Phase II Environmental Site Assessment

1545 and 1545A Merivale Road
Ottawa, Ontario

Prepared for:

Dr. Nirav Patel
464 Welland Avenue
St. Catharines, ON L2N 5V4

May 14, 2021

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Issued To:	**Dr. Nirav Patel**
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EXECUTIVE SUMMARY

Pinchin Ltd. (Pinchin) was retained through an Authorization to Proceed, Limitation of Liability and Terms of Engagement signed by Dr. Nirav Patel (Client) to conduct a Phase II Environmental Site Assessment (ESA) of the property located at 1545 and 1545A Merivale Road in Ottawa, Ontario (hereafter referred to as the Site).

The Site is developed with two single-storey commercial buildings (Site Buildings A and B).

The purpose of this Phase II ESA was to address potential issues of environmental concern identified during a Phase I ESA conducted by Pinchin in relation to the potential acquisition of the Site.

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

- The Ontario Spills database indicated that approximately 250 litres of heating oil was released to the ground in the vicinity of Site Building B on April 17, 2000. The source of the release was reportedly the corrosion of an aboveground storage tank. The Environmental Risk Information Service Ltd. (ERIS) report indicated that environmental impact was confirmed as soil contamination and an underground tank was discovered. No evidence of an underground tank (i.e. vent or fill pipes) was identified in the vicinity of Site Building B by Pinchin during the Site reconnaissance; and
- A retail fuel outlet (RFO) developed with underground storage tanks has been situated adjacent to the Site's northwest elevation since at least 1991. This property is hydraulically upgradient of the Site relative to the inferred groundwater flow direction. As part of a previous environmental investigation completed at the Site, a groundwater sample collected from a monitoring well on located central-west Site boundary and situated in the immediate vicinity of the above-noted RFO had concentrations of petroleum hydrocarbons fractions F1 to F2 which exceeded the currently applicable *Table 3 Standard*s.

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 between April 19 and 26, 2021, and consisted of the advancement of four boreholes, three of which were completed as groundwater monitoring wells.

Select "worst case" soil samples collected during the borehole drilling program were submitted for laboratory analysis of petroleum hydrocarbons (PHCs) in the F1 to F4 fraction ranges (F1-F4) and volatile organic compounds (VOCs). Groundwater samples collected from the newly installed were submitted for laboratory analysis of PHCs (F1-F4) and VOCs.

Based on Site-specific information, the soil and groundwater quality was assessed based on the Ontario Ministry of the Environment, Conservation and Parks *Table 3 Standards* for industrial/commercial/ community land use and medium/fine-textured soil.

Reported concentrations in the soil and groundwater samples submitted for analysis of PHCs (F1-F4), VOCs and PAHs satisfied the *Table 3 Standards.*

Based on the findings of this Phase II ESA, it is Pinchin's opinion that no further subsurface investigation is required for the Site in relation to the findings of the Phase I ESA at this time.

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, Limitation of Liability and Terms of Engagement signed by Dr. Nirav Patel (Client) to conduct a Phase II Environmental Site Assessment (ESA) of the property located at 1545 and 1545A Merivale Road in Ottawa, Ontario (hereafter referred to as the Site). The Site location is shown on Figure 1 (all Figures are provided in Appendix I).

The Site is developed with two single-storey commercial buildings (Site Buildings A and B).

The purpose of this Phase II ESA was to address potential issues of environmental concern identified during a Phase I ESA conducted by Pinchin in relation to the potential acquisition 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 (R2018)*", dated 2000 and reaffirmed in 2018.

1.1 Background

Pinchin completed a Phase I ESA of the Site for the Client, the findings of which were provided in the report entitled "*Phase I Environmental Site Assessment, 1545 and 1545A Merivale Road, Ottawa, Ontario*", dated April 9, 2021. The results of the Phase I ESA completed by Pinchin identified the following areas of potential environmental concern that could give rise to potential subsurface impacts in connection with the Site:

- The Ontario Spills database indicated that approximately 250 litres of heating oil was released to the ground in the vicinity of Site Building B on April 17, 2000. The source of the release was reportedly the corrosion of an aboveground storage tank. The Environmental Risk Information Service Ltd. (ERIS) report indicated that environmental impact was confirmed as soil contamination and an underground tank was discovered. No evidence of an underground tank (i.e. vent or fill pipes) was identified in the vicinity of Site Building B by Pinchin during the Site reconnaissance; and
- A retail fuel outlet (RFO) developed with underground storage tanks has been situated adjacent to the Site's northwest elevation since at least 1991. This property is hydraulically upgradient of the Site relative to the inferred groundwater flow direction. As part of a previous environmental investigation completed at the Site, a groundwater sample collected from a monitoring well on located central-west Site boundary and situated in the immediate vicinity of the above-noted RFO had concentrations of petroleum hydrocarbons fractions F1 to F2 which exceeded the currently applicable *Table 3 Standard*s.

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 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, 1545 and 1545A Merivale Road, Ottawa, Ontario*" submitted to the Client on April 8, 2021, included the following:

- Advancement of four boreholes following the clearance of underground services, three of which were instrumented with a monitoring well;
- Submission of select "worst case" soil samples for laboratory analysis of petroleum hydrocarbons (PHCs) in the F1 to F4 fraction ranges (F1-F4) and volatile organic compounds (VOCs);
- Collection of groundwater samples from each of the newly installed monitoring wells, following well development and purging, for laboratory analysis of PHCs (F1-F4) and VOCs;
- 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.

2.0 METHODOLOGY

The investigation methodology was conducted in general accordance with the Ontario Ministry of the Environment, Conservation and Parks (MECP) document entitled *"Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario"* dated December 1996 (*MECP 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 April 19, 2021 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 MECP in accordance with Ontario Regulation 903 (as amended) to undertake borehole drilling/well installation activities.

The boreholes were advanced to a maximum depth of 4.6 metres below ground surface (mbgs) using a GeoMachine direct push drill rig. It should be noted that dense till was encountered at a depth of 3.8 mbgs. As such, the monitoring wells were advanced into the dense till to a depth of 4.6 mbgs to enable groundwater sampling. 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 VOC and petroleum-derived vapour concentrations in soil headspace using a photoionization detector (PID) and a hydrocarbon surveyor operated in methane elimination mode (RKI Eagle).

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

Groundwater monitoring wells were installed in boreholes MW-1 through MW-3 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 the suspected static groundwater level.

Each 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 10 cm ID Schedule 40 PVC outer casing, approximately 20 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 and on Table 3 in Appendix III (all Tables are provided within Appendix III).

2.3 Groundwater Monitoring

The water levels within the monitoring wells were measured on April 21 and 26, 2021 using an interface probe. The presence/absence of non-aqueous phase liquid (NAPL) was also assessed during groundwater monitoring using the interface probe.

2.4 Sampling and Laboratory Analysis

2.4.1 Soil

One most apparent "worst case" soil sample, based on vapour concentrations as well as visual, olfactory considerations, preferred pathway migration, groundwater depths and contaminant characteristics, recovered from each borehole was submitted for laboratory analysis of PHCs (F1-F4), VOCs and PAHs.

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 MECP document entitled "*Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*", dated April 15, 2011 (*MECP Standards*).

The borehole locations are shown on Figure 2. Table 1 provides a summary of the soil samples submitted for laboratory analysis.

2.4.2 Groundwater

On April 21, 2021, all newly installed groundwater monitoring wells were purged until dry, in accordance with Pinchin's SOPs.

On April 26, 2021, newly installed groundwater monitoring wells were purged and sampled in accordance with Pinchin's SOPs. The groundwater samples collected from these monitoring wells were submitted for laboratory analysis of PHCs (F1-F4), VOCs and PAHs.

All monitoring well development activities were conducted using dedicated inertial pumps comprised of Waterra polyethylene tubing and foot valves. Following pre-sampling purging with dedicated inertial pumps, sampling for PHCs (F2 F4) and PAHs was conducted using a peristaltic pump and dedicated polyethylene tubing. Sampling for VOCs and PHCs (F1) was then conducted using dedicated inertial pumps.

The monitoring well locations are shown on Figure 2. Table 2 provides a summary of the groundwater samples submitted for laboratory analysis.

2.4.3 Analytical Laboratory

Selected soil and groundwater samples were delivered to Paracel Analytics Ltd (Paracel) in Ottawa, Ontario for analysis. Paracel 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 Paracel.

2.5 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 wells were developed following installation and were 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 *MECP Sampling Guideline*, the *APGO Guideline* and Pinchin's SOPs for Phase II ESAs.

Paracel'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 calculations for laboratory duplicate samples, and an evaluation of surrogate recoveries.

2.6 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 MECP and the Client to fulfill the requirements of Ontario Regulation 903 (as amended).

2.7 Site Condition Standards

The Site is a commercial 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 at the Site were submitted for 75 micron single-sieve grain size analysis. Based on the results of this analysis, the soil at the Site is interpreted to be medium/fine-textured for the purpose of selecting the appropriate *MECP Standards.*

The pH and grain size analytical results are summarized in Table 3.

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

- "Table 3: Full Depth Generic Site Condition Standards for Use in a Non-Potable Ground Water Condition", provided in the *MECP Standards* (*Table 3 Standards*) for:
  - Medium/fine-textured soils; and
  - Industrial/commercial/community property use.

As such, the analytical results have been compared to these *Table 3 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 below the asphalt surface generally consists of fill material comprised of sand and gravel to a depth of approximately 0.5 mbgs.

Native subsurface material underlying the fill material was observed to generally consist of silty clay and sand and gravel till that extended to the maximum borehole completion depth of 3.8 mbgs were dense till was encountered. It should be noted that the monitoring wells were advanced into the dense till to a depth of 4.6 mbgs to enable groundwater sampling. The soil was not observed to be moist to wet during the drilling program.

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

The water level information obtained during groundwater monitoring is presented in Table 4 and on the borehole logs in Appendix II. The depth to groundwater measured within the monitoring wells ranged from 2.0 mbgs at monitoring well MW-1 to 2.5 mbgs at monitoring well MW-2 on April 26, 2021.

An unnamed creek is located approximately 1.5 kilometre (km) south of the Site. Groundwater flow at the Site is inferred to be towards the south based on the location of the unnamed creek.

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 did not range above zero parts per million by volume within any of the boreholes, using the CGI and the PID.

3.3 Field Observations

No odours or staining were observed in the soil samples collected during the borehole drilling program.

No odours or evidence of NAPL were observed during groundwater monitoring and sampling, with the exception of the groundwater at monitoring well MW-3 which exhibited a PHC-like odour.

3.4 Analytical

3.4.1 Soil

As indicated in Table 5, reported concentrations of PHCs (F1-F4) and VOCs in the soil samples submitted for analysis met the *Table 3 Standards.*

The laboratory Certificate of Analysis for the soil samples is provided in Appendix IV.

3.4.2 Groundwater

As indicated in Table 6, reported concentrations in the groundwater samples submitted for analysis of PHCs (F1-F4) and VOCs met the *Table 3 Standards*.

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

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 four boreholes at the Site on April 19, 2021. The boreholes were advanced to a maximum depth of 3.8 mbgs using a GeoMachine direct push drill rig. Three boreholes were instrumented with monitoring wells to enable groundwater monitoring and sampling;
- The soil stratigraphy at the drilling locations generally consists of sand and gravel fill material to a depth of approximately 1.5 mbgs overlying native soil comprised of silty clay and sand and gravel till that extended to the maximum borehole completion depth of 3.8 mbgs were dense till was encountered. It should be noted that the monitoring wells were advanced into the dense till to a depth of 4.6 mbgs to enable groundwater sampling. The soil was not observed to be moist to wet during the drilling program;
- Groundwater levels at the Site measured on April 26, 2021 varied between 1.9 mbgs (MW-1) and 2.4 mbgs (MW-3). Inferred groundwater flow is expected to be south based on the presence of an unnamed creek located south of the Site;
- Based on Site-specific information, the soil and groundwater quality was assessed based on the *Table 3 Standards* for industrial/commercial/community land use and medium/fine-textured soils;
- Four “worst case” soil samples based on the results of field screening were submitted for laboratory analysis of PHCs (F1-F4) and VOCs;
- Groundwater samples were collected from monitoring wells MW-1 through MW-3 installed by Pinchin on April 26, 2021 and were submitted for laboratory analysis of PHCs (F1-F4) and VOCs;
- Reported concentrations in the soil samples submitted for analysis of PHCs (F1-F4) and VOCs satisfied their respective *Table 3 Standards*; and
- Reported concentrations in the groundwater samples submitted for analysis of PHCs (F1-F4) and VOCs satisfied their respective *Table 3 Standards.*

Based on the findings of this Phase II ESA, it is Pinchin’s opinion that no further subsurface investigation is required for the Site in relation to the findings of the Phase I ESA at this time.

5.0 TERMS AND LIMITATIONS

This Phase II ESA was performed for Dr. Nirav Patel (Client) in order to investigate potential environmental impacts at 1545 and 1545A Merivale Road in Ottawa, Ontario (Site). This Phase II ESA does not quantify the extent of the current and/or potential environmental impacts 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 environmental impacts 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 environmental impacts 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.

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.

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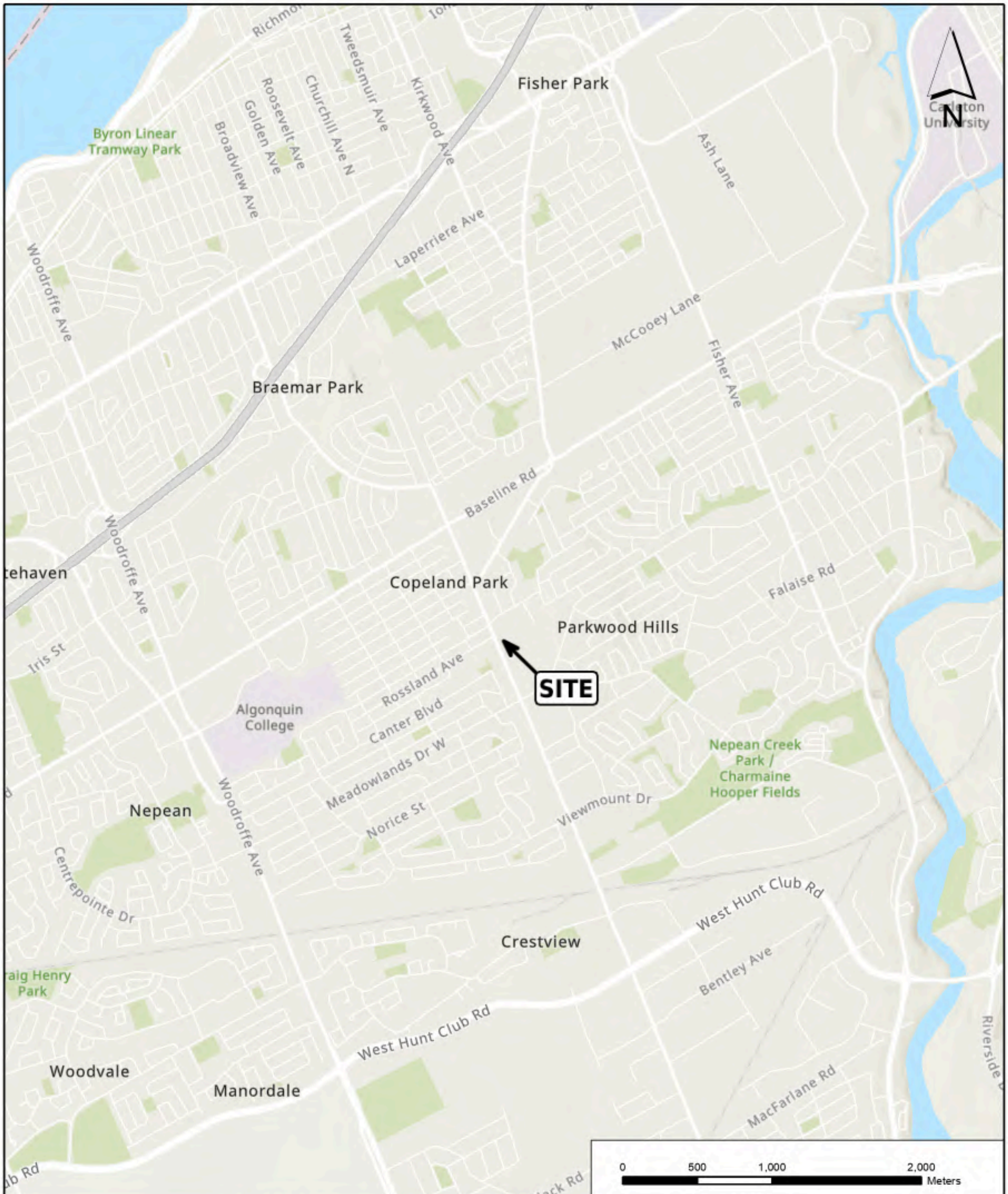
Pinchin makes no other representations whatsoever, including those concerning the legal significance of its findings, or as to other legal matters touched on in this report, including, but not limited to, ownership of any property, or the application of any law to the facts set forth herein. With respect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

0290235.001 Phase II ESA Report 1545 and 1545A Merivale Rd Ottawa ON N Patel

Template: Master Report for Phase II ESA - Stage 2 PSI, EDR, January 13, 2021

APPENDIX I
Figures



PROJECT NAME:	PHASE II ENVIRONMENTAL SITE ASSESSMENT
CLIENT NAME:	NIRAV PATEL
PROJECT LOCATION:	1545 AND 1545A MERIVALE ROAD, OTTAWA, ONTARIO
FIGURE NAME:	KEY MAP
FIGURE NUMBER	1
PROJECT NUMBER:	290235.001
SCALE:	AS SHOWN
DRAWN BY:	PKM
REVIEWED BY:	RL
DATE:	MAY 2021

N

LEGEND

- RFO RETAIL FUEL OUTLET
- CMY - COMMUNITY
- COM - COMMERCIAL
- INS - INSTITUTIONAL
- MTC - MULTI TENANT COMMERCIAL
- RES - RESIDENTIAL
- SITE BOUNDARY
- SITE BUILDING
- BOREHOLE
- MONITORING WELL

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3) This drawing may have been reduced. All scale notations indicated are based on a 11"x17" format drawings.
4)Legend is color dependent. Non-colour copies may alter interpretation.
5) Coordinate system: WGS 1984 Web Mercator Auxiliary Sphere.
6) Source: Pinchin Ltd., .

PINCHIN

PROJECT NAME
PHASE II ENVIRONMENTAL SITE ASSESSMENT

CLIENT NAME
NIRAV PATEL

PROJECT LOCATION
1545 AND 1545A MERIVALE ROAD, OTTAWA, ONTARIO

FIGURE NAME
BOREHOLE AND MONITORING WELL LOCATION PLAN

PROJECT NUMBER: 290235.001	SCALE AS SHOWN
DRAWN BY CM	REVIEWED BY RL
DATE MAY 2021	FIGURE NUMBER 2

APPENDIX II
Borehole Logs

Log of Borehole: MW-1

Project #: 290235.001 **Logged By:** RL

Project: Phase II Environmental Site Assessment

Client: Nirav Patel

Location: 1545 and 1545A Merivale Road, Ottawa, Ontario

Drill Date: April 19, 2021

SUBSURFACE PROFILE / SAMPLE

Description	Measured Depth (m)
Ground Surface	0.00
Asphalt	
Sand and Gravel Brown, moist, no staining, no odour	0.91
Silty Clay Brown, moist, no staining, no odour	2.13
Till with Sand and Gravel Brown, trace silty clay, moist, no staining, no odour	3.81
Dense Till/Refusal	5.18
End of Borehole	

Monitoring Well Details: Riser, Bentonite, Screen, Silica Sand

Recovery (%)	Sample ID	Soil Vapour Concentration (ppm) CGI/PID	Laboratory Analysis
70	SS1	0/0	
70	SS2	0/0	pH
60	SS3	0/0	Grain Size
60	SS4	0/0	pH
50	SS5	0/0	PHCs, VOCs

Soil vapour concentrations measured using a RKI Eagle 2 equipped with a photoionization detector (PID) and a combustible gas indicator (CGI).

Contractor: Strata Drilling Group

Drilling Method: Geo-machine

Well Casing Size: 5.08 cm

Grade Elevation: NA

Top of Casing Elevation: NA

Sheet: 1 of 1

Log of Borehole: MW-2

Project #: 290235.001 ***Logged By:*** RL

Project: Phase II Environmental Site Assessment

Client: Nirav Patel

Location: 1545 and 1545A Merivale Road, Ottawa, Ontario

Drill Date: April 19, 2021

SUBSURFACE PROFILE					SAMPLE			
Depth (ft / m)	Symbol	Description	Measured Depth (m)	Monitoring Well Details	Recovery (%)	Sample ID	Soil Vapour Concentration (ppm) CGI/PID	Laboratory Analysis
0		Ground Surface	0.00					
		Asphalt		Riser; Bentonite				
		Sand and Gravel Brown, moist, no staining, no odour			60	SS1	0/0	
					60	SS2	0/0	
			2.29	Screen; Silica Sand	50	SS3	0/0	
		Till with Sand and Gravel and Silty Clay Brownsilty clay, moist, no staining, no odour			50	SS4	0/0	
			3.81		40	SS5	0/0	PHCs, VOCs
		Dense Till/Refusal	4.57					
		End of Borehole						

Depth scale: ft 0–20; m 0–6.

Soil vapour concentrations measured using a RKI Eagle 2 equipped with a photoionization detector (PID) and a combustible gas indicator (CGI).

Contractor: Strata Drilling Group

Drilling Method: Geo-machine

Well Casing Size: 5.08 cm

Grade Elevation: NA

Top of Casing Elevation: NA

Sheet: 1 of 1

Log of Borehole: MW-3

Project #: 290235.001 **Logged By:** RL

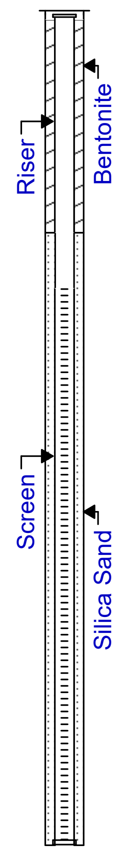
Project: Phase II Environmental Site Assessment

Client: Nirav Patel

Location: 1545 and 1545A Merivale Road, Ottawa, Ontario

Drill Date: April 19, 2021

SUBSURFACE PROFILE				SAMPLE			
Depth	Description	Measured Depth (m)	Monitoring Well Details	Recovery (%)	Sample ID	Soil Vapour Concentration (ppm) CGI/PID	Laboratory Analysis
0 ft / 0 m	Ground Surface	0.00					
	Asphalt						
	Sand and Gravel Brown, moist, no staining, no odour			70	SS1	0/0	
		1.52		70	SS2	0/0	
	Till with Sand and Gravel and Silty Clay Brown, trace silty clay, moist, no staining, no odour			60	SS3	0/0	
				60	SS4	0/0	
		3.81		40	SS5	0/0	PHCs, VOCs
	Dense Till/Refusal	4.57					
	End of Borehole						



Depth scale: ft 0–20; m 0–6

Soil vapour concentrations measured using a RKI Eagle 2 equipped with a photoionization detector (PID) and a combustible gas indicator (CGI).

Contractor: Strata Drilling Group

Drilling Method: Geo-machine

Well Casing Size: 5.08 cm

Grade Elevation: NA

Top of Casing Elevation: NA

Sheet: 1 of 1

Log of Borehole: BH-4

Project #: 290235.001 **Logged By:** RL

Project: Phase II Environmental Site Assessment

Client: Nirav Patel

Location: 1545 and 1545A Merivale Road, Ottawa, Ontario

Drill Date: April 19, 2021

SUBSURFACE PROFILE					SAMPLE				
Depth (ft / m)	Symbol	Description	Measured Depth (m)	Monitoring Well Details	Recovery (%)	Sample ID	Soil Vapour Concentration (ppm) CGI/PID	Laboratory Analysis
0 ft / 0 m		Ground Surface	0.00	No Monitoring Well Installed				
		Concrete						
		Sand and Gravel Brown, moist, no staining, no odour			40	SS1	0/0	
3 ft / 1 m		***Clayey Silt with Rocks*** Brown, moist, no staining, no odour	0.91		30	SS2	0/0	PHCs, VOCs
5 ft		***Refusal***	1.52					
		End of Borehole						

Depth scale: ft 0–10; m 0–3.

Soil vapour concentrations measured using a RKI Eagle 2 equipped with a photoionization detector (PID) and a combustible gas indicator (CGI).

Contractor: Strata Drilling Group

Drilling Method: Geo-machine

Well Casing Size: NA

Grade Elevation: NA

Top of Casing Elevation: NA

Sheet: 1 of 1

APPENDIX III

Summary Tables

TABLE 1
SAMPLES SUBMITTED FOR LABORATORY ANALYSIS
Dr. Nirav Patel
1545 and 1545A Merivale Road, Ottawa, Ontario

Samples			Parameters						
			SOIL SAMPLES				GROUNDWATER SAMPLES		
Borehole / Monitoring Well ID	Sample ID	Sample Depth Range (mbgs)	PHCs (F1-F4)	VOCs	pH	Grain Size Analysis	PHCs (F1-F4)	VOCs	Rationale/Notes
MW-1	MW-1, SS-2	0.8-1.5			●				Assess soil and groundwater quality in relation to on and off-Site concerns/Confirm applicable MECP standards.
	MW-1, SS-3	1.5-2.3				●			
	MW-1, SS-4	2.3-3.1			●				
	MW-1, SS-5	3.1-3.8	●	●					
	MW-1	-					●	●	
MW-2	MW-2, SS-5	3.1-3.8	●	●					
	MW-2	-					●	●	
MW-3	MW-3, SS-5	3.1-3.8	●	●					
	MW-3	-					●	●	
BH-4	BH-4, SS-2	0.8-1.5	●	●					

Notes:

PHCs (F1-F4)	Petroleum Hydrocarbons (Fraction 1 to Fraction 4)
VOCs	Volatile Organic Compounds
PAHs	Polycyclic Aromatic Hydrocarbons
mbgs	Metres Below Ground Surface
MECP	Ontario Ministry of the Environment, Conservation and Parks

TABLE 2
pH AND GRAIN SIZE ANALYSIS FOR SOIL
Dr. Nirav Patel
1545 and 1545A Merivale Road, Ottawa, Ontario

Parameter	*Units*	*MECP Site Condition Standard Selection Criteria*	*Sample Designation*		
			Sample Collection Date (dd/mm/yyyy)		
			Sample Depth (mbgs)		
			MW-1, SS-2	*MW-1, SS-3*	*MW-1, SS-4*
			19/04/2021	*19/04/2021*	*19/04/2021*
			0.8-1.5	*1.5-2.3*	*2.3-3.1*
pH		Surface: 5 < pH < 9 Subsurface: 5 < pH < 11	7.7	NA	7.3
Sieve #200 <0.075 mm	%	50%	NA	55.5	NA
Sieve #200 >0.075 mm	%	50%	NA	44.5	NA
Grain Size Classification				FINE	

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 3
MONITORING WELL CONSTRUCTION DETAILS
Dr. Nirav Patel
1545 and 1545A Merivale Road, Ottawa, Ontario

Well Number	***Surveyed TOC Elevation (mREL)***	***Surveyed Ground Elevation (mREL)***	***Calculated Difference Between Ground and TOC (m)***	***Length of Screen (m)***
MW-1	NM	NM	NM	3.05
MW-2	NM	NM	NM	3.05
MW-3	NM	NM	NM	3.05

Notes:

mREL	Indicates Groundwater Elevation (metres) Relative to Site Benchmark with Assumed Elevation of 100.00 Metres
TOC	Indicates Top of Casing
NM	Not Measured
m	Metres

TABLE 4

GROUNDWATER ELEVATION DATA

Dr. Nirav Patel

1545 and 1545A Merivale Road, Ottawa, Ontario

Well Number	Date (dd/mm/yyyy)	NAPL Level Measurement from TOC (m)	Water Level Measurement from TOC (m)	Water Level Measurement from Ground (mbgs)	Product Thickness (m)
MW-1	26/04/2021	ND	1.90	2.02	ND
MW-2	26/04/2021	ND	2.27	2.40	ND
MW-3	26/04/2021	ND	2.38	2.52	ND

Notes:

mREL	Indicates Groundwater Elevation (metres) Relative To Site Benchmark with Assumed Elevation of 100.00 Metres
NAPL	Non-Aqueous Phase Liquid
ND	Not Detected
TOC	Indicates Top of Casing
m	Metres
mbgs	Metres Below Ground Surface

TABLE 5
PETROLEUM HYDROCARBON AND VOC ANALYSIS FOR SOIL
Dr. Nirav Patel
1545 and 1545A Merivale Road, Ottawa, Ontario

Parameter	*MECP Table 3 Standards**	*Sample Designation / Sample Collection Date (dd/mm/yyyy) / Sample Depth (mbgs)*			
		MW-1, SS-5	*MW-2, SS-5*	*MW-3, SS-5*	*BH-4, SS-2*
		19/04/2021	*19/04/2021*	*19/04/2021*	*19/04/2021*
		3.1-3.8	*3.1-3.8*	*3.1-3.8*	*0.8-1.5*
Petroleum Hydrocarbons F1 (C_6 - C_{10})	65	*<7*	*<7*	*<7*	*<7*
Petroleum Hydrocarbons F2 (>C_{10} - C_{16})	250	*<4*	*<4*	*<4*	*<4*
Petroleum Hydrocarbons F3 (>C_{16} - C_{34})	2500	*<8*	*<8*	*<8*	*<8*
Petroleum Hydrocarbons F4 (>C_{34} - C_{50})	6600	*<6*	*<6*	*<6*	*<6*
Acetone	28	<0.05	<0.05	<0.05	<0.05
Benzene	0.4	<0.02	<0.02	<0.02	<0.02
Bromodichloromethane	18	<0.05	<0.05	<0.05	<0.05
Bromoform	1.7	<0.05	<0.05	<0.05	<0.05
Bromomethane	0.05	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	1.5	<0.05	<0.05	<0.05	<0.05
Chlorobenzene	2.7	<0.05	<0.05	<0.05	<0.05
Chloroform	0.18	<0.05	<0.05	<0.05	<0.05
Dibromochloromethane	13	<0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	8.5	<0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	12	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	0.84	<0.05	<0.05	<0.05	<0.05
Dichlorodifluoromethane	25	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	21	<0.05	<0.05	<0.05	<0.05
1,2-Dichloroethane	0.05	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethylene	0.48	<0.05	<0.05	<0.05	<0.05
cis-1,2-Dichloroethylene	37	<0.05	<0.05	<0.05	<0.05
trans-1,2-Dichloroethylene	9.3	<0.05	<0.05	<0.05	<0.05
1,2-Dichloropropane	0.68	<0.05	<0.05	<0.05	<0.05
1,3-Dichloropropene (Total)	0.21	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	19	<0.05	<0.05	<0.05	<0.05
Ethylene Dibromide	0.05	<0.05	<0.05	<0.05	<0.05
Hexane	88	<0.05	<0.05	<0.05	<0.05
Methyl Ethyl Ketone	88	<0.5	<0.5	<0.5	<0.5
Methyl Isobutyl Ketone	210	<0.5	<0.5	<0.5	<0.5
Methyl t-Butyl Ether (MTBE)	3.2	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	2	<0.05	<0.05	<0.05	<0.05
Styrene	43	<0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	0.11	<0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	0.094	<0.05	<0.05	<0.05	<0.05
Tetrachloroethylene	21	<0.05	<0.05	<0.05	<0.05
Toluene	78	<0.05	<0.05	<0.05	<0.05
1,1,1-Trichloroethane	12	<0.05	<0.05	<0.05	<0.05
1,1,2-Trichloroethane	0.11	<0.05	<0.05	<0.05	<0.05
Trichloroethylene	0.61	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	5.8	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	0.25	<0.02	<0.02	<0.02	<0.02
Xylenes (Total)	30	<0.05	<0.05	<0.05	<0.05

Notes:

MECP Table 3 Standards*	Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, Table 3 Standards, Medium/Fine-Textured Soils, Non-Potable Groundwater Condition, for Industrial/Commercial/Community 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

TABLE 6

PETROLEUM HYDROCARBON AND VOC ANALYSIS FOR GROUNDWATER

Dr. Nirav Patel

1545 and 1545A Merivale Road, Ottawa, Ontario

Parameter	*MECP Table 3 Standards**	*Sample Designation*		
		Sample Collection Date (dd/mm/yyyy)		
		MW-1	*MW-2*	*MW-3*
		26/04/2021	*26/04/2021*	*26/04/2021*
Petroleum Hydrocarbons F1 (C_6 - C_{10})	750	<25	<25	230
Petroleum Hydrocarbons F2 (>C_{10} - C_{16})	150	<100	<100	<100
Petroleum Hydrocarbons F3 (>C_{16} - C_{34})	500	<100	<100	<100
Petroleum Hydrocarbons F4 (>C_{34} - C_{50})	500	<100	<100	<100
Acetone	130000	<5	<5	<5
Benzene	430	<0.5	<0.5	3.6
Bromodichloromethane	85000	<0.5	<0.5	7
Bromoform	770	<0.5	<0.5	<0.5
Bromomethane	56	<0.5	<0.5	<0.5
Carbon Tetrachloride	8.4	<0.2	<0.2	<0.2
Chlorobenzene	630	<0.5	<0.5	<0.5
Chloroform	22	3.1	<0.5	<0.5
Dibromochloromethane	82000	<0.5	<0.5	<0.5
1,2-Dichlorobenzene	9600	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	9600	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	67	<0.5	<0.5	<0.5
Dichlorodifluoromethane	4400	<1	<1	<1
1,1-Dichloroethane	3100	<0.5	<0.5	<0.5
1,2-Dichloroethane	12	<0.5	<0.5	<0.5
1,1-Dichloroethylene	17	<0.5	<0.5	<0.5
cis-1,2-Dichloroethylene	17	<0.5	<0.5	<0.5
trans-1,2-Dichloroethylene	17	<0.5	<0.5	<0.5
1,2-Dichloropropane	140	<0.5	<0.5	<0.5
1,3-Dichloropropene (Total)	45	<0.5	<0.5	<0.5
Ethylbenzene	2300	<0.5	<0.5	8
Ethylene Dibromide	0.83	<0.2	<0.2	<0.2
Hexane	520	<1	<1	<1
Methyl Ethyl Ketone	1500000	<5	<5	<5
Methyl Isobutyl Ketone	580000	<5	<5	<5
Methyl t-Butyl Ether (MTBE)	1400	<5	<5	<5
Methylene Chloride	5500	<2	<2	<2
Styrene	9100	<0.5	<0.5	<0.5
1,1,1,2-Tetrachloroethane	28	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	15	<0.5	<0.5	<0.5
Tetrachloroethylene	17	<0.5	<0.5	<0.5
Toluene	18000	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	6700	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	30	<0.5	<0.5	<0.5
Trichloroethylene	17	<0.5	<0.5	<0.5
Trichlorofluoromethane	2500	<1	<1	<1
Vinyl Chloride	1.7	<0.5	<0.5	<0.5
Xylenes (Total)	4200	<0.5	<0.5	0.9

Notes:

MECP Table 3 Standards* — Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, Table 3 Standards, Medium/Fine-Textured Soils, Non-Potable Groundwater Condition, for All Types of Property Use.

BOLD	Exceeds Site Condition Standard
BOLD	Reportable Detection Limit Exceeds Site Condition Standard
Units	All Units in µg/L

APPENDIX IV

Laboratory Certificates of Analysis

300 - 2319 St. Laurent Blvd
Ottawa, ON, K1G 4J8
1-800-749-1947
www.paracellabs.com

Certificate of Analysis

Pinchin Ltd. (Ottawa)

1 Hines Road, Suite 200
Kanata, ON K2K 3C7
Attn: Ryan LaRonde

Client PO: Merivale
Project: 290235.001
Custody:

Report Date: 26-Apr-2021
Order Date: 21-Apr-2021

Order #: 2117423

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2117423-01	MW-1,SS-2
2117423-02	MW-1,SS-3
2117423-03	MW-1,SS-4
2117423-04	MW-1,SS-5
2117423-05	MW-2,SS-5
2117423-06	MW-3,SS-5
2117423-07	MW-4,SS-2

Approved By: Mark Foto

Mark Foto, M.Sc.
Lab Supervisor

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
pH, soil	EPA 150.1 - pH probe @ 25 °C, CaCl buffered ext.	26-Apr-21	26-Apr-21
PHC F1	CWS Tier 1 - P&T GC-FID	23-Apr-21	24-Apr-21
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	22-Apr-21	24-Apr-21
REG 153: VOCs by P&T GC/MS	EPA 8260 - P&T GC-MS	23-Apr-21	24-Apr-21
Solids, %	Gravimetric, calculation	22-Apr-21	22-Apr-21
Texture - Coarse Med/Fine	Based on ASTM D2487	20-Apr-21	23-Apr-21

Client ID:		MW-1,SS-2	MW-1,SS-3	MW-1,SS-4	MW-1,SS-5
Sample Date:		19-Apr-21 09:00	19-Apr-21 09:00	19-Apr-21 09:00	19-Apr-21 09:00
Sample ID:		2117423-01	2117423-02	2117423-03	2117423-04
	MDL/Units	Soil	Soil	Soil	Soil
Physical Characteristics					
% Solids	0.1 % by Wt.	-	-	-	70.5
>75 um	0.1 %	-	44.5	-	-
<75 um	0.1 %	-	55.5	-	-
Texture	0.1 %	-	Med/Fine	-	-
General Inorganics					
pH	0.05 pH Units	7.70	-	7.33	-
Volatiles					
Acetone	0.50 ug/g dry	-	-	-	<0.50
Benzene	0.02 ug/g dry	-	-	-	<0.02
Bromodichloromethane	0.05 ug/g dry	-	-	-	<0.05
Bromoform	0.05 ug/g dry	-	-	-	<0.05
Bromomethane	0.05 ug/g dry	-	-	-	<0.05
Carbon Tetrachloride	0.05 ug/g dry	-	-	-	<0.05
Chlorobenzene	0.05 ug/g dry	-	-	-	<0.05
Chloroform	0.05 ug/g dry	-	-	-	<0.05
Dibromochloromethane	0.05 ug/g dry	-	-	-	<0.05
Dichlorodifluoromethane	0.05 ug/g dry	-	-	-	<0.05
1,2-Dichlorobenzene	0.05 ug/g dry	-	-	-	<0.05
1,3-Dichlorobenzene	0.05 ug/g dry	-	-	-	<0.05
1,4-Dichlorobenzene	0.05 ug/g dry	-	-	-	<0.05
1,1-Dichloroethane	0.05 ug/g dry	-	-	-	<0.05
1,2-Dichloroethane	0.05 ug/g dry	-	-	-	<0.05
1,1-Dichloroethylene	0.05 ug/g dry	-	-	-	<0.05
cis-1,2-Dichloroethylene	0.05 ug/g dry	-	-	-	<0.05
trans-1,2-Dichloroethylene	0.05 ug/g dry	-	-	-	<0.05
1,2-Dichloropropane	0.05 ug/g dry	-	-	-	<0.05
cis-1,3-Dichloropropylene	0.05 ug/g dry	-	-	-	<0.05
trans-1,3-Dichloropropylene	0.05 ug/g dry	-	-	-	<0.05
1,3-Dichloropropene, total	0.05 ug/g dry	-	-	-	<0.05
Ethylbenzene	0.05 ug/g dry	-	-	-	<0.05
Ethylene dibromide (dibromoethane, 1,2-)	0.05 ug/g dry	-	-	-	<0.05
Hexane	0.05 ug/g dry	-	-	-	<0.05
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g dry	-	-	-	<0.50
Methyl Isobutyl Ketone	0.50 ug/g dry	-	-	-	<0.50
Methyl tert-butyl ether	0.05 ug/g dry	-	-	-	<0.05

Certificate of Analysis

Client: Pinchin Ltd. (Ottawa)

Client PO: Merivale

Report Date: 26-Apr-2021

Order Date: 21-Apr-2021

Project Description: 290235.001

	Client ID:	MW-1,SS-2	MW-1,SS-3	MW-1,SS-4	MW-1,SS-5
	Sample Date:	19-Apr-21 09:00	19-Apr-21 09:00	19-Apr-21 09:00	19-Apr-21 09:00
	Sample ID:	2117423-01	2117423-02	2117423-03	2117423-04
	MDL/Units	Soil	Soil	Soil	Soil
Methylene Chloride	0.05 ug/g dry	-	-	-	<0.05
Styrene	0.05 ug/g dry	-	-	-	<0.05
1,1,1,2-Tetrachloroethane	0.05 ug/g dry	-	-	-	<0.05
1,1,2,2-Tetrachloroethane	0.05 ug/g dry	-	-	-	<0.05
Tetrachloroethylene	0.05 ug/g dry	-	-	-	<0.05
Toluene	0.05 ug/g dry	-	-	-	<0.05
1,1,1-Trichloroethane	0.05 ug/g dry	-	-	-	<0.05
1,1,2-Trichloroethane	0.05 ug/g dry	-	-	-	<0.05
Trichloroethylene	0.05 ug/g dry	-	-	-	<0.05
Trichlorofluoromethane	0.05 ug/g dry	-	-	-	<0.05
Vinyl chloride	0.02 ug/g dry	-	-	-	<0.02
m,p-Xylenes	0.05 ug/g dry	-	-	-	<0.05
o-Xylene	0.05 ug/g dry	-	-	-	<0.05
Xylenes, total	0.05 ug/g dry	-	-	-	<0.05
4-Bromofluorobenzene	Surrogate	-	-	-	107%
Dibromofluoromethane	Surrogate	-	-	-	102%
Toluene-d8	Surrogate	-	-	-	102%
Hydrocarbons					
F1 PHCs (C6-C10)	7 ug/g dry	-	-	-	<7
F2 PHCs (C10-C16)	4 ug/g dry	-	-	-	<4
F3 PHCs (C16-C34)	8 ug/g dry	-	-	-	<8
F4 PHCs (C34-C50)	6 ug/g dry	-	-	-	<6

Certificate of Analysis

Client: Pinchin Ltd. (Ottawa)

Client PO: Merivale

Report Date: 26-Apr-2021

Order Date: 21-Apr-2021

Project Description: 290235.001

	Client ID:	MW-2,SS-5	MW-3,SS-5	MW-4,SS-2	-
	Sample Date:	19-Apr-21 09:00	19-Apr-21 09:00	19-Apr-21 09:00	-
	Sample ID:	2117423-05	2117423-06	2117423-07	-
	MDL/Units	Soil	Soil	Soil	-
Physical Characteristics					
% Solids	0.1 % by Wt.	91.6	90.0	90.1	-
Volatiles					
Acetone	0.50 ug/g dry	<0.50	<0.50	<0.50	-
Benzene	0.02 ug/g dry	<0.02	<0.02	<0.02	-
Bromodichloromethane	0.05 ug/g dry	<0.05	<0.05	<0.05	-
Bromoform	0.05 ug/g dry	<0.05	<0.05	<0.05	-
Bromomethane	0.05 ug/g dry	<0.05	<0.05	<0.05	-
Carbon Tetrachloride	0.05 ug/g dry	<0.05	<0.05	<0.05	-
Chlorobenzene	0.05 ug/g dry	<0.05	<0.05	<0.05	-
Chloroform	0.05 ug/g dry	<0.05	<0.05	<0.05	-
Dibromochloromethane	0.05 ug/g dry	<0.05	<0.05	<0.05	-
Dichlorodifluoromethane	0.05 ug/g dry	<0.05	<0.05	<0.05	-
1,2-Dichlorobenzene	0.05 ug/g dry	<0.05	<0.05	<0.05	-
1,3-Dichlorobenzene	0.05 ug/g dry	<0.05	<0.05	<0.05	-
1,4-Dichlorobenzene	0.05 ug/g dry	<0.05	<0.05	<0.05	-
1,1-Dichloroethane	0.05 ug/g dry	<0.05	<0.05	<0.05	-
1,2-Dichloroethane	0.05 ug/g dry	<0.05	<0.05	<0.05	-
1,1-Dichloroethylene	0.05 ug/g dry	<0.05	<0.05	<0.05	-
cis-1,2-Dichloroethylene	0.05 ug/g dry	<0.05	<0.05	<0.05	-
trans-1,2-Dichloroethylene	0.05 ug/g dry	<0.05	<0.05	<0.05	-
1,2-Dichloropropane	0.05 ug/g dry	<0.05	<0.05	<0.05	-
cis-1,3-Dichloropropylene	0.05 ug/g dry	<0.05	<0.05	<0.05	-
trans-1,3-Dichloropropylene	0.05 ug/g dry	<0.05	<0.05	<0.05	-
1,3-Dichloropropene, total	0.05 ug/g dry	<0.05	<0.05	<0.05	-
Ethylbenzene	0.05 ug/g dry	<0.05	<0.05	<0.05	-
Ethylene dibromide (dibromoethane, 1	0.05 ug/g dry	<0.05	<0.05	<0.05	-
Hexane	0.05 ug/g dry	<0.05	<0.05	<0.05	-
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g dry	<0.50	<0.50	<0.50	-
Methyl Isobutyl Ketone	0.50 ug/g dry	<0.50	<0.50	<0.50	-
Methyl tert-butyl ether	0.05 ug/g dry	<0.05	<0.05	<0.05	-
Methylene Chloride	0.05 ug/g dry	<0.05	<0.05	<0.05	-
Styrene	0.05 ug/g dry	<0.05	<0.05	<0.05	-
1,1,1,2-Tetrachloroethane	0.05 ug/g dry	<0.05	<0.05	<0.05	-
1,1,2,2-Tetrachloroethane	0.05 ug/g dry	<0.05	<0.05	<0.05	-

Certificate of Analysis

Client: **Pinchin Ltd. (Ottawa)**

Client PO: **Merivale**

Report Date: 26-Apr-2021

Order Date: 21-Apr-2021

Project Description: 290235.001

Client ID: **Sample Date:** **Sample ID:**		MW-2,SS-5	MW-3,SS-5	MW-4,SS-2	-
		19-Apr-21 09:00	19-Apr-21 09:00	19-Apr-21 09:00	-
		2117423-05	2117423-06	2117423-07	-
	MDL/Units	Soil	Soil	Soil	-
Tetrachloroethylene	0.05 ug/g dry	<0.05	<0.05	<0.05	-
Toluene	0.05 ug/g dry	<0.05	<0.05	<0.05	-
1,1,1-Trichloroethane	0.05 ug/g dry	<0.05	<0.05	<0.05	-
1,1,2-Trichloroethane	0.05 ug/g dry	<0.05	<0.05	<0.05	-
Trichloroethylene	0.05 ug/g dry	<0.05	<0.05	<0.05	-
Trichlorofluoromethane	0.05 ug/g dry	<0.05	<0.05	<0.05	-
Vinyl chloride	0.02 ug/g dry	<0.02	<0.02	<0.02	-
m,p-Xylenes	0.05 ug/g dry	<0.05	<0.05	<0.05	-
o-Xylene	0.05 ug/g dry	<0.05	<0.05	<0.05	-
Xylenes, total	0.05 ug/g dry	<0.05	<0.05	<0.05	-
4-Bromofluorobenzene	Surrogate	106%	108%	95.7%	-
Dibromofluoromethane	Surrogate	90.9%	106%	102%	-
Toluene-d8	Surrogate	108%	103%	102%	-
Hydrocarbons					
F1 PHCs (C6-C10)	7 ug/g dry	<7	<7	<7	-
F2 PHCs (C10-C16)	4 ug/g dry	<4	<4	<4	-
F3 PHCs (C16-C34)	8 ug/g dry	<8	<8	<8	-
F4 PHCs (C34-C50)	6 ug/g dry	<6	<6	<6	-

Certificate of Analysis
Client: Pinchin Ltd. (Ottawa)
Client PO: Merivale

Report Date: 26-Apr-2021
Order Date: 21-Apr-2021
Project Description: 290235.001

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g						
F2 PHCs (C10-C16)	ND	4	ug/g						
F3 PHCs (C16-C34)	ND	8	ug/g						
F4 PHCs (C34-C50)	ND	6	ug/g						
Volatiles									
Acetone	ND	0.50	ug/g						
Benzene	ND	0.02	ug/g						
Bromodichloromethane	ND	0.05	ug/g						
Bromoform	ND	0.05	ug/g						
Bromomethane	ND	0.05	ug/g						
Carbon Tetrachloride	ND	0.05	ug/g						
Chlorobenzene	ND	0.05	ug/g						
Chloroform	ND	0.05	ug/g						
Dibromochloromethane	ND	0.05	ug/g						
Dichlorodifluoromethane	ND	0.05	ug/g						
1,2-Dichlorobenzene	ND	0.05	ug/g						
1,3-Dichlorobenzene	ND	0.05	ug/g						
1,4-Dichlorobenzene	ND	0.05	ug/g						
1,1-Dichloroethane	ND	0.05	ug/g						
1,2-Dichloroethane	ND	0.05	ug/g						
1,1-Dichloroethylene	ND	0.05	ug/g						
cis-1,2-Dichloroethylene	ND	0.05	ug/g						
trans-1,2-Dichloroethylene	ND	0.05	ug/g						
1,2-Dichloropropane	ND	0.05	ug/g						
cis-1,3-Dichloropropylene	ND	0.05	ug/g						
trans-1,3-Dichloropropylene	ND	0.05	ug/g						
1,3-Dichloropropene, total	ND	0.05	ug/g						
Ethylbenzene	ND	0.05	ug/g						
Ethylene dibromide (dibromoethane, 1,2-	ND	0.05	ug/g						
Hexane	ND	0.05	ug/g						
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g						
Methyl Isobutyl Ketone	ND	0.50	ug/g						
Methyl tert-butyl ether	ND	0.05	ug/g						
Methylene Chloride	ND	0.05	ug/g						
Styrene	ND	0.05	ug/g						
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g						
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g						
Tetrachloroethylene	ND	0.05	ug/g						
Toluene	ND	0.05	ug/g						
1,1,1-Trichloroethane	ND	0.05	ug/g						
1,1,2-Trichloroethane	ND	0.05	ug/g						
Trichloroethylene	ND	0.05	ug/g						
Trichlorofluoromethane	ND	0.05	ug/g						
Vinyl chloride	ND	0.02	ug/g						
m,p-Xylenes	ND	0.05	ug/g						
o-Xylene	ND	0.05	ug/g						
Xylenes, total	ND	0.05	ug/g						
Surrogate: 4-Bromofluorobenzene	*3.52*		*ug/g*		*110*	*50-140*			
Surrogate: Dibromofluoromethane	*3.05*		*ug/g*		*95.4*	*50-140*			
Surrogate: Toluene-d8	*4.32*		*ug/g*		*135*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
pH	7.43	0.05	pH Units	7.30			1.8	2.3	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g dry	ND			NC	40	
F2 PHCs (C10-C16)	ND	4	ug/g dry	ND			NC	30	
F3 PHCs (C16-C34)	ND	8	ug/g dry	ND			NC	30	
F4 PHCs (C34-C50)	ND	6	ug/g dry	ND			NC	30	
Physical Characteristics									
% Solids	87.9	0.1	% by Wt.	85.5			2.8	25	
Volatiles									
Acetone	ND	0.50	ug/g dry	ND			NC	50	
Benzene	ND	0.02	ug/g dry	ND			NC	50	
Bromodichloromethane	ND	0.05	ug/g dry	ND			NC	50	
Bromoform	ND	0.05	ug/g dry	ND			NC	50	
Bromomethane	ND	0.05	ug/g dry	ND			NC	50	
Carbon Tetrachloride	ND	0.05	ug/g dry	ND			NC	50	
Chlorobenzene	ND	0.05	ug/g dry	ND			NC	50	
Chloroform	ND	0.05	ug/g dry	ND			NC	50	
Dibromochloromethane	ND	0.05	ug/g dry	ND			NC	50	
Dichlorodifluoromethane	ND	0.05	ug/g dry	ND			NC	50	
1,2-Dichlorobenzene	ND	0.05	ug/g dry	ND			NC	50	
1,3-Dichlorobenzene	ND	0.05	ug/g dry	ND			NC	50	
1,4-Dichlorobenzene	ND	0.05	ug/g dry	ND			NC	50	
1,1-Dichloroethane	ND	0.05	ug/g dry	ND			NC	50	
1,2-Dichloroethane	ND	0.05	ug/g dry	ND			NC	50	
1,1-Dichloroethylene	ND	0.05	ug/g dry	ND			NC	50	
cis-1,2-Dichloroethylene	ND	0.05	ug/g dry	ND			NC	50	
trans-1,2-Dichloroethylene	ND	0.05	ug/g dry	ND			NC	50	
1,2-Dichloropropane	ND	0.05	ug/g dry	ND			NC	50	
cis-1,3-Dichloropropylene	ND	0.05	ug/g dry	ND			NC	50	
trans-1,3-Dichloropropylene	ND	0.05	ug/g dry	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g dry	ND			NC	50	
Ethylene dibromide (dibromoethane, 1,2-	ND	0.05	ug/g dry	ND			NC	50	
Hexane	ND	0.05	ug/g dry	ND			NC	50	
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g dry	ND			NC	50	
Methyl Isobutyl Ketone	ND	0.50	ug/g dry	ND			NC	50	
Methyl tert-butyl ether	ND	0.05	ug/g dry	ND			NC	50	
Methylene Chloride	ND	0.05	ug/g dry	ND			NC	50	
Styrene	ND	0.05	ug/g dry	ND			NC	50	
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g dry	ND			NC	50	
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g dry	ND			NC	50	
Tetrachloroethylene	ND	0.05	ug/g dry	ND			NC	50	
Toluene	ND	0.05	ug/g dry	ND			NC	50	
1,1,1-Trichloroethane	ND	0.05	ug/g dry	ND			NC	50	
1,1,2-Trichloroethane	ND	0.05	ug/g dry	ND			NC	50	
Trichloroethylene	ND	0.05	ug/g dry	ND			NC	50	
Trichlorofluoromethane	ND	0.05	ug/g dry	ND			NC	50	
Vinyl chloride	ND	0.02	ug/g dry	ND			NC	50	
m,p-Xylenes	ND	0.05	ug/g dry	ND			NC	50	
o-Xylene	ND	0.05	ug/g dry	ND			NC	50	
Surrogate: 4-Bromofluorobenzene	*3.62*		*ug/g dry*		*108*	*50-140*			
Surrogate: Dibromofluoromethane	*3.35*		*ug/g dry*		*99.6*	*50-140*			
Surrogate: Toluene-d8	*3.52*		*ug/g dry*		*105*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	194	7	ug/g	ND	97.2	80-120			
F2 PHCs (C10-C16)	93	4	ug/g	ND	100	60-140			
F3 PHCs (C16-C34)	250	8	ug/g	ND	110	60-140			
F4 PHCs (C34-C50)	173	6	ug/g	ND	120	60-140			
Volatiles									
Acetone	11.1	0.50	ug/g	ND	111	50-140			
Benzene	3.59	0.02	ug/g	ND	89.8	60-130			
Bromodichloromethane	3.73	0.05	ug/g	ND	93.3	60-130			
Bromoform	3.87	0.05	ug/g	ND	96.8	60-130			
Bromomethane	3.95	0.05	ug/g	ND	98.8	50-140			
Carbon Tetrachloride	3.59	0.05	ug/g	ND	89.7	60-130			
Chlorobenzene	3.58	0.05	ug/g	ND	89.5	60-130			
Chloroform	3.74	0.05	ug/g	ND	93.5	60-130			
Dibromochloromethane	3.78	0.05	ug/g	ND	94.5	60-130			
Dichlorodifluoromethane	4.47	0.05	ug/g	ND	112	50-140			
1,2-Dichlorobenzene	3.55	0.05	ug/g	ND	88.7	60-130			
1,3-Dichlorobenzene	3.47	0.05	ug/g	ND	86.9	60-130			
1,4-Dichlorobenzene	3.70	0.05	ug/g	ND	92.5	60-130			
1,1-Dichloroethane	3.59	0.05	ug/g	ND	89.7	60-130			
1,2-Dichloroethane	3.72	0.05	ug/g	ND	92.9	60-130			
1,1-Dichloroethylene	3.47	0.05	ug/g	ND	86.7	60-130			
cis-1,2-Dichloroethylene	3.36	0.05	ug/g	ND	84.0	60-130			
trans-1,2-Dichloroethylene	3.59	0.05	ug/g	ND	89.7	60-130			
1,2-Dichloropropane	3.67	0.05	ug/g	ND	91.7	60-130			
cis-1,3-Dichloropropylene	3.50	0.05	ug/g	ND	87.6	60-130			
trans-1,3-Dichloropropylene	3.48	0.05	ug/g	ND	86.9	60-130			
Ethylbenzene	3.58	0.05	ug/g	ND	89.5	60-130			
Ethylene dibromide (dibromoethane, 1,2-	3.75	0.05	ug/g	ND	93.8	60-130			
Hexane	3.92	0.05	ug/g	ND	97.9	60-130			
Methyl Ethyl Ketone (2-Butanone)	9.13	0.50	ug/g	ND	91.3	50-140			
Methyl Isobutyl Ketone	9.26	0.50	ug/g	ND	92.6	50-140			
Methyl tert-butyl ether	9.33	0.05	ug/g	ND	93.3	50-140			
Methylene Chloride	3.46	0.05	ug/g	ND	86.5	60-130			
Styrene	3.29	0.05	ug/g	ND	82.3	60-130			
1,1,1,2-Tetrachloroethane	3.93	0.05	ug/g	ND	98.2	60-130			
1,1,2,2-Tetrachloroethane	3.35	0.05	ug/g	ND	83.8	60-130			
Tetrachloroethylene	3.78	0.05	ug/g	ND	94.6	60-130			
Toluene	3.88	0.05	ug/g	ND	96.9	60-130			
1,1,1-Trichloroethane	3.64	0.05	ug/g	ND	90.9	60-130			
1,1,2-Trichloroethane	3.66	0.05	ug/g	ND	91.4	60-130			
Trichloroethylene	3.63	0.05	ug/g	ND	90.8	60-130			
Trichlorofluoromethane	3.74	0.05	ug/g	ND	93.6	50-140			
Vinyl chloride	3.73	0.02	ug/g	ND	93.2	50-140			
m,p-Xylenes	7.20	0.05	ug/g	ND	90.0	60-130			
o-Xylene	3.77	0.05	ug/g	ND	94.3	60-130			
Surrogate: 4-Bromofluorobenzene	*3.04*		*ug/g*		*95.0*	*50-140*			
Surrogate: Dibromofluoromethane	*3.19*		*ug/g*		*99.8*	*50-140*			
Surrogate: Toluene-d8	*3.13*		*ug/g*		*97.8*	*50-140*			

Qualifier Notes:

Sample Qualifiers :

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable
ND: Not Detected
MDL: Method Detection Limit
Source Result: Data used as source for matrix and duplicate samples
%REC: Percent recovery.
RPD: Relative percent difference.
NC: Not Calculated

Soil results are reported on a dry weight basis when the units are denoted with 'dry'.
Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.
- F1 range corrected for BTEX.
- F2 to F3 ranges corrected for appropriate PAHs where available.
- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.
- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.
- When reported, data for F4G has been processed using a silica gel cleanup.

PARACEL LABORATORIES LTD.

Paracel ID: 2117423

Paracel Order Number (Lab Use Only): 2117423

Chain Of Custody (Lab Use Only)

Page 1 of 1

Client Name: Pinchin Ltd.	Project Ref: 290235.001 Merivale
Contact Name: Ryan LaRonde/Matt Ryan/ Mike Kosiw/ Scott Mather	Quote #:
Address: 1 Hines Road, Kanata, ON	PO #:
	E-mail: rlaronde@pinchin.com/mryan@pinchin.com/mkosiw@pinchin.com/smather@pinchin.com
Telephone: 613-291-5656	

Turnaround Time: 1 day / 2 day / 3 day (circled) / Regular

Date Required:

Regulation 153/04: ☐ Table 1 ☐ Res/Park ☐ Med/Fine ☐ Table 2 ☒ Ind/Comm ☒ Coarse ☒ Table 3 ☐ Agri/Other ☐ Table___

For RSC: ☐ Yes ☒ No

Other Regulation: ☐ REG 558 ☐ PWQO ☐ CCME ☐ MISA ☐ SU - Sani ☐ SU - Storm Mun: ☐ Other:

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken Date	Sample Taken Time	PHCs F1-F4+BTEX	VOCs	PAHs	Metals by ICP	Hg	CrVI	B (HWS)	pH	Texture size +- 75mc
1	MW-1, SS-2	S		1	19-Apr		x	x							
2	MW-1, SS-3	S		1	19-Apr		x	x							
3	MW-1, SS-4	S		1	19-Apr		x	x							
4	MW-1, SS-5	S		2	19-Apr		x	x							
5	MW-2, SS-5	S		2	19-Apr		x	x							
6	MW-3, SS-5	S		2	19-Apr		x	x							
7	BH-4, SS-2	S		2	19-Apr		x	x							
8															
9															
10															

Comments:

Method of Delivery: Drop Box

Relinquished By (Sign):	Received By Driver/Depot:	Received at Lab: Sineeporn Dokmai	Verified By:
Relinquished By (Print): Ryan LaRonde	Date/Time: Apr 21/21 1605	Date/Time: Apr 21, 2021 04.52	Date/Time: April 21, 2021 17:24
Date/Time: April 21	Temperature: 10.1 °C	Temperature: 18.6 °C	pH Verified: ☐ By:

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Certificate of Analysis

Pinchin Ltd. (Ottawa)

1 Hines Road, Suite 200
Kanata, ON K2K 3C7
Attn: Ryan LaRonde

Client PO: Merivale Rd.
Project: 290235.001
Custody:

Report Date: 29-Apr-2021
Order Date: 26-Apr-2021

Order #: 2118069

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2118069-01	MW-1
2118069-02	MW-2
2118069-03	MW-3

Approved By: Mark Foto

Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis

Client: Pinchin Ltd. (Ottawa)

Client PO: Merivale Rd.

Report Date: 29-Apr-2021

Order Date: 26-Apr-2021

Project Description: 290235.001

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
PHC F1	CWS Tier 1 - P&T GC-FID	27-Apr-21	27-Apr-21
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	27-Apr-21	28-Apr-21
REG 153: VOCs by P&T GC/MS	EPA 624 - P&T GC-MS	27-Apr-21	27-Apr-21

Certificate of Analysis

Client: Pinchin Ltd. (Ottawa)

Client PO: Merivale Rd.

Report Date: 29-Apr-2021

Order Date: 26-Apr-2021

Project Description: 290235.001

	Client ID:	MW-1	MW-2	MW-3	-
	Sample Date:	26-Apr-21 09:00	26-Apr-21 09:00	26-Apr-21 09:00	-
	Sample ID:	2118069-01	2118069-02	2118069-03	-
	MDL/Units	Water	Water	Water	-
Volatiles					
Acetone	5.0 ug/L	<5.0	<5.0	<5.0	-
Benzene	0.5 ug/L	<0.5	<0.5	3.6	-
Bromodichloromethane	0.5 ug/L	<0.5	<0.5	7.0	-
Bromoform	0.5 ug/L	<0.5	<0.5	<0.5	-
Bromomethane	0.5 ug/L	<0.5	<0.5	<0.5	-
Carbon Tetrachloride	0.2 ug/L	<0.2	<0.2	<0.2	-
Chlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	-
Chloroform	0.5 ug/L	3.1	<0.5	<0.5	-
Dibromochloromethane	0.5 ug/L	<0.5	<0.5	<0.5	-
Dichlorodifluoromethane	1.0 ug/L	<1.0	<1.0	<1.0	-
1,2-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	-
1,3-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	-
1,4-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	-
1,1-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	-
1,2-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	-
1,1-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	-
cis-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	-
trans-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	-
1,2-Dichloropropane	0.5 ug/L	<0.5	<0.5	<0.5	-
cis-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	-
trans-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	-
1,3-Dichloropropene, total	0.5 ug/L	<0.5	<0.5	<0.5	-
Ethylbenzene	0.5 ug/L	<0.5	<0.5	8.0	-
Ethylene dibromide (dibromoethane, 1,2-)	0.2 ug/L	<0.2	<0.2	<0.2	-
Hexane	1.0 ug/L	<1.0	<1.0	<1.0	-
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	<5.0	<5.0	<5.0	-
Methyl Isobutyl Ketone	5.0 ug/L	<5.0	<5.0	<5.0	-
Methyl tert-butyl ether	2.0 ug/L	<2.0	<2.0	<2.0	-
Methylene Chloride	5.0 ug/L	<5.0	<5.0	<5.0	-
Styrene	0.5 ug/L	<0.5	<0.5	<0.5	-
1,1,1,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5	-
1,1,2,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5	-
Tetrachloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	-
Toluene	0.5 ug/L	<0.5	<0.5	<0.5	-
1,1,1-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	-

Certificate of Analysis

Client: Pinchin Ltd. (Ottawa)

Client PO: Merivale Rd.

Report Date: 29-Apr-2021

Order Date: 26-Apr-2021

Project Description: 290235.001

Client ID:		MW-1	MW-2	MW-3	-
Sample Date:		26-Apr-21 09:00	26-Apr-21 09:00	26-Apr-21 09:00	-
Sample ID:		2118069-01	2118069-02	2118069-03	-
	MDL/Units	Water	Water	Water	-
1,1,2-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	-
Trichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	-
Trichlorofluoromethane	1.0 ug/L	<1.0	<1.0	<1.0	-
Vinyl chloride	0.5 ug/L	<0.5	<0.5	<0.5	-
m,p-Xylenes	0.5 ug/L	<0.5	<0.5	0.9	-
o-Xylene	0.5 ug/L	<0.5	<0.5	<0.5	-
Xylenes, total	0.5 ug/L	<0.5	<0.5	0.9	-
4-Bromofluorobenzene	Surrogate	89.4%	86.7%	87.8%	-
Dibromofluoromethane	Surrogate	80.6%	79.8%	83.4%	-
Toluene-d8	Surrogate	106%	104%	102%	-
Hydrocarbons					
F1 PHCs (C6-C10)	25 ug/L	<25	<25	230	-
F2 PHCs (C10-C16)	100 ug/L	<100	<100	<100	-
F3 PHCs (C16-C34)	100 ug/L	<100	<100	<100	-
F4 PHCs (C34-C50)	100 ug/L	<100	<100	<100	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L						
F2 PHCs (C10-C16)	ND	100	ug/L						
F3 PHCs (C16-C34)	ND	100	ug/L						
F4 PHCs (C34-C50)	ND	100	ug/L						
Volatiles									
Acetone	ND	5.0	ug/L						
Benzene	ND	0.5	ug/L						
Bromodichloromethane	ND	0.5	ug/L						
Bromoform	ND	0.5	ug/L						
Bromomethane	ND	0.5	ug/L						
Carbon Tetrachloride	ND	0.2	ug/L						
Chlorobenzene	ND	0.5	ug/L						
Chloroform	ND	0.5	ug/L						
Dibromochloromethane	ND	0.5	ug/L						
Dichlorodifluoromethane	ND	1.0	ug/L						
1,2-Dichlorobenzene	ND	0.5	ug/L						
1,3-Dichlorobenzene	ND	0.5	ug/L						
1,4-Dichlorobenzene	ND	0.5	ug/L						
1,1-Dichloroethane	ND	0.5	ug/L						
1,2-Dichloroethane	ND	0.5	ug/L						
1,1-Dichloroethylene	ND	0.5	ug/L						
cis-1,2-Dichloroethylene	ND	0.5	ug/L						
trans-1,2-Dichloroethylene	ND	0.5	ug/L						
1,2-Dichloropropane	ND	0.5	ug/L						
cis-1,3-Dichloropropylene	ND	0.5	ug/L						
trans-1,3-Dichloropropylene	ND	0.5	ug/L						
1,3-Dichloropropene, total	ND	0.5	ug/L						
Ethylbenzene	ND	0.5	ug/L						
Ethylene dibromide (dibromoethane, 1,2-	ND	0.2	ug/L						
Hexane	ND	1.0	ug/L						
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L						
Methyl Isobutyl Ketone	ND	5.0	ug/L						
Methyl tert-butyl ether	ND	2.0	ug/L						
Methylene Chloride	ND	5.0	ug/L						
Styrene	ND	0.5	ug/L						
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L						
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L						
Tetrachloroethylene	ND	0.5	ug/L						
Toluene	ND	0.5	ug/L						
1,1,1-Trichloroethane	ND	0.5	ug/L						
1,1,2-Trichloroethane	ND	0.5	ug/L						
Trichloroethylene	ND	0.5	ug/L						
Trichlorofluoromethane	ND	1.0	ug/L						
Vinyl chloride	ND	0.5	ug/L						
m,p-Xylenes	ND	0.5	ug/L						
o-Xylene	ND	0.5	ug/L						
Xylenes, total	ND	0.5	ug/L						
Surrogate: 4-Bromofluorobenzene	*70.8*		*ug/L*		*88.6*	*50-140*			
Surrogate: Dibromofluoromethane	*59.1*		*ug/L*		*73.9*	*50-140*			
Surrogate: Toluene-d8	*84.8*		*ug/L*		*106*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L	ND			NC	30	
Volatiles									
Acetone	ND	5.0	ug/L	ND			NC	30	
Benzene	ND	0.5	ug/L	ND			NC	30	
Bromodichloromethane	ND	0.5	ug/L	ND			NC	30	
Bromoform	ND	0.5	ug/L	ND			NC	30	
Bromomethane	ND	0.5	ug/L	ND			NC	30	
Carbon Tetrachloride	ND	0.2	ug/L	ND			NC	30	
Chlorobenzene	ND	0.5	ug/L	ND			NC	30	
Chloroform	ND	0.5	ug/L	ND			NC	30	
Dibromochloromethane	ND	0.5	ug/L	ND			NC	30	
Dichlorodifluoromethane	ND	1.0	ug/L	ND			NC	30	
1,2-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,3-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,4-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,1-Dichloroethane	ND	0.5	ug/L	ND			NC	30	
1,2-Dichloroethane	ND	0.5	ug/L	ND			NC	30	
1,1-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
cis-1,2-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
trans-1,2-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
1,2-Dichloropropane	ND	0.5	ug/L	ND			NC	30	
cis-1,3-Dichloropropylene	ND	0.5	ug/L	ND			NC	30	
trans-1,3-Dichloropropylene	ND	0.5	ug/L	ND			NC	30	
Ethylbenzene	ND	0.5	ug/L	ND			NC	30	
Ethylene dibromide (dibromoethane, 1,2-	ND	0.2	ug/L	ND			NC	30	
Hexane	ND	1.0	ug/L	ND			NC	30	
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L	ND			NC	30	
Methyl Isobutyl Ketone	ND	5.0	ug/L	ND			NC	30	
Methyl tert-butyl ether	ND	2.0	ug/L	ND			NC	30	
Methylene Chloride	ND	5.0	ug/L	ND			NC	30	
Styrene	ND	0.5	ug/L	ND			NC	30	
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L	ND			NC	30	
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	ND			NC	30	
Tetrachloroethylene	ND	0.5	ug/L	ND			NC	30	
Toluene	ND	0.5	ug/L	ND			NC	30	
1,1,1-Trichloroethane	ND	0.5	ug/L	ND			NC	30	
1,1,2-Trichloroethane	ND	0.5	ug/L	ND			NC	30	
Trichloroethylene	ND	0.5	ug/L	ND			NC	30	
Trichlorofluoromethane	ND	1.0	ug/L	ND			NC	30	
Vinyl chloride	ND	0.5	ug/L	ND			NC	30	
m,p-Xylenes	ND	0.5	ug/L	ND			NC	30	
o-Xylene	ND	0.5	ug/L	ND			NC	30	
Surrogate: 4-Bromofluorobenzene	*70.4*		*ug/L*		*88.0*	*50-140*			
Surrogate: Dibromofluoromethane	*64.3*		*ug/L*		*80.3*	*50-140*			
Surrogate: Toluene-d8	*83.0*		*ug/L*		*104*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	2010	25	ug/L	ND	101	68-117			
F2 PHCs (C10-C16)	1440	100	ug/L	ND	89.8	60-140			
F3 PHCs (C16-C34)	3940	100	ug/L	ND	101	60-140			
F4 PHCs (C34-C50)	2230	100	ug/L	ND	89.8	60-140			
Volatiles									
Acetone	104	5.0	ug/L	ND	104	50-140			
Benzene	31.8	0.5	ug/L	ND	79.6	60-130			
Bromodichloromethane	28.0	0.5	ug/L	ND	70.0	60-130			
Bromoform	40.3	0.5	ug/L	ND	101	60-130			
Bromomethane	44.0	0.5	ug/L	ND	110	50-140			
Carbon Tetrachloride	32.6	0.2	ug/L	ND	81.6	60-130			
Chlorobenzene	39.2	0.5	ug/L	ND	97.9	60-130			
Chloroform	33.0	0.5	ug/L	ND	82.5	60-130			
Dibromochloromethane	32.6	0.5	ug/L	ND	81.4	60-130			
Dichlorodifluoromethane	45.0	1.0	ug/L	ND	112	50-140			
1,2-Dichlorobenzene	34.3	0.5	ug/L	ND	85.8	60-130			
1,3-Dichlorobenzene	34.0	0.5	ug/L	ND	85.0	60-130			
1,4-Dichlorobenzene	36.0	0.5	ug/L	ND	90.0	60-130			
1,1-Dichloroethane	43.4	0.5	ug/L	ND	108	60-130			
1,2-Dichloroethane	38.0	0.5	ug/L	ND	95.0	60-130			
1,1-Dichloroethylene	37.6	0.5	ug/L	ND	94.0	60-130			
cis-1,2-Dichloroethylene	28.0	0.5	ug/L	ND	70.0	60-130			
trans-1,2-Dichloroethylene	39.0	0.5	ug/L	ND	97.5	60-130			
1,2-Dichloropropane	30.5	0.5	ug/L	ND	76.3	60-130			
cis-1,3-Dichloropropylene	25.8	0.5	ug/L	ND	64.4	60-130			
trans-1,3-Dichloropropylene	33.4	0.5	ug/L	ND	83.4	60-130			
Ethylbenzene	42.1	0.5	ug/L	ND	105	60-130			
Ethylene dibromide (dibromoethane, 1,2-	27.9	0.2	ug/L	ND	69.8	60-130			
Hexane	31.4	1.0	ug/L	ND	78.6	60-130			
Methyl Ethyl Ketone (2-Butanone)	74.3	5.0	ug/L	ND	74.3	50-140			
Methyl Isobutyl Ketone	69.8	5.0	ug/L	ND	69.8	50-140			
Methyl tert-butyl ether	106	2.0	ug/L	ND	106	50-140			
Methylene Chloride	38.2	5.0	ug/L	ND	95.5	60-130			
Styrene	30.5	0.5	ug/L	ND	76.2	60-130			
1,1,1,2-Tetrachloroethane	33.6	0.5	ug/L	ND	84.0	60-130			
1,1,2,2-Tetrachloroethane	28.2	0.5	ug/L	ND	70.4	60-130			
Tetrachloroethylene	40.7	0.5	ug/L	ND	102	60-130			
Toluene	39.0	0.5	ug/L	ND	97.4	60-130			
1,1,1-Trichloroethane	31.3	0.5	ug/L	ND	78.2	60-130			
1,1,2-Trichloroethane	28.4	0.5	ug/L	ND	70.9	60-130			
Trichloroethylene	32.1	0.5	ug/L	ND	80.2	60-130			
Trichlorofluoromethane	41.1	1.0	ug/L	ND	103	60-130			
Vinyl chloride	38.7	0.5	ug/L	ND	96.7	50-140			
m,p-Xylenes	77.3	0.5	ug/L	ND	96.6	60-130			
o-Xylene	41.5	0.5	ug/L	ND	104	60-130			
Surrogate: 4-Bromofluorobenzene	*75.1*		*ug/L*		*93.9*	*50-140*			
Surrogate: Dibromofluoromethane	*73.8*		*ug/L*		*92.3*	*50-140*			
Surrogate: Toluene-d8	*82.0*		*ug/L*		*102*	*50-140*			

Qualifier Notes:

None

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable
ND: Not Detected
MDL: Method Detection Limit
Source Result: Data used as source for matrix and duplicate samples
%REC: Percent recovery.
RPD: Relative percent difference.
NC: Not Calculated

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.
- F1 range corrected for BTEX.
- F2 to F3 ranges corrected for appropriate PAHs where available.
- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.
- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.
- When reported, data for F4G has been processed using a silica gel cleanup.

PARACEL LABORATORIES LTD

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Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2118069	

Client Name: Pinchin Ltd.	Project Ref: 290235.001 Merivale Rd
Contact Name: Ryan LaRonde/Matt Ryan/ Mike Kosiw	Quote #:
Address: 1 Hines Road, Kanata, ON	PO #:
	E-mail: rlaronde@pinchin.com/mryan@pinchin.com/mkosiw@pinchin.com
Telephone: 613-291-5656	

Page 1 of 1

Turnaround Time

☐ 1 day ☒ 3 day
☐ 2 day ☐ Regular

Date Required:

Regulation 153/04	Other Regulation
☐ Table 1 ☐ Res/Park ☐ Med/Fine	☐ REG 558 ☐ PWQO
☐ Table 2 ☒ Ind/Comm ☒ Coarse	☐ CCME ☐ MISA
☒ Table 3 ☐ Agri/Other	☐ SU - Sani ☐ SU - Storm
☐ Table___	Mun:
For RSC: ☐ Yes ☒ No	☐ Other:

Matrix Type: **S** (Soil/Sed.) **GW** (Ground Water) **SW** (Surface Water) **SS** (Storm/Sanitary Sewer) **P** (Paint) **A** (Air) **O** (Other)

Required Analysis

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken Date	Sample Taken Time	PHCs F1-F4+BTEX	VOCs	PAHs	Metals by ICP	Hg	CrVI	B (HWS)	pH	Texture size =-75mc				
1	MW-1	gw		3	AP 26		x	x											
2	MW-2	gw		3	AP26		x	x											
3	MW-3	gw		3	AP26		x	x											
4																			
5																			
6																			
7																			
8																			
9																			
10																			

Comments:

Method of Delivery: PARACEL COURIER

Relinquished By (Sign):	Received By Driver/Depot: A. Flouse	Received at Lab:	Verified By:
Relinquished By (Print): Ryan LaRonde	Date/Time: 26/04/21 12:46	Date/Time: Apr 26 2021 1620	Date/Time: Apr 26 2021 1625
Date/Time: April 26, 2021	Temperature: °C PM	Temperature: 6.3 °C	pH Verified: ☐ By: MA