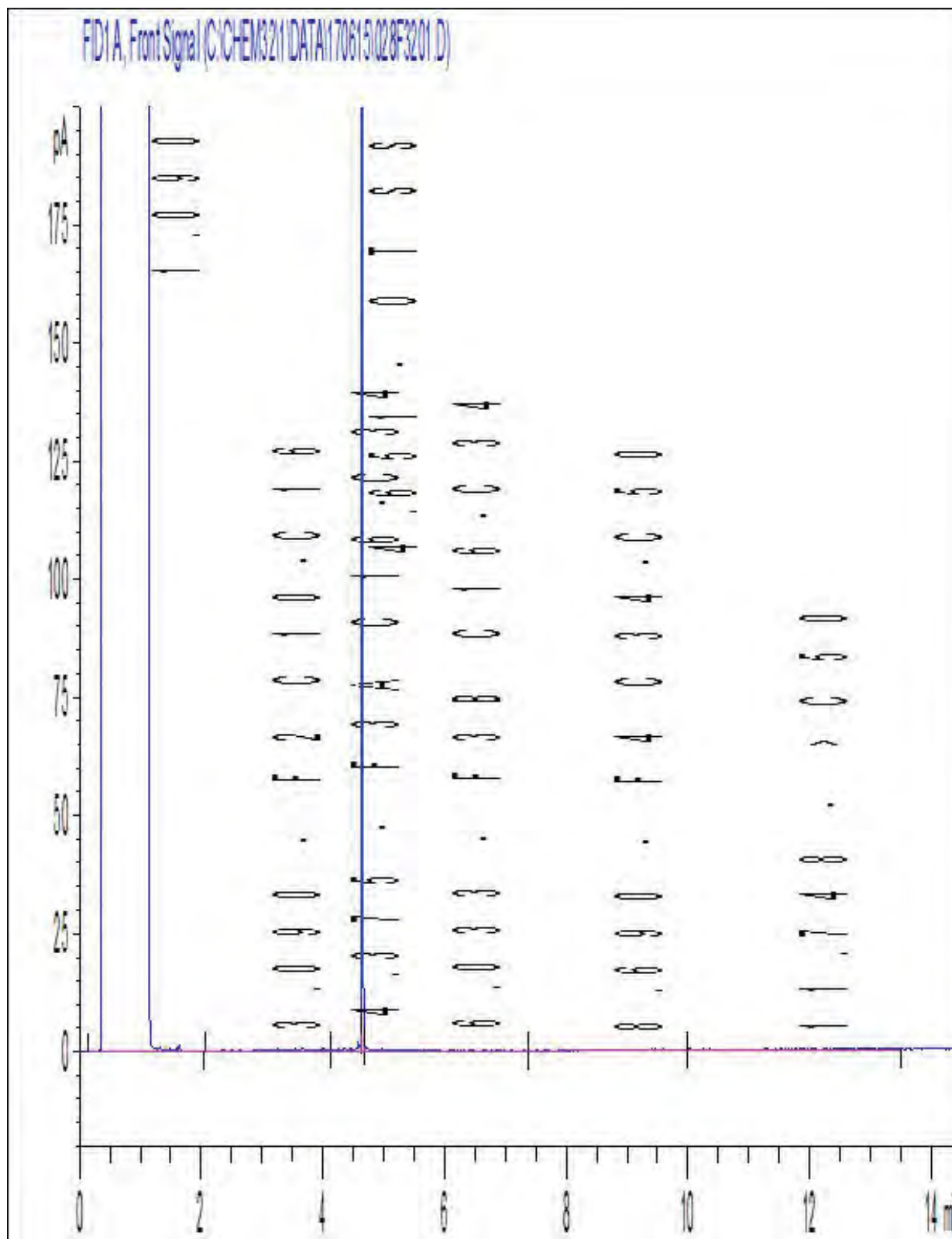
Cristina Carriere, Scientific Services

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Invoice Information Company Name: <u>Pinehill Ltd.</u> Contact Name: <u>Mike Kosko M. Ryan</u> Address: <u>Christie Wilson</u> Phone: <u>1 Hines</u> Fax: Email:		Report Information (if differs from Invoice) Company Name: Contact Name: Address: <u>← SAME</u> Phone: Fax: Email:		Project Information (where applicable) Question #: P.O. #/AF#: Project #: Site Location: <u>2062 78⁰⁰¹ Richmond Rd.</u> Site #: Sampled by:		Turnaround Time (TAT) Required ☐ Regular TAT (5-7 days) (Most Analytes) ☒ Rush TAT (Discharges will be expedited) Rush TAT: ☒ 1 Day ☐ 2 Days ☐ 3-4 Days Date Required: <u>RUSH ASAP</u> Rush Confirmation #:	
MUST REGULATE DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE MAXXAM DRINKING WATER CHAIN OF CUSTODY							
Regulation 133 ☐ Table 1 ☐ Res./P/R ☐ Metal/P/R ☐ Table 2 ☒ Res./C/Res ☒ Metal ☐ Table 3 ☐ Agry. Other ☒ Table 7 FOR RUC (PLEASE CIRCLE): <u>Y</u> <u>N</u>		Other Regulations ☐ CCME ☐ Sanitary Sewer Bylaw ☐ MMSA ☐ Storm Sewer System ☐ PWDQ Region: ☐ HED 558 (MNH, 1 Day TAT REQUIRED)		Analysis Requested CUSTOMER SEAL: <u>5/11</u> Project: <u>55</u> Issue: <u>10, 9, 10</u> Date: <u>4/17</u> COOLING MEDIA PRESENT: ☐ ☒ <u>1</u> <u>H</u> COMMENTS:		LABORATORY USE ONLY COOLING MEDIA PRESENT: ☐ ☒ <u>1</u> <u>H</u> COMMENTS:	
SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM							
SAMPLE IDENTIFICATION		DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH:MM)	WATER	pH	TEMPERATURE	COMMENTS
1 BH-1 SS-1		June 4, 2017	AM 9:00				
2 BH-1 SS-2		2017	1				
3 BH-1 G.S.							
4 MW-2 SS-3							
5							
6							
7							
8							
9							
10							
SUBMITTED BY (Signature/Date) <u>Mike Kosko</u> <u>June 4, 2017</u>		DATE (YYYY/MM/DD)	TIME (HH:MM)	RECEIVED BY (Signature/Date) <u>Alison Cameron</u> <u>June 4, 2017</u>	DATE (YYYY/MM/DD)	TIME (HH:MM)	MAXXAM JOB #
DATE (YYYY/MM/DD)		TIME (HH:MM)	RECEIVED BY (Signature/Date)	DATE (YYYY/MM/DD)	TIME (HH:MM)	MAXXAM JOB #	

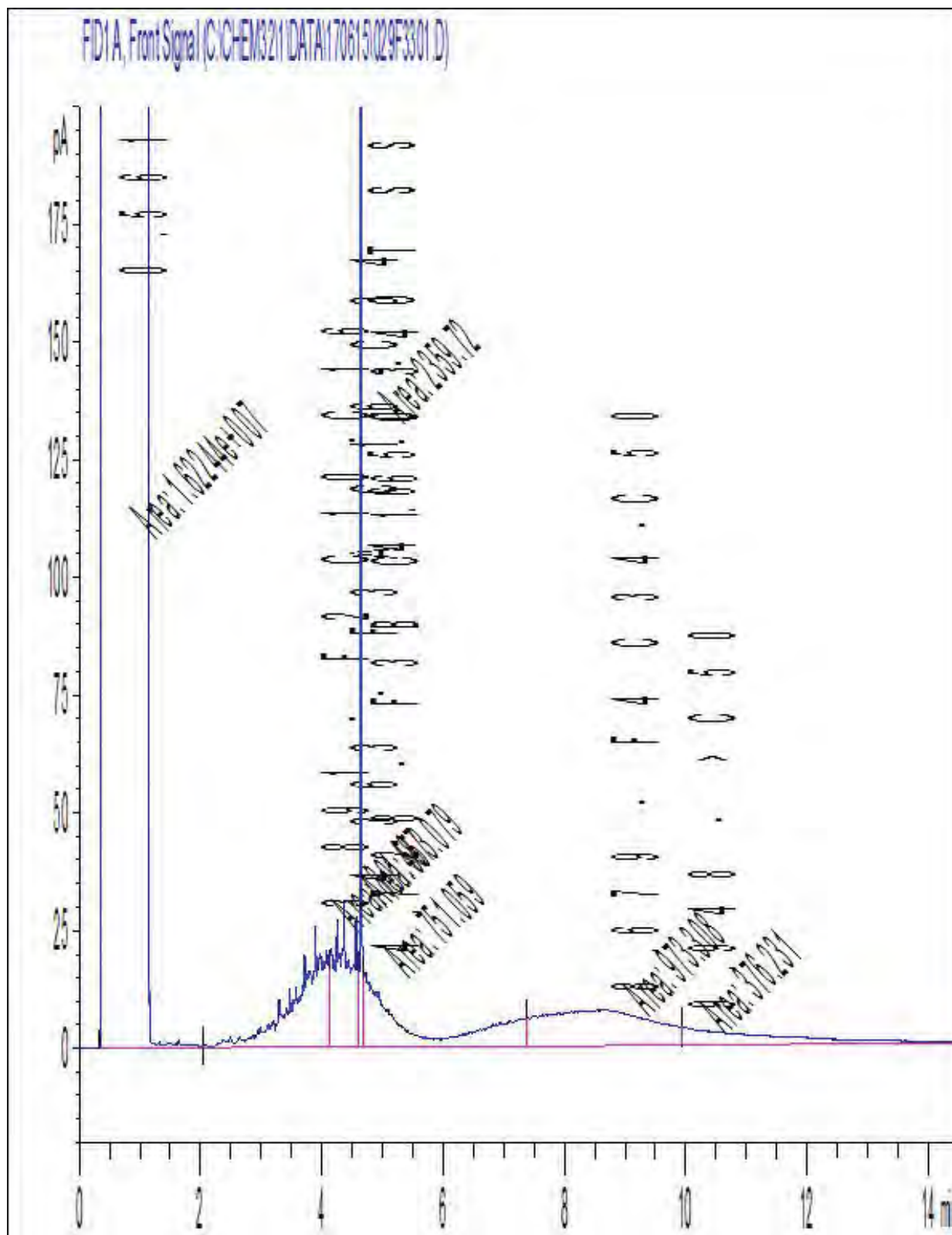
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Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



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