



Phase Two Environmental Site Assessment

2025 and 2035 Othello Avenue
Ottawa, Ontario

Prepared for:

Osgoode Properties Ltd.

1284 Wellington Street.
Ottawa, ON K1Y 3A9

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TABLE OF CONTENTS

1.0	EXECUTIVE SUMMARY	4
2.0	INTRODUCTION.....	6
2.1	Site Description.....	7
2.2	Property Ownership	8
2.3	Current and Proposed Future Uses.....	8
2.4	Applicable Site Condition Standards	8
3.0	BACKGROUND INFORMATION	9
3.1	Physical Setting	9
3.2	Past Investigations	10
3.2.1	Summary of Previous Environmental Investigations by Others.....	10
3.2.2	Pinchin Phase One ESA Summary.....	13
3.2.3	Use of Previous Analytical Data.....	14
4.0	SCOPE OF INVESTIGATION.....	14
4.1	Overview of Site Investigation	14
4.2	Media Investigated	15
4.3	Phase One Conceptual Site Model	16
4.4	Impediments	19
5.0	INVESTIGATION METHOD.....	19
5.1	General	19
5.2	Drilling and Excavating	19
5.3	Soil Sampling.....	20
5.4	Field Screening Measurements.....	20
5.5	Groundwater Monitoring Well Installation.....	21
5.6	Groundwater Field Measurements of Water Quality Parameters	22
5.7	Groundwater Sampling	23
5.8	Sediment Sampling	23
5.9	Analytical Testing.....	23
5.10	Residue Management Procedures	24
5.11	Elevation Surveying	24
5.12	Quality Assurance and Quality Control Measures.....	24
5.12.1	Sample Containers, Preservation, Labelling, Handling and Custody of Samples	24
5.12.2	Equipment Cleaning Procedures	25
5.12.3	Field Quality Control Measures.....	25
5.12.4	QA/QC Sampling Program Deviations.....	26
6.0	REVIEW AND EVALUATION	26
6.1	Geology	26
6.2	Groundwater Elevations and Flow Direction	27
6.3	Fine-Medium Soil Texture	27
6.4	Soil Field Screening.....	27
6.5	Soil Quality.....	28
6.5.1	VOCs.....	28
6.5.2	PHCs F1-F4	28
6.5.3	PAHs	28



6.5.4	<i>Metals and Inorganics</i>	28
6.5.5	<i>General Comments on Soil Quality</i>	28
6.6	Groundwater Quality	29
6.6.1	<i>VOCs</i>	29
6.6.2	<i>PHCs F1-F4</i>	29
6.6.3	<i>PAHs</i>	29
6.6.4	<i>General Comments on Groundwater Quality</i>	29
6.7	Sediment Quality	29
6.8	Quality Assurance and Quality Control Results	29
6.8.1	<i>Soil Duplicate Results</i>	31
6.8.2	<i>Groundwater Sample Duplicate Results</i>	31
6.8.3	<i>Groundwater Trip Blank Results</i>	32
6.8.4	<i>Deviations from Analytical Protocol</i>	32
6.8.5	<i>QA/QC Sample Summary</i>	32
6.9	Phase Two Conceptual Site Model	33
6.9.1	<i>Potentially Contaminating Activities</i>	33
6.9.2	<i>Areas of Potential Environmental Concern</i>	33
6.9.3	<i>Subsurface Structures and Utilities</i>	35
6.9.4	<i>Physical Setting</i>	35
6.9.5	<i>Applicable Site Condition Standards</i>	37
6.9.6	<i>Contaminants Exceeding Applicable Site Condition Standards in Soil</i>	38
6.9.7	<i>Contaminants Exceeding Applicable Site Condition Standards in Groundwater</i>	38
6.9.8	<i>Meteorological and Climatic Conditions</i>	38
6.9.9	<i>Soil Vapour Intrusion</i>	38
6.9.10	<i>Contaminant Exposure Assessment</i>	38
6.9.11	<i>Applicability of Section 49.1 Exemptions</i>	39
7.0	CONCLUSIONS	39
7.1	Signatures	39
7.2	Terms and Limitations	40
8.0	REFERENCES	41
9.0	FIGURES AND TABLES	42
10.0	APPENDICES	43

APPENDICES

Appendix A	Legal Survey
Appendix B	Borehole Logs
Appendix C	Laboratory Certificates of Analysis



FIGURES

Figure 1	Key Map
Figure 2	Phase One Study Area
Figure 3	Potentially Contaminating Activities
Figure 4	Areas of Potential Environmental Concern
Figure 5	Borehole and Monitoring Well Location Plan

TABLES

Table 1	Samples Submitted for Laboratory Analysis
Table 2	pH and Grain Size Analysis for Soil
Table 3	Monitoring Well Construction Details
Table 4	Groundwater Elevation Data
Table 5	Petroleum Hydrocarbon Analysis for Soil
Table 6	Volatile Organic Compound Analysis for Soil
Table 7	Polycyclic Aromatic Hydrocarbon Analysis for Soil
Table 8	Metals Analysis for Soil
Table 9	Petroleum Hydrocarbon Analysis for Groundwater
Table 10	Volatile Organic Compound Analysis for Groundwater
Table 11	Polycyclic Aromatic Hydrocarbon Analysis for Groundwater



1.0 EXECUTIVE SUMMARY

Pinchin Ltd. (Pinchin) was retained by Osgoode Properties Ltd. (Client), to complete a Phase Two Environmental Site Assessment (Phase Two ESA) of the property located at 2025 and 2035 Othello Avenue in Ottawa, Ontario (hereafter referred to as the Site or Phase Two Property). The Phase Two Property is presently developed with two multi-tenant residential buildings (Site Buildings A and B); a nine-storey multi-tenant residential building on the north portion of the Phase One Property which possesses the municipal address of 2025 Othello Avenue, and a nine-storey multi-tenant residential building on the south portion of the Phase One Property which possesses the municipal address of 2035 Othello Avenue.

The Phase Two ESA was conducted at the request of the Client in support of the Client's application for Site Plan Approval (SPA) with the City of Ottawa for the above-noted property (Site).

This Phase Two ESA was conducted in accordance with the Province of Ontario's *Ontario Regulation 153/04: Records of Site Condition – Part XV.1 of the Act*, which was last amended by Ontario Regulation 274/20 on July 1, 2020 (O. Reg. 153/04) at the request of the Client for SPA with the City of Ottawa. Pinchin's understanding that the Client does not intend to file a Record of Site Condition (RSC) with the Ontario Ministry of Environment, Conservation and Parks (MECP).

The objectives of this Phase Two ESA were to assess the soil and groundwater quality in relation to five areas of potential environmental concern (APECs) and related potentially contaminating activities (PCAs) and contaminants of potential concern (COPCs) identified in a Phase One ESA completed by Pinchin in accordance with O. Reg. 153/04.

The Phase Two ESA was completed by Pinchin between August 13, 2021 and August 23, 2021 and included the advancement of six boreholes at the Phase Two Property, three of which were completed as groundwater monitoring wells to facilitate the sampling of groundwater and the assessment of groundwater flow. The boreholes were advanced to depths ranging from approximately 1.5 to 7.6 metres below ground surface (mbgs). Select soil samples collected from each of the borehole locations were submitted for laboratory analysis of volatile organic compounds (VOCs), petroleum hydrocarbons (PHCs) fractions 1 through 4 (F1-F4), polycyclic aromatic hydrocarbons (PAHs), and metals. In addition, groundwater samples were collected from three of the newly-installed monitoring wells and submitted for laboratory analysis of VOCs, PHCs, PAHs, and metals.



Based on Site-specific information, the applicable regulatory standards for the Phase Two Property were determined to be the “*Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition*”, 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 (*Table 3 Standards*) for medium and fine-textured soils and residential/parkland/institutional property use.

The laboratory results for the submitted soil and groundwater samples indicated that all reported concentrations for the parameters analyzed met the corresponding *Table 3 Standards*.

It is the opinion of the Qualified Person (QP) who supervised the Phase Two ESA that the applicable *Table 3 Standards* for soil at the Phase Two Property have been met, and that no further subsurface investigation is required in relation to assessing the APECs at the Phase Two Property.

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.



2.0 INTRODUCTION

A Phase Two ESA is defined as an “assessment of property conducted in accordance with the regulations by or under the supervision of a QP to determine the location and concentration of one or more contaminants in the land or water on, in or under the property”. Under O. Reg. 153/04, the purpose of a Phase Two ESA is as follows:

- To determine the location and concentration of contaminants in the land or water on, in or under the Phase Two Property;
- To obtain information about environmental conditions in the land or water on, in or under the Phase Two Property necessary to undertake a Risk Assessment, in accordance with O. Reg. 153/04, with respect to one or more contaminants of concern; and
- To determine if applicable Site Condition Standards and standards specified in a Risk Assessment for contaminants on, in or under the Phase Two Property were met as of the certification date by developing an understanding of the geological and hydrogeological conditions at the Phase Two Property and conducting one or more rounds of field sampling for all contaminants associated with any APEC identified in the Phase Two ESA sampling and analysis plan (SAP) and for any such contaminants identified during subsequent Phase Two ESA activities and analyses of environmental conditions at the Phase Two Property.

The Phase Two ESA was conducted at the request of the Client in support of the Client's application for Site Plan Approval (SPA) with the City of Ottawa for the above-noted property (Site). The Phase Two ESA was conducted in accordance with O. Reg. 153/04 even though the Client does not intend to submit an RSC to MECP given that there is no regulatory requirement to file one.

The overall objectives of this Phase Two ESA were to assess the soil and groundwater quality in relation to APECs and related COPCs identified in a Phase One ESA completed by Pinchin, the findings of which were summarized in the report entitled “*Phase One Environmental Site Assessment, 2025 and 2035 Othello Avenue, Ottawa Ontario*”, completed by Pinchin for the Client and dated July 6, 2021. The property assessed by the Pinchin Phase One ESA is referred to herein as the Phase One Property. The Phase Two ESA was conducted on the whole Phase One Property, at specific APECs identified during the Phase One ESA, and the Phase One Property and Phase Two Property have the same boundaries.



2.1 Site Description

This Phase Two ESA was completed for the property located at the municipal address of 2025 and 2035 Othello Avenue, Ottawa, Ontario. A Key Map showing the Phase Two Property location is provided on Figure 1 and a detailed plan of the Phase Two Property and surrounding lands is provided on Figure 2 (all Figures are provided within Section 9.0).

The Phase Two Property is presently developed with two multi-tenant residential buildings (Site Buildings A and B); a nine-storey multi-tenant residential building on the north portion of the Phase One Property which possesses the municipal address of 2025 Othello Avenue, and a nine-storey multi-tenant residential building on the south portion of the Phase One Property which possesses the municipal address of 2035 Othello Avenue.

A summary of the pertinent details of the Phase Two Property is provided in the following table:

Detail	Source / Reference	Information
Legal Description	Legal Survey Drawing provided by the Client	Part of Lot 17, Junction Gore, Being Parts 1, 2 and 3 on Plan 4R-421, Township of Gloucester, City of Ottawa
Municipal Address	Client	2025 and 2035 Othello Avenue Ottawa, ON K1G 3R4
Parcel Identification Numbers (PINs)	Client	04172-0272 and 04172-0273
Current Owner	Client	Osgoode Properties
Current Occupants	Various residential tenants	Multi-tenant residential buildings
Client	Authorization to Proceed, Limitation of Liability & Terms of Engagement Form	Osgoode Properties
Client Contact Information	Authorization to Proceed, Limitation of Liability & Terms of Engagement Form	Geoffrey Younghusband c/o Osgoode Properties 1284 Wellington Street West Ottawa, ON K1Y 3A9
Site Area	Site Representative	2.7 hectares (6.7 acres)

A legal survey showing the Phase Two Property is provided in Appendix A (all Appendices are provided in Section 10.0).



2.2 Property Ownership

The entirety of the Phase Two Property is currently owned by Osgoode Properties, located at 1284 Wellington Street West, Ottawa, ON K1Y 3A9. Contact information for the Phase Two Property owner is provided in the preceding section.

Pinchin was retained by Mr. Geoffrey Younghusband to conduct the Phase Two ESA of the Phase Two Property. Contact information for Mr. Younghusband is provided in the preceding section.

2.3 Current and Proposed Future Uses

The Phase Two Property is presently utilized for residential land use. The proposed future use of the Site is to remain residential, as such does not require that an RSC be filed as per Section 168.3.1 of the Province of Ontario's *Environmental Protection Act*.

2.4 Applicable Site Condition Standards

The Phase Two Property is currently a residential property located within the City of Ottawa and the proposed future land use is to remain residential. It is Pinchin's understanding that drinking water for the Phase Two Property and surrounding properties within 250 metres of the Phase Two Property is supplied by the City of Ottawa, and there are no known drinking water supply wells within 250 metres of the Phase Two Property. Source water is obtained by the City of Ottawa from the Ottawa River.

Bedrock was not encountered at any of the boreholes completed at the Phase Two Property during the Phase Two ESA, which were advanced to a maximum depth of approximately 7.6 mbgs and, as such, the Phase Two Property is not a shallow soil property as defined in Section 43.1 of O. Reg. 153/04.

The Phase Two Property does not contain a water body nor is it located within 30 metres of a water body and the use of standards for properties situated within 30 metres of a water body is not required.

Section 41 of O. Reg. 153/04 states that a property is classified as an "environmentally sensitive area" if the pH of the surface soil (less than or equal to 1.5 mbgs) is less than 5 or greater than 9, if the pH of the subsurface soil (greater than 1.5 mbgs) is less than 5 or greater than 11, or if the property is an area of natural significance or is adjacent to or contains land within 30 metres of an area of natural significance. A total of four representative soil samples collected from the boreholes advanced at the Phase Two Property were submitted for pH analysis. The pH analytical results are summarized in Table 2. The pH values measured in the submitted soil samples were within the limits for non-sensitive sites, with the exception of BH-1 SS-2 which had a pH value of 10.03. However, based on observations made at the time of drilling, the elevated pH at this location is likely attributed to concrete within the soil sample in the location of the former on-Site pool and, as such, is biased high. The Phase Two Property 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 Phase Two Property is not an environmentally sensitive area.

As discussed further in Section 6.4, based on the results of grain size analysis completed on representative soil samples collected during the Phase Two ESA and the observed stratigraphy at the borehole locations at the Phase Two Property, it is the QP's opinion that over two-thirds of the overburden at the Phase Two Property is medium and fine-textured as defined by O. Reg. 153/04. Therefore, the soil at the Phase Two Property has been considered medium and fine-textured for the purpose of establishing the applicable MECP Site Condition Standards.

Based on the above, the appropriate Site Condition Standards for the Phase Two Property are the Table 3 Standards for:

- Medium and fine-textured soils; and
- Residential/parkland/institutional property use.

As such, all analytical results have been compared to these *Table 3 Standards*.

3.0 BACKGROUND INFORMATION

3.1 Physical Setting

The Phase Two Property is located in the east portion of the City of Ottawa at an elevation of approximately 77 metres above mean sea level (mamsl). The topography of the Phase Two Property is generally flat with little relief. The properties surrounding the Phase Two Property are at an equivalent grade. There are no drainage features (e.g., open ditches or swales) present on-Site. Surface water (e.g., storm runoff) is inferred to run overland and drain into the on-Site municipal storm sewer catch basins.

There are no open water bodies or areas of natural significance located on-Site or within the area assessed by the Pinchin Phase One ESA (the Phase One Study Area). A plan showing the Phase One Study Area is presented on Figure 2. The nearest surface water body to the Phase Two Property is the Ramsay Creek and the Rideau River, located approximately 1.8 km east and 3.6 km west (respectively) of the Phase Two Property at elevations of approximately 72 and 60 mamsl.

A review of the municipal plan for the City of Ottawa indicated that the Phase One Study Area is not located in whole or in part within a well head protection area or other designation identified by the City of Ottawa for the protection of groundwater.

The records review indicated that the Phase One Property and all other properties within the Phase One Study Area are not serviced by a municipal drinking water system.



3.2 Past Investigations

3.2.1 Summary of Previous Environmental Investigations by Others

Reports summarizing the following environmental investigations completed by others and by Pinchin and pertaining to the Phase Two Property were reviewed as part of the Pinchin Phase One ESA:

- Report entitled “*Phase I Environmental Site Assessment, 2025 and 2035 Othello Avenue, Ottawa, Ontario*” prepared by AGRA Earth and Environmental Limited (AGRA) for Osgoode Properties Limited, and dated August 2000 (the 2000 AGRA Phase I ESA Report);
- Report entitled “*Phase II Environmental Site Assessment, 2025 and 2035 Othello Avenue, Ottawa, Ontario*” prepared by AGRA for Osgoode Properties, and dated August 2000 (the 2000 AGRA Phase II ESA Report); and
- Report entitled “*Phase I Environmental Site Assessment, Pleasant Park Place Apartments, 2025 and 2035 Othello Avenue, Ottawa, Ontario*” prepared by Pinchin for Osgoode Properties, and dated October 21, 2010 (the 2010 Pinchin Phase I ESA Report).

A summary of the salient information identified in the above-referenced reports prepared by others is provided below.

2000 AGRA Phase I ESA Report

The 2000 AGRA Phase I ESA Report presented their findings in general accordance with the CSA document entitled “*Phase I Environmental Site Assessment*” (CSA Document Z768-01), including a review of readily available historical records and reasonably ascertainable regulatory information, a Site reconnaissance, interviews, an evaluation of information and reporting.

Based on the results of the 2000 AGRA Phase I ESA Report, Agra noted that the following could result in potential subsurface impacts at the Phase One Property:

- Retail fuel outlets (RFOs) operating on adjacent properties to south and east of the Phase One Property had the potential to result in subsurface impacts at the Phase One Property.

Based on the above-noted information, AGRA recommended completing a Phase II ESA on the southern and eastern boundaries of the Phase One Property.



2000 AGRA Phase II ESA Report

The 2000 AGR Phase II ESA Report, completed at the Phase One Property to address the concerns identified in the 2000 AGRA Phase I ESA Report, consisted of the advancement of three boreholes at the Phase One Property; one along the south boundary, and two along the east boundary. The boreholes were advanced to depths of 6.0 and 7.6 m below ground surface (mbgs), and all three boreholes were instrumented as groundwater monitoring wells. One soil sample and one groundwater sample were collected from each borehole/groundwater monitoring well and submitted for laboratory analysis of total petroleum hydrocarbons (TPHs) in the gas/diesel and heavy oil ranges, as well as benzene, toluene, ethylbenzene and xylenes (BTEX). The soil and groundwater analytical results for BTEX concentrations would satisfy the *Table 3 Standards*. There is no direct correlation as to how the measured concentrations of TPHs (gas/diesel and heavy oil) compare to the *Table 3 Standards* as the *Table 3 Standards* utilizes carbon fractions (F1 – F4) in petroleum hydrocarbons (PHCs) to characterize soil and groundwater. However, that the values reported in the 2000 AGRA Phase II ESA Report were primarily non-detect. The exception to that is a concentration of TPHs (heavy oil) in soil of 200 ug/g in BH3-1 (located on the northeast portion of the Phase One Property); however, given the *Table 3 Standards* for PHCs (F4) in soil (which represents heavy oils) is 2,800 ug/g, it is Pinchin's opinion that the analytical results from the 2000 AGRA Phase II ESA Report would likely comply with the *Table 3 Standards*.

2010 Pinchin Phase I ESA Report

The 2010 Pinchin Phase I ESA Report presented their findings in general accordance with the CSA document entitled "*Phase I Environmental Site Assessment*" (CSA Document Z768-01) dated November 2001, including a review of readily available historical records and reasonably ascertainable regulatory information, a Site reconnaissance, interviews, an evaluation of information and reporting. In addition, the 2010 Pinchin Phase I ESA Report reviewed the 2000 AGRA Phase I ESA Report (the 2000 AGRA Phase II ESA Report was not available at the time).

Based on the results of the 2010 Pinchin Phase I ESA Report, Pinchin noted that the following could result in potential subsurface impacts at the Phase One Property:

- A dry cleaner, listed under various names, had operated at 1910 St. Laurent Boulevard from 1964 until 2010. This property is located adjacent to the north boundary of the Phase One Property and was registered with the MECP as a generator of halogenated solvent wastes. Based on the close proximity of this property to the Phase One Property, it was Pinchin's opinion that this property could result in potential subsurface impacts at the Phase One Property;



- An automotive repair/servicing facility and RFO had operated at 2013 St. Laurent Boulevard from 1964 until 2010. This property is located approximately 15 m east of the Phase One Property and is situated hydraulically upgradient to the Phase One Property in relation to the inferred groundwater flow direction. Based on the close proximity to the Phase One Property, as well as the inferred groundwater flow direction, it was Pinchin's opinion that this property could result in potential subsurface impacts at the Phase One Property;
- An RFO had operated at 1034 Pleasant Park Road from 1989 until 2010. This property is located approximately 15 m south of the Site. Based on the close proximity to the Phase One Property, it was Pinchin's opinion that this property could result in potential subsurface impacts at the Phase One Property; and
- An automotive repair/servicing facility had operated at 1030 Pleasant Park Road from 1989 until 2010. This property is located approximately 25 m south of the Site. Based on close proximity to the Phase One Property, it was Pinchin's opinion that this property could result in potential subsurface impacts at the Phase One Property.

Previous Environmental Report Summary

Based on Pinchin's review of the above-referenced reports prepared by Pinchin and others, the following could result in potential subsurface impacts, or are known subsurface impacts, at the Phase Two Property:

- An automotive repair/servicing facility and RFO had operated at 2013 St. Laurent Boulevard from 1964 until 2010. This property is located approximately 15 m east of the Phase One Property and is situated hydraulically upgradient to the Phase One Property in relation to the inferred groundwater flow direction;
- An RFO had operated at 1034 Pleasant Park Road from 1989 until 2010. This property is located approximately 15 m south of the Site; and
- An automotive repair/servicing facility had operated at 1030 Pleasant Park Road from 1989 until 2010. This property is located approximately 25 m south of the Site.



The following additional PCAs were identified in the reviewed reports within the Phase One Study Area, but are not considered to result in APECs at the Phase One Property:

- A hydro vault is located in the central portion of the basement level of Site Building A;
- A hydro vault is located in the central portion of the basement level of Site Building B;
- A 1972 PUR provided by RMS reported that Site Building B was originally heated by oil-fired boilers. However, at the time of Pinchin's Site reconnaissance, the Site Representative indicated she was unaware of the presence of a former aboveground storage tank (AST) or underground storage tank (UST) that would have stored heating oil. In addition, Pinchin was unable to confirm or refute the presence of former on-Site ASTs and USTs at the time of the Site reconnaissance, and no evidence of former ASTs or USTs was observed by Pinchin; and
- A dry cleaner, listed under various names, had operated at 1910 St. Laurent Boulevard from 1964 until 2010. This property is located adjacent to the north boundary of the Phase One Property and was registered with the MECP as a generator of halogenated solvent wastes. However, based on the results of the Record of Site Condition (RSC) completed at this property, it is Pinchin's opinion that this PCA does not represent an APEC for the Phase One Property.

3.2.2 Pinchin Phase One ESA Summary

In July 2021 Pinchin conducted a Phase One ESA in support of a future SPA Phase Two Property. The Phase One ESA consisted of a Site visit, interviews with Site personnel, records review, evaluation of information, and preparation of a written report which was completed under the supervision of a QP. A plan showing the Phase One Study Area is attached as Figure 2.

The Phase One ESA was completed recently (i.e., within three months of the start of the Phase Two ESA) and in accordance with the requirements of O. Reg. 153/04. Therefore, the information provided within the Phase One ESA Report is considered adequate such that it can be relied upon for the purpose of this Phase Two ESA and future filing of an RSC.

Based on information obtained during the Phase One ESA, a total of five APECs and corresponding potentially contaminating activities (PCAs) and COPCs were identified that could potentially affect the environmental condition of the subsurface media on, in or under the Phase Two Property. The COPCs associated with each APEC were determined based on a review of the PCAs and substances associated with the related activities, and on several sources of information, including but not limited to, Pinchin's experience with environmental contamination and hazardous substances, common industry practices for



analysis of such contaminants and point sources, literature reviews of COPCs and associated hazardous substances, and evaluations of contaminant mobility and susceptibility for migration in the subsurface.

3.2.3 *Use of Previous Analytical Data*

No previous soil and groundwater data were available for use in the Phase Two ESA.

4.0 SCOPE OF INVESTIGATION

4.1 Overview of Site Investigation

The scope of work for this Phase Two ESA was prepared to address the APECs identified at the Phase Two Property and consisted of the following:

- Prepared a health and safety plan and arranged for the completion of underground utility locates prior to the commencement of drilling activities.
- Developed a detailed SAP prior to the advancement of the boreholes and the installation of the monitoring wells.
- Retained Strata Drilling Group Inc. (Strata) to advance boreholes using a Geoprobe 7822DT™ drill rig. Strata is licensed by the MECP in accordance with Ontario Regulation 903 (as amended) (O. Reg. 903) to undertake borehole drilling/well installation activities. Strata advanced six boreholes at the Phase Two Property to investigate the potential for soil contaminants associated with the APECs identified in the Phase One ESA.
- Collected soil samples at regular intervals within each borehole.
- Field screened soil samples for visual/olfactory evidence of impacts as well as for petroleum-derived vapours in soil headspace using a combustible gas indicator (CGI) calibrated to hexane and VOC-derived vapours in soil headspace using a photoionization detector (PID).
- Submitted a minimum of one “worst case” soil sample from each borehole for chemical analysis of:
 - PHCs F1-F4;
 - VOCs;
 - PAHs; and
 - Metals.
- Developed each of the newly-installed monitoring wells prior to the collection of groundwater samples.



- Submitted one representative groundwater sample from each of the newly-installed monitoring wells and for the chemical analysis of the following parameters:
 - PHCs F1-F4;
 - VOCs;
 - PAHs; and
 - Metals.
- Submitted two duplicate soil samples and one duplicate groundwater samples for chemical analysis of select parameters for quality assurance/quality control (QA/QC) purposes.
- Submitted one trip blank for the groundwater sampling program for the chemical analysis of VOCs and PHCs F1 for QA/QC purposes.
- Submitted one representative soil sample for the laboratory analysis of grain size and four representative soil samples for the laboratory analysis of pH in order to confirm the appropriate MECP Site Condition Standards.
- Conducted groundwater monitoring at each of the newly-installed groundwater monitoring wells by measuring depth to groundwater from both top of casing and ground surface reference points, and assessing the presence/absence of non-aqueous phase liquid (NAPL), including light NAPL (LNAPL) and dense NAPL (DNAPL), using an oil/water interface probe.
- Completed an elevation survey to establish the elevations of the boreholes and newly-installed monitoring wells relative to a benchmark with an assumed elevation.
- Compared the soil and groundwater analytical results to the applicable criteria stipulated in the *Table 3 Standards*.
- Prepared a report (this report) documenting the findings of the Phase Two ESA which meets the reporting requirements listed in *Schedule E* and *Table 1 – Mandatory Requirements for Phase Two Environmental Site Assessment Reports* of O. Reg. 153/04.

4.2 Media Investigated

The scope of work for this Phase Two ESA was prepared to address the APECs and corresponding media at the Phase Two Property as identified through completion of the Phase One ESA.



The media of concern for the Phase Two ESA were soil and groundwater. Pinchin included the assessment of groundwater as part of the Phase Two ESA to investigate groundwater quality in relation to off-Site current and former RFOs and automotive repair facilities to the south and east of the Phase Two Property. Pinchin did not conduct sediment sampling as part of this Phase Two ESA as there are no surface water bodies and, therefore no sources of sediment, present on-Site.

For assessing the soil at the Phase Two Property for the presence of COPCs, a total of six boreholes were advanced at the Phase Two Property for the purpose of collecting soil samples. Select “worst case” samples collected from each of the boreholes, were submitted for laboratory analysis of the COPCs.

For assessing the groundwater at the Phase Two Property for the presence of COPCs, groundwater monitoring wells were installed in three of the six boreholes completed at the Phase Two Property to permit the collection of groundwater samples. Groundwater samples, comprising samples collected from each of the newly installed monitoring wells were submitted to the analytical laboratory for analysis of the COPCs.

4.3 Phase One Conceptual Site Model

A conceptual site model (CSM) has been created to provide a summary of the findings of the Phase One ESA. The Phase One CSM is summarized in Figures 1 through Figure 4 which illustrate the following features within the Phase One Study Area, where present:

- Existing buildings and structures;
- Water bodies located in whole or in part within the Phase One Study Area;
- Areas of natural significance located in whole or in part within the Phase One Study Area;
- Drinking water wells located at the Phase One Property;
- Land use of adjacent properties;
- Roads within the Phase One Study Area;
- PCAs within the Phase One Study Area, including the locations of tanks; and
- APECs at the Phase One Property.

The following provides a narrative summary of the Phase One CSM:

- The Phase One Property is a near rectangular-shaped parcel of land approximately 6.7 acres (2.7 hectares) in size, located at the northeast corner of the intersection of Othello Avenue and Pleasant Park Road in the City of Ottawa. The Phase One Property is presently developed with a nine-storey multi-tenant residential building located on the north portion of the Phase One Property (i.e., Site Building A, which possesses the municipal address 2025 Othello Avenue) and a nine-storey multi-tenant residential building located on the south portion of the Phase One Property (i.e., Site Building B, which possesses the municipal address 2035 Othello Avenue). The Phase One Property has been used for residential purposes since initial development in approximately 1972. There is no record of industrial use or of a commercial use (e.g., garage, bulk liquid dispensing facility or dry cleaner) that would require classifying the Phase One Property as an enhanced investigation property;
- The nearest surface water bodies are Ramsay Creek and the Rideau River, located approximately 1.8 km east and 3.6 km west (respectively) of the Phase One Property at elevations of approximately 72 and 60 mamsl;
- No areas of natural significance were identified within the Phase One Study Area;
- No drinking water wells were located on the Phase One Property;
- The adjacent and surrounding properties in the vicinity of the Site consist of parkland, residential and commercial land uses. The properties located north of the Phase One Property consist of asphalt-paved parking areas and a shopping centre to beyond 200 m from the Phase One Property; the properties located south of the Phase One Property consist of Pleasant Park Road followed by commercial buildings and residential developments to beyond 200 m from the Phase One Property; the properties located east of the Phase One Property consist of St. Laurent Boulevard followed by a commercial building and residential developments to beyond 200 m from the Phase One Property; and the properties located west of the Phase One Property consist of parkland and residential developments to beyond 200 m from the Phase One Property;



- A total of eight PCAs were identified within the Phase One Study Area, consisting of three PCAs at the Phase One Property and five PCAs within the Phase One Study Area, outside of the Phase One Property. Of the on-Site PCAs, only the fill material of unknown quality is considered an APEC for the Phase One Property; however, it is Pinchin's opinion that this can be addressed at the time of redevelopment. All off-Site PCAs represent APECs for the Phase One Property, with the exception of the former dry cleaners located at 1910 St. Laurent Boulevard, as a recent RSC filed for this property has shown that no subsurface impacts requiring remedial activities were required for this property in order to file the RSC. The above-noted on-Site PCA (i.e., fill material of unknown quality) and the remaining off-Site PCAs (i.e., automotive repair/servicing operations and former RFO operations at 2013 St. Laurent Boulevard, automotive repair/servicing operations at 1034 Pleasant Park Road, and RFO operations at 1030 Pleasant Park Road) all represent APECs for the Phase One Property. Figure 4 depicts the locations of each APEC;
- Underground utilities at the Phase One Property provide potable water, natural gas, electrical, telephone, cable and sewer services to the Site Buildings. These services enter the Site Buildings through subsurface conduits, with the exception of a pressurized natural gas line, which connects to meters located along the exterior of the Site Buildings. Storm sewer catch basins located in the parking lots connect to the municipal storm sewer line. Plans were not available to confirm the depths of these utilities, but they are estimated to be located approximately 2.0 to 3.0 mbgs. Based on the information provided within the 2000 AGRA Phase II ESA Report, the depth to groundwater at the Phase One Property reportedly ranges from approximately 4.0-5.5 mbgs;
- The Phase One Property and the surrounding properties located within the Phase One Study Area are located within alluvial deposits consisting of stratified gravel, sand, silt and clay. Bedrock is expected to consist of sedimentary rocks consisting of limestone, dolomite, shale, argillite, sandstone, quartzite, and/or grit. During the 2000 AGRA Phase II ESA Report, the soil stratigraphy was observed to consist of sand or sand and gravel fill, underlain by silty clay with trace gravel and clay, to approximately 7.6 mbgs; and
- The Phase One Property is relatively flat with little relief. Local groundwater flow is inferred to be to the west, based on the location of the Rideau River.



4.4 Impediments

Pinchin had full access to the Phase Two Property throughout the completion of the Phase Two ESA.

5.0 INVESTIGATION METHOD

5.1 General

The Phase Two ESA field work was conducted in accordance with Pinchin's standard operating procedures (SOPs) as provided in the SAP, which have been developed in accordance with the procedures and protocols provided in the MECP document entitled "*Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario*", dated December 1996, in the Association of Professional Geoscientists of Ontario document entitled "*Guidance for Environmental Site Assessments under Ontario Regulation 153/04 (as amended)*", dated April 2011, and in O. Reg. 153/04.

In addition, Pinchin's SOP for groundwater sampling using low-flow purging and sampling procedures follows the United States Environmental Protection Agency Region I document entitled "*Low Stress (Low Flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells*" dated January 19, 2010 (Low Flow Sampling Protocol).

No deviations from Pinchin's SOPs occurred during the Phase Two ESA.

5.2 Drilling and Excavating

Pinchin retained Strata to advance a total of six boreholes at the Phase Two Property on August 13, 2021, to investigate the potential presence of COPCs associated with the APECs identified in the Phase One ESA. The boreholes were drilled to a maximum depth of 7.6 mbgs using a Geoprobe 7822DT™ drill rig.

The locations of the boreholes are provided on Figure 5. A description of the subsurface stratigraphy encountered during the drilling program is documented in the borehole logs included in Appendix B.

Measures taken to minimize the potential for cross-contamination during the borehole drilling program included:

- The use of dedicated, disposable polyvinyl chloride (PVC) soil sample liners for soil sample collection during direct-push drilling;
- The extraction of soil samples from the interior of the sampling device (where possible), rather than from areas in contact with the sampler walls;
- The cleaning of all non-dedicated drilling and soil sampling equipment (i.e., spatulas used for sample collection) before initial use and between sample and borehole locations; and



- The use of dedicated and disposable nitrile gloves for all soil sample handling.

Soil samples were collected at continuous intervals during direct-push drilling at a general frequency of one soil sample for every 0.5 metres drilled.

No excavating activities (e.g., test pitting) were completed as part of the Phase Two ESA.

5.3 Soil Sampling

Soil samples were collected in the boreholes 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 dedicated sample liners by Pinchin personnel using a stainless-steel spatula. Dedicated and disposable nitrile gloves were worn during the collection of each soil sample. A portion of each sample was placed in a resealable plastic bag for field screening and a portion was containerized in laboratory-supplied glass sampling jars. Following sample collection, the sample jars were placed into dedicated coolers with ice for storage pending transport to Paracel Laboratories (Paracel) in Ottawa, Ontario. Formal chain of custody records were maintained between Pinchin and the staff at Paracel.

Subsurface soil conditions were logged on-Site by Pinchin personnel at the time of borehole drilling. 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 trace silt with organic material underlain by silty clay and clay to a maximum depth of approximately 7.6 mbgs.

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

A detailed description of the subsurface stratigraphy encountered during the borehole drilling program is documented in the borehole logs included in Appendix B.

5.4 Field Screening Measurements

Soil samples were collected at each of the sampling intervals during the drilling activities and analyzed in the field for VOC-derived and petroleum-derived vapour concentrations in soil headspace with an RKI Eagle 2™ equipped with a PID and a CGI operated in methane elimination mode. The soil samples collected for field-screening purposes were placed in resealable plastic bags. The plastic bags were stored in a warm environment for a minimum of five minutes and agitated in order to release organic vapours within the soil pore space prior to analysis with the PID and CGI.

Based on a review of the operator's manual, the RKI Eagle 2™ PID has an accuracy/precision of up to 0.1 parts per million (ppm). The PID was calibrated prior to field use by the equipment supplier Maxim Environmental and Safety (Maxim) according to Maxim's standard operating procedures. The gas standard was stored in a gas cylinder and delivered to the PID via a regulator valve. An in-field re-calibration of the PID was conducted (using the gas standard in accordance with the operator's manual instructions) if the calibration check indicated that the PID's calibration had drifted by more than +/- 10%.

Based on a review of the operator's manual, the RKI Eagle 2™ has an accuracy/precision of up to +/- 25 ppm, or +/- 5% of the reading (whichever is greater). The CGI was calibrated prior to field use by Maxim according to Maxim's standard operating procedures. In addition, the CGI calibration was tested at the beginning of each day of drilling activities (beginning on the second day of drilling) against a Maxim-provided hexane gas standard with a concentration of 1,650 ppm. The gas standard was stored in a gas cylinder and delivered to the CGI via a regulator valve. An in-field re-calibration of the CGI was conducted (using the gas standard in accordance with the operator's manual instructions) if the calibration check indicated that the CGI's calibration had drifted by more than +/- 10%.

In general, the soil samples with the highest measured vapour concentrations (i.e., "worst case") from a given borehole were submitted for laboratory analysis. Sample depth and visual and olfactory observations of potential contaminants were also used in conjunction with the vapour concentrations in making the final selection of "worst case" soil samples for laboratory analysis.

5.5 Groundwater Monitoring Well Installation

Following soil sampling, Strata installed a groundwater monitoring well in boreholes MW-2, MW-5, and MW-6 under the full-time monitoring of a Pinchin field representative.

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. 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.

All monitoring wells were installed in accordance with O. Reg. 903. The monitoring well construction details are provided in Table 3 and on the borehole logs in Appendix B. Upon completion of the monitoring well installations, Strata completed and filed a Water Well Record with the MECP for the well cluster.

The monitoring wells were developed on August 17, 2021 in accordance with Pinchin's SOP for well development by removing a minimum of three to a maximum of seven standing water column volumes using dedicated inertial pumps comprised of Waterra polyethylene tubing and foot valves. The well development activities were completed a minimum of 24 hours prior to the groundwater sampling activities.

Measures taken to minimize the potential for cross-contamination during well installation and well development included the following:

- The use of dedicated and disposable nitrile gloves for handling well materials during well installation and during well development; and
- The use of dedicated inertial pumps for each well.

5.6 Groundwater Field Measurements of Water Quality Parameters

Water quality parameters were measured during the low-flow purging and sampling procedure completed on August 23, 2021 at monitoring wells MW-2, MW-5, and MW-6.

Measurements of the water quality parameters oxidation-reduction potential, dissolved oxygen, temperature, specific conductance, pH and turbidity were made during purging using a flow-through cell and a Horiba U52™ water quality meter (Horiba Water Quality Meter). The Horiba Water Quality Meter was calibrated prior to use by the equipment supplier (Maxim) in accordance with the manufacturer's specifications.

Field-measured parameters were recorded from the Horiba Water Quality Meter at regular intervals in order to determine stabilized groundwater geochemical conditions and hence representative groundwater sampling conditions, in general accordance with the criteria stipulated in the Low Flow Sampling Protocol.

It should be noted that representative groundwater sampling conditions were determined by Pinchin personnel utilizing the field parameter stabilization criteria noted within the Low Flow Sampling Protocol as well as additional factors including total purge time and purge volume.



5.7 Groundwater Sampling

All monitoring wells installed by Pinchin as part of the Phase Two ESA were sampled. The monitoring wells were sampled a minimum of 24 hours after the completion of well development activities (see Section 5.5). Monitoring wells All monitoring wells were sampled in accordance with the Low Flow Sampling Protocol as described below.

Well purging was completed using a using a Geotech™ submersible bladder pump and Geotech™ controller powered by a 12-Volt battery. Compressed air was delivered to the bladder pump unit via 47-millimetre (3/16-inch) ID polyethylene tubing. Groundwater was returned to the surface from the bladder pump via dedicated 0.64-cm (1/4-inch) ID polyethylene tubing. A Horiba Water Quality Meter connected to a flow-through cell was used to monitor water quality parameters during groundwater purging to assess whether water quality parameter stabilization was achieved prior to sample collection. The flow rate of the bladder pump was adjusted to minimize drawdown of the water table and the introduction of sediment into the samples.

Once field parameter stabilization was achieved, groundwater samples were collected at each well using the bladder pump and dedicated polyethylene tubing by pumping groundwater directly into new laboratory-supplied sample bottles at a pumping rate of less than 0.5 litres per minute.

Following sample collection, the sample bottles were placed into dedicated coolers with ice for storage pending transport to Paracel Labs. Formal chain of custody records were maintained between Pinchin and the staff at Paracel Labs.

5.8 Sediment Sampling

Sediment sampling was not completed as part of this Phase Two ESA.

5.9 Analytical Testing

All collected soil and groundwater samples were delivered to Paracel Labs for analysis. Paracel Labs is an independent laboratory accredited by the Canadian Association for Laboratory Accreditation. Formal chain of custody records of the sample submissions were maintained between Pinchin and the staff at Paracel Labs. Paracel Labs conducted the laboratory analysis in accordance with the MECP document entitled "*Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act*" dated March 9, 2004 and revised on July 1, 2011 (*Analytical Protocol*).

5.10 Residue Management Procedures

Given that the laboratory results for the submitted soil samples indicated that all reported concentrations for the parameters analyzed met the corresponding *Table 3 Standards*, and no evidence of NAPL, odours or sheens was observed during sampling and monitoring activities, the excess soil and groundwater was deposited on the ground surface at the Phase Two Property or removed off-Site by Strata.

5.11 Elevation Surveying

On August 27, 2021, Pinchin completed a vertical elevation survey of all monitoring well locations using a Topcon Self-Leveling Laser Level and receiver. The elevations of the monitoring wells were tied to a temporary benchmark, a sanitary sewer catch basin, along the south portion of the Phase One Property, which was assigned an arbitrary elevation of 100.00 m.

A summary of the well elevation survey data is provided in Table 3 and Table 4.

5.12 Quality Assurance and Quality Control Measures

The QA/QC protocols that were followed during borehole drilling and soil and groundwater sampling so that representative samples were obtained are described in the following subsections.

5.12.1 Sample Containers, Preservation, Labelling, Handling and Custody of Samples

Soil and groundwater samples were containerized within laboratory-prepared sample containers in accordance with the *Analytical Protocol*.

The following soil sample containers and preservatives were used:

- VOCs and PHCs F1: 40 millilitre (mL) glass vials with septum-lids, pre-charged with methanol preservative; and
- PHCs F2-F4, PAHs, metals, inorganics, pH and grain size: 120 or 250 mL unpreserved clear glass wide-mouth jars with a Teflon™-lined lid.

The following groundwater sample containers and preservatives were used:

- VOCs and PHCs F1: 40 mL clear glass vials with septum-lids, pre-charged with sodium bisulphate preservative;
- PHCs F2-F4: 250 mL amber glass bottles with Teflon™-lined lids, pre-charged with sodium bisulphate preservative;
- PAHs: 250 mL unpreserved amber glass bottles with Teflon™-lined lids;
- Inorganics: 500 mL unpreserved high density polyethylene (HDPE) bottles; and



- Metals (excluding hexavalent chromium and mercury): 125 mL acid-rinsed HDPE bottles, pre-charged with nitric acid preservative.

Groundwater samples submitted for metals analyses were field-filtered using dedicated 0.45 micron filters.

Trip blank water samples for VOC parameter analysis were provided by Paracel Labs in 40 mL clear glass vials filled with VOC-free water.

Each soil, groundwater and QA/QC sample was labelled with a unique sample identifier along with the company name, sampling date, Pinchin project number and analysis required.

Each sample was placed in a cooler on ice immediately upon collection and prior to submission to Paracel Labs for analysis. Formal chain of custody records of the sample submissions were maintained between Pinchin and the staff at Paracel Labs.

5.12.2 Equipment Cleaning Procedures

Dedicated, single-use PVC sample liners were used for each soil sample collected, which precluded the need for drilling equipment cleaning during soil sample collection. Equipment utilized in soil sample collection and handling (i.e., spatulas used to remove soil from the sample liners) was cleaned with a solution of Alconox™ detergent and potable water followed by a distilled water rinse prior to initial use and between samples.

During groundwater sampling activities, the Geotech™ bladder pump used for purging and sampling was cleaned before initial use and between well locations by flushing with a solution of Alconox™ detergent and potable water followed by flushing with distilled water. New bladders were also installed in the pump before initial use and between well locations. During groundwater monitoring activities, the oil/water interface probe used to measure water levels and the Horiba Water Quality Meter used for groundwater field parameter measurements were cleaned with a solution of Alconox™ detergent and potable water followed by a distilled water rinse prior to initial use and between well locations.

5.12.3 Field Quality Control Measures

Two field duplicate soil samples were collected by Pinchin during the Phase Two ESA for analysis of one or more of the COPCs. The frequency of field duplicate soil sample analysis complied with the requirement that one field duplicate soil sample is analyzed for every ten regular soil samples submitted for analysis of the COPCs. The soil sample field duplicate pairings and corresponding analytical schedules are summarized as follows:

- Soil sample BH-1, SS-2 and its corresponding field duplicate "DUP-1" were submitted for laboratory analysis of metals.



- Soil sample MW-5, SS-6 and its corresponding field duplicate “DUP-2” were submitted for laboratory analysis of VOCs, PHCs, and PAHs.

One field duplicate groundwater sample was collected by Pinchin during the Phase Two ESA for analysis of VOCs. The groundwater sample field duplicate pairing and corresponding analytical schedules are summarized as follows:

- Groundwater sample MW-5 and its corresponding field duplicate “DUP-3” were submitted for laboratory analysis of VOCs.

One laboratory-prepared trip blank was analyzed for VOC parameters to comply with the requirement that one trip blank is analyzed for each submission of groundwater samples for VOC parameter analysis.

The calibrations of the RKI Eagle 2™ CGI used for field screening and the Horiba Water Quality Meter used for water quality parameter measurements were checked by the equipment supplier (Maxim) prior to use in the field by Pinchin.

Maxim completed the calibration checks in accordance with the equipment manufacturers' specifications and/or Maxim's SOPs.

5.12.4 QA/QC Sampling Program Deviations

There were no deviations from the QA/QC sampling program outlined in the SAP.

6.0 REVIEW AND EVALUATION

6.1 Geology

Based on the stratigraphic information obtained from the soil samples recovered during the drilling activities completed as part of the Phase Two ESA, the grassed surface at the Phase Two Property is underlain by granular soil fill materials to a maximum depth of approximately 2.4 mbgs. The native soil underlying the surficial soil fill materials is generally comprised of silty clay and to a depth ranging from approximately 2.4 mbgs to 7.6 mbgs. The water table is located within this unit at a depth of approximately 3 to 4 mbgs and this uppermost water bearing unit represents an unconfined aquifer.

The overburden/bedrock interface was not encountered during the drilling activities. Based on geological data published by the Ontario Geological Survey, bedrock is expected to consist of sedimentary rocks consisting of limestone, dolomite, shale, argillite, sandstone, quartzite, and/or grit.



6.2 Groundwater Elevations and Flow Direction

The wells screens in each monitoring well installed by Pinchin were of a consistent length (i.e., 3.05 metres). All monitoring wells were installed at depth intervals intended to investigate groundwater quality in the shallow groundwater zone within the unconfined aquifer. Given that PHCs were a COPC for groundwater at the Phase Two Property, the monitoring wells were installed at the Phase Two Property such that the well screens intersected the water table.

The surveyed top of well riser pipe elevations were utilized in conjunction with the measured depths to groundwater to calculate the groundwater level elevation data. The measured depths to groundwater and calculated groundwater elevation measurements, and the results of NAPL monitoring for the monitoring event is summarized in Tables 3 and 4, respectively.

The water table elevations calculated using the water level measurements made on August 23, 2021 show that groundwater flow at the Site is inferred to be towards the northeast in the unconfined aquifer; however, Pinchin notes that groundwater conditions may not have been at equilibrium at the time of the water level measurements.

6.3 Fine-Medium Soil Texture

One soil sample collected from the boreholes advanced at the Phase Two Property was submitted for 75 micron single-sieve grain size analysis. The soil sample selected for analysis were considered to be representative of the Site.

Based on these grain size analysis results and the observed stratigraphy at the borehole locations at the Phase Two Property, it is the QP's opinion that over two-thirds of the overburden at the Phase Two Property is medium and fine-textured as defined by O. Reg. 153/04. Therefore, the soil at the Phase Two Property was interpreted to be medium and fine-textured for the purpose of determining the MECP Site Condition Standards applicable to the Phase Two Property.

6.4 Soil Field Screening

Soil vapour headspace concentrations measured in the soil samples collected as part of this Phase Two ESA are presented in the borehole logs. Soil vapour headspace values measured with the CGI in methane elimination mode did not range above 0 ppm by volume (ppm_v) in any of collected soil samples. Soil vapour headspace values measured with the PID did not range above 0.0 ppm_v in any of collected soil samples.



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

6.5 Soil Quality

A total of six boreholes were advanced at the Phase Two Property at the locations shown on Figure 5 in order to assess for the presence of subsurface impacts resulting from the APECs identified in the Pinchin Phase One ESA. Select soil samples were collected from each of the advanced boreholes and submitted for laboratory analysis of the COPCs. The soil sample locations, depths and laboratory analyses are summarized in Table 1 and in the borehole logs.

The soil sample analytical results were compared to the *Table 3 Standards* and the following subsections provide a discussion of the findings.

6.5.1 VOCs

The soil sample analytical results for VOCs, along with the corresponding *Table 3 Standards*, are presented in Table 6. As indicated in Table 6, all reported concentrations of VOCs in the soil samples submitted for analysis were below the *Table 3 Standards*.

6.5.2 PHCs F1-F4

The soil sample analytical results for PHCs F1-F4, along with the corresponding *Table 3 Standards*, are presented in Table 5. As indicated in Table 5, all reported concentrations of PHCs F1- F4 in the soil samples submitted for analysis were below the *Table 3 Standards*.

6.5.3 PAHs

The soil sample analytical results for PAHs, along with the corresponding *Table 3 Standards*, are presented in Table 7. As indicated in Table 7, all reported concentrations of PAHs in the soil samples submitted for analysis were below the *Table 3 Standards*.

6.5.4 Metals and Inorganics

The soil sample analytical results for metals and inorganics parameters, along with the corresponding *Table 3 Standards*, are presented in Table 8. As indicated in Table 8, all reported concentrations of metals and inorganics in the soil samples submitted for analysis were below the *Table 3 Standards*.

6.5.5 General Comments on Soil Quality

The soil sample results show no evidence of chemical or biological transformations of chemical parameters in the subsurface.

6.6 Groundwater Quality

Groundwater samples were collected from monitoring wells MW-2, MW-5 and MW-6 and submitted for analysis of the COPCs to assess for the presence of subsurface impacts within the APECs identified in the Pinchin Phase One ESA. The locations of the monitoring wells are shown on Figure 5.

The groundwater sample analytical results were compared to the *Table 3 Standards* and the following subsections provide a discussion of the findings.

6.6.1 VOCs

The groundwater analytical results for VOCs, along with the corresponding *Table 3 Standards*, are presented in Table 10. As indicated in Table 10, all reported concentrations of VOCs in the groundwater samples submitted for analysis were below the *Table 3 Standards*.

6.6.2 PHCs F1-F4

The groundwater analytical results for PHCs F1-F4, along with the corresponding *Table 3 Standards*, are presented in Table 9. As indicated in Table 9, all reported concentrations of PHCs F1-F4 in the groundwater samples submitted for analysis met the *Table 3 Standards*.

6.6.3 PAHs

The groundwater analytical results for PAHs, along with the corresponding *Table 3 Standards*, are presented in Table 11. As indicated in Table 11, all reported concentrations of PAHs in the groundwater samples submitted for analysis met the *Table 3 Standards*.

6.6.4 General Comments on Groundwater Quality

The groundwater sample results show no evidence of chemical or biological transformations of chemical parameters in the subsurface.

6.7 Sediment Quality

Sediment sampling was not completed as part of this Phase Two ESA.

6.8 Quality Assurance and Quality Control Results

QA/QC comprises technical activities that are used to measure or assess the effect of errors or variability in sampling and analysis. It may also include specification of acceptance criteria for the data and corrective actions to be taken when they are exceeded. QA/QC also includes checks performed to evaluate laboratory analytical quality, checks designed to assess the combined influence of field sampling and laboratory analysis and checks to specifically evaluate the potential for cross contamination during sampling and sample handling.



The QA/QC samples collected and submitted for analysis by Pinchin during the Phase Two ESA consisted of the following:

- Field duplicate soil and groundwater samples to assess the suitability of field sampling methods and laboratory performance.
- A trip blank water sample to assess whether ambient conditions during transport of groundwater sample containers from the analytical laboratory to the Phase Two Property and back to the analytical laboratory may have biased the groundwater sample results with respect to volatile constituents.

In addition to the above, laboratory quality control activities and sample checks employed by Paracel included:

- Method blanks - where a clean sample is processed simultaneously with and under the same conditions (i.e., using the same reagents and solvents) as the samples being analyzed. These are used to confirm whether the instrument, reagents and solvents used are contaminant free.
- Laboratory duplicates - where two samples obtained from the sample container are analyzed. These are used to evaluate laboratory precision.
- Surrogate spike samples - where a known mass of compound not found in nature (e.g., deuterated compounds such as toluene-d8) but that has similar characteristics to the analyzed compounds is added to a sample at a known concentration. These are used to assess the recovery efficiency.
- Matrix spike samples - where a known mass of target analyte is added to a matrix sample with known concentrations. These are used to evaluate the influence of the matrix on a method's recovery efficiency.
- Use of standard or certified reference materials - a reference material where the content or concentration has been established to a very high level of certainty (usually by a national regulatory agency). These are used to assess accuracy.

The results of the field QA/QC samples are discussed in the following subsections.

6.8.1 Soil Duplicate Results

During borehole soil sampling activities, a total of two separate soil duplicate sample pairs were submitted for laboratory analysis. The field duplicate samples were collected by vertically splitting the soil cores into two halves, with one half collected as the regular sample and the other half collected as the field duplicate sample. The sample pairings and corresponding laboratory analyses are as follows:

- Soil sample BH-1, SS-2 and its corresponding field duplicate “DUP-1” were submitted for laboratory analysis of metals.
- Soil sample MW-5, SS-6 and its corresponding field duplicate “DUP-2” were submitted for laboratory analysis of VOCs, PHCs, and PAHs.

The quality of the analytical results was evaluated by calculating relative percent differences (RPDs) for the parameters analyzed for the original and field duplicate samples. The RPD for each parameter was calculated using the following equation:

$$\text{RPD} = \frac{(\text{Original Concentration} - \text{Duplicate Concentration}) \times 100}{(\text{Original Concentration} + \text{Duplicate Concentration})/2}$$

An RPD was not calculated unless the parameter concentration in both the original and duplicate sample had detectable concentrations above the corresponding practical quantitation limit for the parameter, which is equal to five times the lowest laboratory reportable detection limit (RDL).

The calculated RPDs for the original and field duplicate soil samples have been compared to performance standards provided in the *Analytical Protocol*. Pinchin notes that although these performance standards only strictly apply to laboratory duplicate samples, they have been considered suitable for comparison to the field duplicate soil sample results as well.

Each of the calculated RPDs met the corresponding performance standards.

Based on Pinchin’s review of the calculated RPD values for the submitted soil sample duplicate pairings, the level of observed variance in the reported analytical results is considered acceptable for the purpose of meeting the data quality objectives of this Phase Two ESA.

6.8.2 Groundwater Sample Duplicate Results

During groundwater sampling activities, one groundwater duplicate sample pair, consisting of groundwater sample “MW-5” and its corresponding field duplicate “DUP-3”, were submitted for laboratory analysis of VOCs.



The calculated RPDs for the original and field duplicate groundwater samples have been compared to performance standards provided in the *Analytical Protocol*. Pinchin notes that although these performance standards only strictly apply to laboratory duplicate samples, they have been considered suitable for comparison to the field duplicate groundwater sample results as well.

Each of the calculated RPDs met the corresponding performance standard.

Based on Pinchin's review of the calculated RPD values for the submitted groundwater sample duplicate pairing, the level of observed variance in the reported analytical results is considered acceptable for the purpose of meeting the data quality objectives of this Phase Two ESA.

6.8.3 Groundwater Trip Blank Results

A trip blank sample, consisting of VOC-free water contained within a set of VOC sample vials, was prepared by Paracel and accompanied the VOC groundwater sample containers during transportation to the Phase Two Property and was stored in the cooler with the VOC groundwater samples in the field and during transportation back to Paracel. The trip blank sample was submitted to Paracel for chemical analysis for VOCs during the groundwater sampling activities completed as part of this Phase Two ESA.

As indicated in Table 10, the concentrations of the VOC parameters analyzed in the trip blank sample were below the laboratory RDLs. These findings indicate that ambient conditions during the transportation of the sample containers to and from the Phase Two Property, and during groundwater sampling, did not positively bias the VOCs parameter analytical results for the groundwater samples.

6.8.4 Deviations from Analytical Protocol

There were no deviations from the holding times, preservation methods, storage requirements and container types specified in the *Analytical Protocol* during the completion of the Phase Two ESA.

6.8.5 QA/QC Sample Summary

The overall evaluation of the QA/QC sample results indicates no issues with respect to field collection methods and laboratory performance, and no apparent bias due to ambient conditions at the Phase Two Property and during transportation of the sample containers/samples to and from the analytical laboratory.

As such, it is the QP's opinion that the soil and groundwater analytical data obtained during the Phase Two ESA are representative of actual Site conditions and are appropriate for meeting the objective of assessing whether the soil and groundwater at the Phase Two Property meets the applicable MECP Site Condition Standards.

6.9 Phase Two Conceptual Site Model

This Phase Two ESA was completed for the property located at the municipal address of 2025 and 2035 Othello Avenue, Ottawa, Ontario. A Key Map showing the Phase Two Property location is provided on Figure 1 and a detailed plan of the Phase Two Property and surrounding lands is provided on Figure 2.

A Phase One CSM was created during the Pinchin Phase One ESA in order to provide a detailed visualization of the APECs which could occur on, in, under, or affecting the Phase Two Property. The Phase One CSM is summarized in Figures 1 through 6, which illustrate the following features within the Phase One Study Area, where present:

- Existing buildings and structures.
- Water bodies located in whole or in part within the Phase One Study Area.
- Areas of natural significance located in whole or in part within the Phase One Study Area.
- Drinking water wells located at the Phase One Property.
- Land use of adjacent properties.
- Roads within the Phase One Study Area.
- PCAs within the Phase One Study Area, including the locations of tanks.
- APECs at the Phase One Property.

The following subsections expand on the Phase One CSM with the information collected during the completion of the Phase Two ESA.

6.9.1 Potentially Contaminating Activities

A total of eight PCAs were identified within the Phase One Study Area, consisting of three PCAs at the Phase Two Property and five PCAs within the Phase One Study Area, outside of the Phase One Property. Of the on-Site PCAs, only the fill material of unknown quality is considered an APEC for the Phase Two Property, however, it is Pinchin's opinion that this can be addressed at the time of redevelopment.

6.9.2 Areas of Potential Environmental Concern

Five areas of potential environmental concern (APECs) and related potentially contaminating activities (PCAs) and contaminants of potential concern (COPCs) were identified in a Phase One ESA completed by Pinchin in accordance with O. Reg.

The following table summarizes the APECs identified during the Phase One ESA, as well as the respective PCA, contaminants of potential concern (COPCs) and the media which could potentially be impacted:

Area of Potential Environmental Concern	Location of Area of Potential Environmental Concern on Phase One Property	Potentially Contaminating Activity	Location of PCA (On-Site or Off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, Soil and/or Sediment)
APEC #1 (On-Site fill material of unknown quality)	Along the east boundary of the Phase One Property, within the former swimming pool area east of Site Building B, and inferred to be present throughout the Phase One Property.	Item 30 – Importation of Fill Material of Unknown Quality	On-Site	PAHs Metals As, Sb, Se B-HWS Cr (VI) Hg CN ⁻	Soil
APEC #2 (Former RFO located at 2013 St. Laurent Boulevard)	Along the east boundary of the Phase One Property.	Item 28 – Gasoline and Associated Products Storage in Fixed Tanks	Off-Site (east)	PHCs BTEX PAHs	Groundwater
APEC #3 (Automotive repair/servicing operation located at 2013 St. Laurent Boulevard)	Along the east boundary of the Phase One Property.	Item 29 – Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles	Off-Site (east)	PHCs BTEX VOCs PAHs Metals	Groundwater
APEC #4 (RFO located at 1034 Pleasant Park Road)	Along the south boundary of the Phase One Property.	Item 28 – Gasoline and Associated Products Storage in Fixed Tanks	Off-Site (south)	PHCs BTEX PAHs	Groundwater



Area of Potential Environmental Concern	Location of Area of Potential Environmental Concern on Phase One Property	Potentially Contaminating Activity	Location of PCA (On-Site or Off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, Soil and/or Sediment)
APEC #5 (Automotive repair/servicing operation located at 1030 Pleasant Park Road)	Along the south boundary of the Phase One Property.	Item 29 – Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles	Off-Site (south)	PHCs BTEX VOCs PAHs Metals	Groundwater

Notes:

VOCs – volatile organic compounds

PAHs – polycyclic aromatic hydrocarbons

6.9.3 Subsurface Structures and Utilities

Underground utilities which are known or inferred to be present at the Phase Two Property include natural gas lines, hydro lines, water and telecommunication lines located along the south and east portions of the Phase Two Property along the east and south portions of the Phase Two Property.

Interaction of the groundwater at the Phase Two Property with buried utilities is possible given that the water table in some areas of the Phase Two Property is located at approximate depths of between 3 and 4 mbgs and the utilities are known to be located at depths ranging from approximately 2 to 3 mbgs. However, given that no groundwater impacts were identified at the Phase Two Property, preferential migration of contaminants along utilities is not considered to be a concern.

6.9.4 Physical Setting

Based on the work completed as part of this Phase Two ESA, the following subsections provide a summary of the physical setting of the Phase Two Property.

Stratigraphy

The soil stratigraphy at the drilling locations generally consists of fill material comprised of sand and gravel, and trace silt with organic material underlain by silty clay and clay to a maximum depth of approximately 7.6 mbgs. The borehole locations are shown on Figure 5.



Hydrogeological Characteristics

The groundwater flow direction in the unconfined aquifer at the Phase Two Property is inferred to be towards the northeast based on measurements made on groundwater levels on August 23, 2021 and elevation survey completed August 27, 2021.

Depth to Bedrock

Bedrock was not encountered at any of the borehole locations up to the maximum depth drilled of approximately 7.6 mbgs and based on the available water well records, bedrock depth at the Phase Two Property is greater than 10 mbgs.

Depth to Water Table

The water table at the Phase Two Property is located primarily within the shallow silty clay unit that has been interpreted to be an unconfined aquifer. The depth to the water table across the Phase Two Property ranges from approximately 3 to 4 mbgs.

Applicability of Section 35 of O. Reg. 153/04 – Non-Potable Site Condition Standards

Site Condition Standards for non-potable groundwater use have been applied to the Phase Two Property given that the following conditions specified in Section 35 of O. Reg. 153/04 have been met:

- The Phase Two Property and all properties within 250 metres of the Phase Two Property are supplied by a municipal drinking water system.
- The Phase Two Property is not located within a well head protection area or other designation identified by the City of Ottawa for the protection of groundwater.
- There are no wells located at the Phase Two Property or within the Phase One Study Area that are used or intended for use as a water source for human consumption or agriculture.
- The City of Ottawa has been advised in writing of the intention to use non-potable Site Condition Standards at the Phase Two Property and a response was not received within 30 days of submitting the notification.

Applicability of Section 41 of O. Reg. 153/04 – Environmentally Sensitive Area

Section 41 of O. Reg. 153/04 states that a property is classified as an “environmentally sensitive area” if the property is within an area of natural significance, the property includes or is adjacent to an area of natural significance or part of such an area, the property includes land that is within 30 m of an area of natural significance or part of such an area, the soil at the property has a pH value for surface soil less



than 5 or greater than 9 or the soil at the property has a pH value for subsurface soil less than 5 or greater than 11.

The Phase Two Property is not located in or adjacent to, nor does it contain land within 30 m of, an area of natural significance. Furthermore, the pH values measured in the submitted soil samples were within the limits for non-sensitive sites. As such, the Phase Two Property is not an environmentally sensitive area as defined by Section 41 of O. Reg. 153/04.

Applicability of Section 43.1 of O. Reg 153/04 – Shallow Soil Property and Proximity to a Water Body

Section 43.1 of O. Reg. 153/04 states that a property is classified as a “shallow soil property” if one-third or more of the area consists of soil less than 2 m in depth.

Bedrock was not encountered at any of the borehole locations. As such, the Phase Two Property is not a shallow soil property as defined by Section 43.1 of O. Reg. 153/04.

As per Section 43.1 of O. Reg. 153/04, the proximity of the Phase Two Property to a water body must be considered when selecting the appropriate Site Condition Standards.

The Phase Two Property does not include all or part of a water body, it is not adjacent to a water body and it does not include land within 30 m of a water body. As such, Site Condition Standards for use within 30 m of a water body were not applied.

Soil Imported to Phase Two Property

No soil was imported to the Phase Two Property during completion of the Phase Two ESA.

Proposed Buildings and Other Structures

Pinchin understands that the future use of the Phase Two Property will be remain residential, however additional multi-tenant residential buildings are proposed.

6.9.5 Applicable Site Condition Standards

Based on the grain size analysis of representative soil samples collected during the Phase Two ESA and the observed stratigraphy at the borehole locations, Pinchin concluded that over two-thirds of the overburden at the Phase Two Property is medium and fine-textured as defined by O. Reg. 153/04 and Site Condition Standards for coarse-textured soil were not applied.



Based on the information obtained from the Phase One and Two ESAs, the appropriate Site Condition Standards for the Phase Two Property are:

- “Table 3: Full Depth Generic Site Condition Standards for Use in a Potable Ground Water Condition”, provided in the Ontario Ministry of the Environment, Conservation and Parks (MECP) document entitled, “Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act” dated April 15, 2011 (*Table 3 Standards*) for:
 - Medium/fine-textured soils; and
 - Residential/parkland/institutional property use.

6.9.6 *Contaminants Exceeding Applicable Site Condition Standards in Soil*

All soil samples collected during the Phase Two ESA met the applicable *Table 3 Standards* for the parameters analyzed.

6.9.7 *Contaminants Exceeding Applicable Site Condition Standards in Groundwater*

All groundwater samples collected during the Phase Two ESA met the applicable *Table 3 Standards* for the parameters analyzed.

6.9.8 *Meteorological and Climatic Conditions*

The groundwater table was observed to fluctuate slightly in elevation (i.e., a maximum difference of 30 centimetres) over two rounds of groundwater monitoring completed on August 17, 2020 and August 23, 2021 and October 14, 2020. The minor temporal groundwater table fluctuations are expected to have had a minimal effect on contaminant distribution throughout the Phase Two Property. As such, it is the QP's opinion that meteorological or climatic conditions have not influenced the distribution or migration of the contaminants at the Phase Two Property.

6.9.9 *Soil Vapour Intrusion*

No volatile parameters were identified at concentrations exceeding the *Table 3 Standards*. As such, soil vapour intrusion into buildings at the Phase Two Property is not considered a concern.

6.9.10 *Contaminant Exposure Assessment*

Given that all soil and groundwater samples collected during the Phase Two ESA met the applicable *Table 3 Standards*, Pinchin considered that an evaluation of potential exposure pathways and receptors was unnecessary.



6.9.11 Applicability of Section 49.1 Exemptions

The Phase One Property has a paved parking area located around the perimeters of the Site Buildings. According to the Site Representative, salt has historically been applied to the parking area for safety reasons during winter conditions to remove snow and ice. It is the opinion of the QP_{ESA} supervising the Phase One ESA that, although salt-related parameters such as Sodium Adsorption Ratio and electrical conductivity in soil and sodium and chloride in groundwater may be present at concentrations exceeding the applicable Site Condition Standards (i.e., Table 3), the exemption provided in Section 49.1 of O. Reg. 153/04 can be applied. As such, these parameters would be deemed to meet the Site Condition Standards and were not assessed as part of this Phase Two ESA.

7.0 CONCLUSIONS

Pinchin completed a Phase Two ESA at the Phase Two Property in accordance with the requirements stipulated in O. Reg. 153/04 for the purpose of an SPA with the City of Ottawa. The SPA is required by the Client in relation to the potential future development of the Phase Two Property with additional residential buildings.

The Phase Two ESA completed by Pinchin included the advancement of six boreholes at the Phase Two Property, with three being completed as groundwater monitoring wells.

Based on Site-specific information, the applicable regulatory standards for the Phase Two Property were determined to be the *Table 3 Standards* for residential land use and medium and fine-textured soils. Soil and groundwater samples were collected from each of the borehole locations and submitted for laboratory analysis of VOCs, PHCs, PAHs, and metals.

It is the opinion of the Qualified Person (QP) who supervised the Phase Two ESA that the applicable *Table 3 Standards* for soil and groundwater at the Phase Two Property have been met, and that no further subsurface investigation is required in relation to assessing the APECs at the Phase Two Property.

7.1 Signatures

This Phase Two ESA was undertaken under the supervision of Scott Mather, P.Eng., QP_{ESA} in accordance with the requirements of O. Reg. 153/04 to support the filing of an SPA for the Phase Two Property.



7.2 Terms and Limitations

This Phase Two ESA was performed for Osgoode Properties Ltd. (Client) in order to investigate potential environmental impacts at 2025 and 2035 Othello Avenue, 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 Two 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 Two 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 Two ESA was performed in general compliance with currently acceptable practices for environmental site investigations, and specific Client requests, as applicable to this Site.

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.

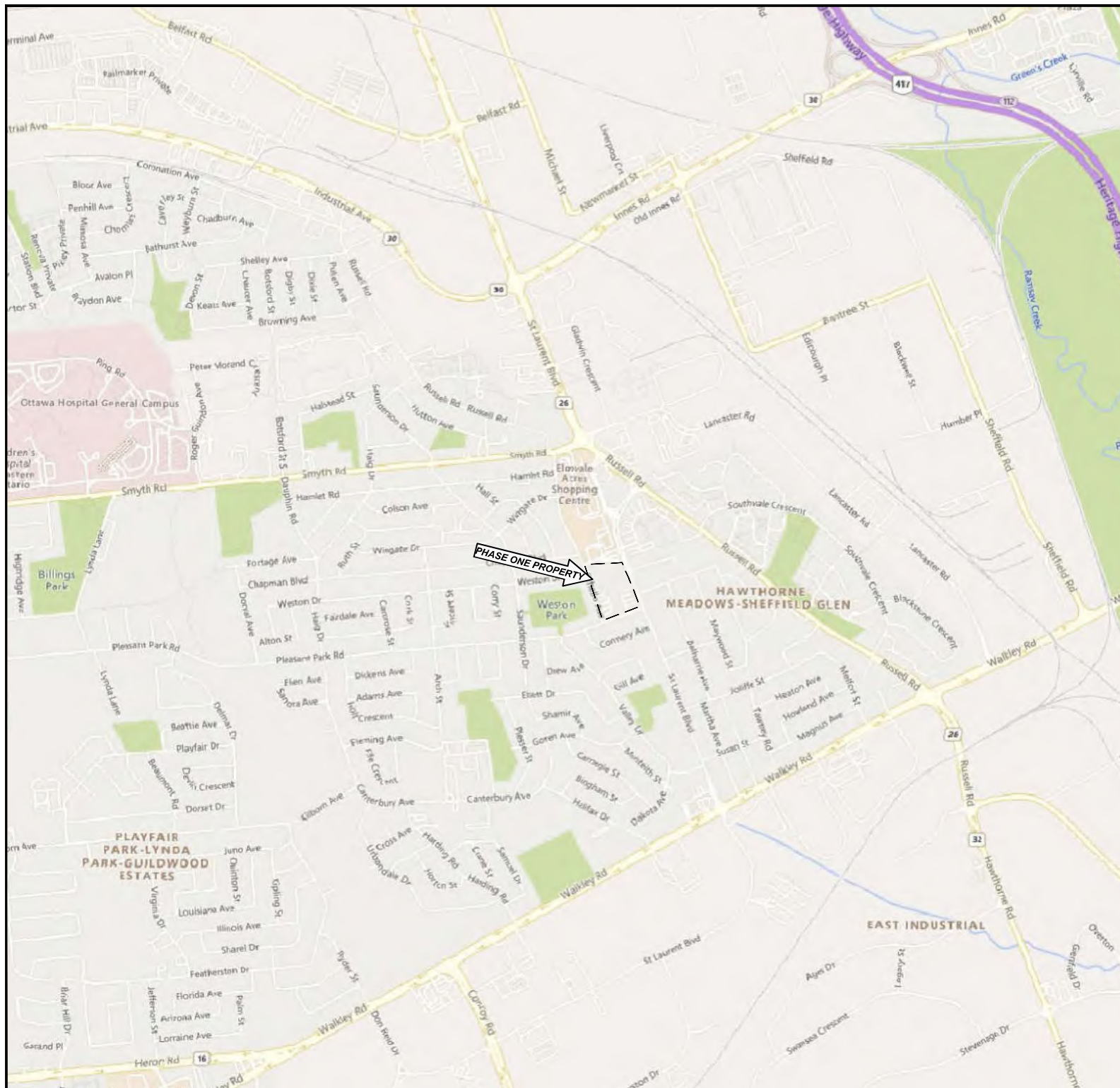


8.0 REFERENCES

The following documents provided information used in this report:

- *"Phase I Environmental Site Assessment, 2025 and 2035 Othello Avenue, Ottawa, Ontario"* prepared by AGRA Earth and Environmental Limited (AGRA) for Osgoode Properties Limited, and dated August 2000.
- *"Phase II Environmental Site Assessment, 2025 and 2035 Othello Avenue, Ottawa, Ontario"* prepared by AGRA for Osgoode Properties, and dated August 2000.
- *"Phase I Environmental Site Assessment, Pleasant Park Place Apartments, 2025 and 2035 Othello Avenue, Ottawa, Ontario"* prepared by Pinchin for Osgoode Properties, and dated October 21, 2010.
- Association of Professional Geoscientists of Ontario. Guidance for Environmental Site Assessments under Ontario Regulation 153/04 (as amended). April 2011.
- Ontario Ministry of the Environment. Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario. December 1996.
- Ontario Ministry of the Environment. Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. March 9, 2004 amended July 1, 2011.
- Ontario Ministry of the Environment. Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act. April 15, 2011.
- Pinchin Ltd. Phase One Environmental Site Assessment, 2025 and 2035 Othello Avenue, Ottawa, Ontario. Prepared for Client., July 6, 2021.
- Province of Ontario. Environmental Protection Act, R.S.O 1990, Chapter E.19.
- Province of Ontario. R.R.O. 1990, Regulation 347, General – Waste Management, as amended by Ontario Regulation 234/11.
- Province of Ontario. Ontario Regulation 153/04: Records of Site Condition – Part XV.1 of the Act. Last amended by Ontario Regulation 274/20 on July 1, 2020.
- U.S. Environmental Protection Agency - Region 1. Low Stress (Low Flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells. Revised January 19, 2010.

9.0 FIGURES AND TABLES



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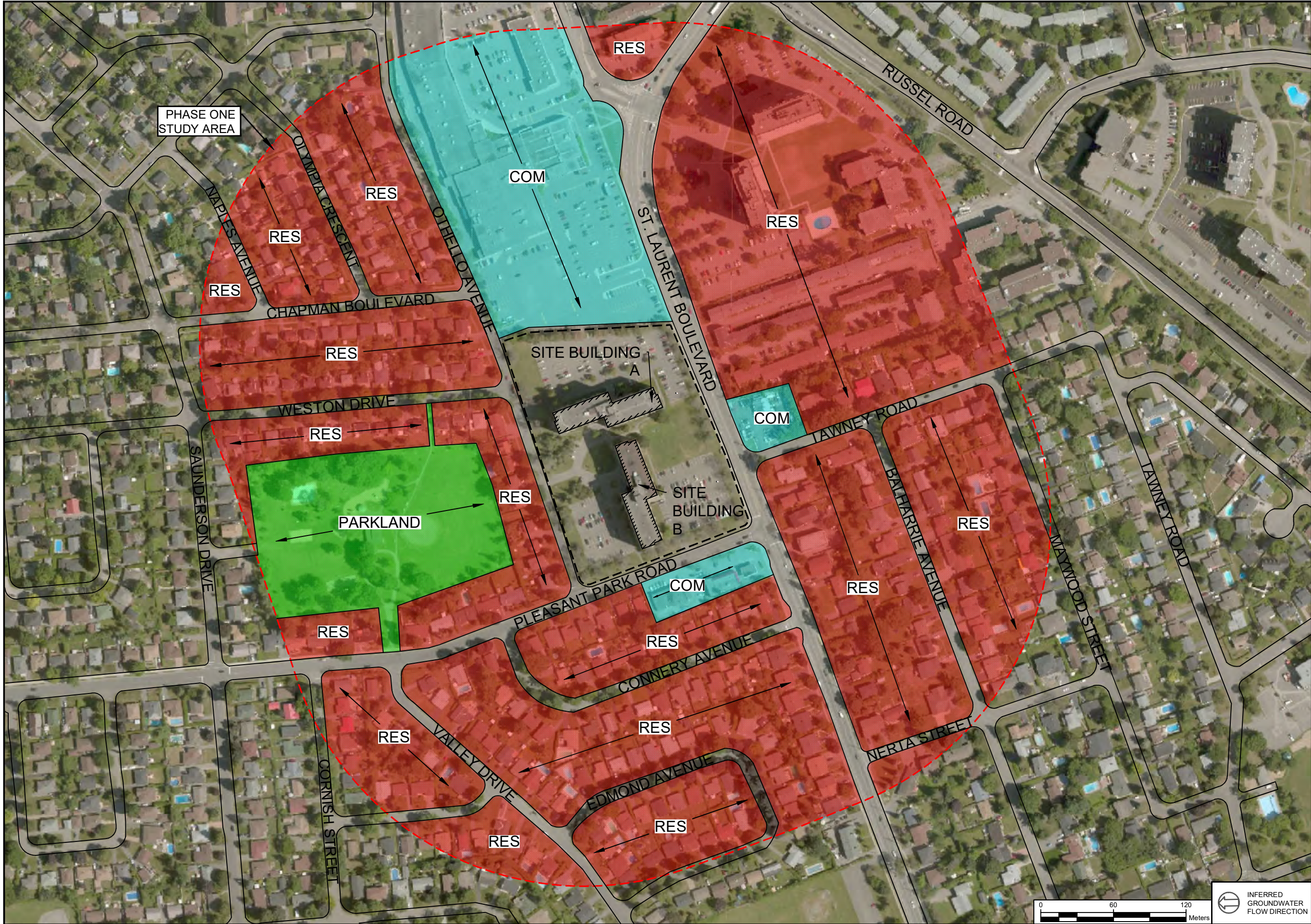
PROJECT NAME: **PHASE TWO
ENVIRONMENTAL SITE
ASSESSMENT**

CLIENT NAME:
OSGOODE PROPERTIES

PROJECT LOCATION:
**2025 AND 2035 OTHELLO
AVENUE, OTTAWA, ONTARIO**

FIGURE NAME:
KEY MAP

PROJECT NUMBER: 290064.002	SCALE: 1:20000
DRAWN BY: DM	REVIEWED BY: MK
DATE: SEPT. 2021	FIGURE NUMBER: 1

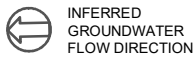


- LEGEND
- PHASE ONE PROPERTY BOUNDARY
 - PHASE ONE STUDY AREA
 - SITE BUILDING
 - RES RESIDENTIAL
 - COM COMMERCIAL
 - RESIDENTIAL
 - COMMERCIAL
 - PARKLAND

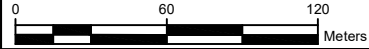
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PROJECT NAME: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT	
CLIENT NAME: OSGOODE PROPERTIES	
PROJECT LOCATION: 2025 AND 2035 OTHELLO AVENUE, OTTAWA, ONTARIO	
FIGURE NAME: PHASE ONE STUDY AREA	
PROJECT NUMBER: 290064.002	SCALE: 1:3000
DRAWN BY: DM	REVIEWED BY: MK
DATE: SEPT. 2021	FIGURE NUMBER: 2



INFERRED
GROUNDWATER
FLOW DIRECTION





LEGEND	
	PHASE ONE PROPERTY BOUNDARY
	SITE BUILDING
RES	RESIDENTIAL
COM	COMMERCIAL
MTR	MULTI-TENANT RESIDENTIAL
RFO	RETAIL FUEL OUTLET
	PARKING
PCA	POTENTIALLY CONTAMINATING ACTIVITY
	PCA
	BOREHOLE (DAMAGED)

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PROJECT NAME: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT	
CLIENT NAME: OSGOODE PROPERTIES	
PROJECT LOCATION: 2025 AND 2035 OTHELLO AVENUE, OTTAWA, ONTARIO	
FIGURE NAME: POTENTIALLY CONTAMINATING ACTIVITIES	
PROJECT NUMBER: 290064.002	SCALE: 1:1250
DRAWN BY: DM	REVIEWED BY: MK
DATE: SEPT. 2021	FIGURE NUMBER: 3





LEGEND

- PHASE ONE PROPERTY BOUNDARY
- PHASE ONE STUDY AREA
- SITE BUILDING
- RES RESIDENTIAL
- COM COMMERCIAL
- RESIDENTIAL
- COMMERCIAL
- PARKLAND
- APEC AREA OF POTENTIALLY ENVIRONMENTAL CONCERN
- PCA POTENTIALLY CONTAMINATING ACTIVITY
- PCA CONTRIBUTES TO AN APEC
- PCA DOES NOT CONTRIBUTE TO AN APEC
- BOREHOLE (DAMAGED)

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PROJECT NAME: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT

CLIENT NAME: OSGOODE PROPERTIES

PROJECT LOCATION: 2025 AND 2035 OTHELLO AVENUE, OTTAWA, ONTARIO

FIGURE NAME: AREAS OF POTENTIAL ENVIRONMENTAL CONCERN

PROJECT NUMBER: 290064.002	SCALE: 1:3000
DRAWN BY: DM	REVIEWED BY: MK
DATE: SEPT. 2021	FIGURE NUMBER: 4



INFERRED GROUNDWATER FLOW DIRECTION



- LEGEND**
- PHASE ONE PROPERTY BOUNDARY
 - //// SITE BUILDING
 - ⊗ BOREHOLE (DAMAGED)
 - ⊙ BOREHOLE
 - ⊕ MONITORING WELL

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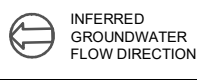
PROJECT NAME:
PHASE TWO
ENVIRONMENTAL SITE
ASSESSMENT

CLIENT NAME:
OSGOODE PROPERTIES

PROJECT LOCATION:
2025 AND 2035 OTHELLO
AVENUE, OTTAWA, ONTARIO

FIGURE NAME:
BOREHOLE AND MONITORING
WELL LOCATION PLAN

PROJECT NUMBER: 290064.002	SCALE: 1:1250
DRAWN BY: DM	REVIEWED BY: MK
DATE: SEPT. 2021	FIGURE NUMBER: 5



INFERRED
GROUNDWATER
FLOW DIRECTION

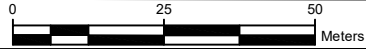


TABLE 1
SAMPLES SUBMITTED FOR LABORATORY ANALYSIS
Osgoode Properties
2025 and 2035 Othello Avenue, Ottawa, Ontario

Samples		Parameters												Rationale/Notes		
Borehole / Monitoring Well ID	Sample ID	SOIL SAMPLES	PHCs (F1-F4) & BTEX	VOCs	PAHs	Metals	pH	Grain Size Analysis	GROUNDWATER SAMPLES	PHCs (F1-F4)	PHCs (F1-F4) & BTEX	VOCs	PAHs		Metals	
BH-1	SS-2		●	●	●	●	●									Assess soil quality at the former pool area for fill of unknown quality (APEC 1)/Confirm applicable MECP Standards.
MW-2	SS-8		●	●	●		●	●								Assess soil and groundwater quality in relation to off-Site automotive repair facility and former RFO (APECs 2 and 3)/Confirm applicable MECP Standards.
	MW-2										●	●	●	●		
BH-3	SS-5		●	●	●											Assess soil quality in relation to off-Site automotive repair facility and former RFO (APECs 2 and 3).
BH-4	SS-1		●	●	●	●										Assess soil quality for fill of unknown quality on the east portion of the Site (APEC 1).
MW-5	SS-6		●	●	●		●									Assess soil and groundwater quality in relation to off-Site RFO (APEC 4)/Confirm applicable MECP Standards.
	MW-5										●	●	●	●		
MW-6	SS-2					●	●	●								Assess soil quality for fill of unknown quality on the southeast portion of the Site (APEC 1)/Confirm applicable MECP Standards.
	SS-6		●	●	●											Assess soil and groundwater quality in relation to off-Site automotive repair facility (APEC 5).
	MW-6								●	●	●	●				

Notes:

PHCs (F1-F4) Petroleum Hydrocarbons (Fraction 1 to Fraction 4)
 BTEX Benzene, Toluene, Ethylbenzene, and Xylenes
 PCBs Polychlorinated Biphenyls
 VOCs Volatile Organic Compounds
 FOC Fraction of Organic Carbon
 PAHs Polycyclic Aromatic Hydrocarbons
 APEC Area of Potential Environmental Concern
 mbgs Metres Below Ground Surface
 MECP Ontario Ministry of the Environment, Conservation and Parks

TABLE 2
pH AND GRAIN SIZE ANALYSIS FOR SOIL
Osgoode Properties
2025 and 2035 Othello Avenue, Ottawa, Ontario

<i>Parameter</i>	<i>Units</i>	<i>MECP Site Condition Standard Selection Criteria</i>	<i>Sample Designation</i>			
			<i>Sample Collection Date (dd/mm/yyyy)</i>			
			<i>Sample Depth (mbgs)</i>			
			<i>BH-1 SS-2</i>	<i>MW-2 SS-8</i>	<i>MW-5 SS-6</i>	<i>MW-6 SS-2</i>
			13/08/2021	13/08/2021	13/08/2021	13/08/2021
			<i>0.5 - 1.2</i>	<i>5.3 - 6.1</i>	<i>3.8 - 4.6</i>	<i>0.5 - 1.2</i>
			<i>Surface</i>	<i>Sub-surface</i>	<i>Sub-surface</i>	<i>Surface</i>
pH		Surface: 5 < pH < 9 Subsurface: 5 < pH < 11	10.03	8.24	8.61	7.63
Sieve #200 <0.075 mm	%	50%	NA	98	NA	NA
Sieve #200 >0.075 mm	%	50%	NA	2	NA	NA
Grain Size Classification			NA	MEDIUM/FINE	NA	NA

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
Osgoode Properties
2025 and 2035 Othello Avenue, Ottawa, Ontario

<i>Well Number</i>	<i>Surveyed TOC Elevation (mREL)</i>	<i>Surveyed Ground Elevation (mREL)</i>	<i>Calculated Difference Between Ground and TOC (m)</i>	<i>Length of Screen (m)</i>
MW-2	101.69	101.83	-0.14	3.05
MW-5	101.11	101.28	-0.17	3.05
MW-6	100.87	100.98	-0.11	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
Osgoode Properties
2025 and 2035 Othello Avenue, Ottawa, Ontario

<i>Well Number</i>	<i>Date (dd/mm/yyyy)</i>	<i>NAPL Level Measurement from TOC (m)</i>	<i>Water Level Measurement from TOC (m)</i>	<i>Water Level Measurement from Ground (mbgs)</i>	<i>Product Thickness (m)</i>	<i>Calculated Water Level Elevation (mREL)</i>
MW-2	23/08/2021	ND	3.75	3.89	ND	97.94
MW-5	23/08/2021	ND	3.67	3.80	ND	97.48
MW-6	23/08/2021	ND	3.84	3.95	ND	97.03

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 BTEX ANALYSIS FOR SOIL
Osgoode Properties
2025 and 2035 Othello Avenue, Ottawa, Ontario

<i>Parameter</i>	<i>MECP Table 3 Standards*</i>	<i>Sample Designation</i>							
		<i>Sample Collection Date (dd/mm/yyyy)</i>							
		<i>Sample Depth (mbgs)</i>							
		<i>BH-1 SS-2</i>	<i>MW-2 SS-8</i>	<i>BH-3 SS-5</i>	<i>BH-4 SS-1</i>	<i>MW-5 SS-6</i>	<i>DUP-2</i>	<i>MW-6 SS-2</i>	<i>MW-6 SS-6</i>
		13/08/2021	13/08/2021	13/08/2021	13/08/2021	13/08/2021	13/08/2021	13/08/2021	13/08/2021
		<i>0.8 - 1.5</i>	<i>5.3 - 6.1</i>	<i>3.1 - 3.8</i>	<i>0 - 0.8</i>	<i>3.8 - 4.6</i>	<i>3.8 - 4.6</i>	<i>0.8 - 1.5</i>	<i>3.8 - 4.6</i>
Petroleum Hydrocarbons F1 (C ₆ - C ₁₀)	65	<7	<7	<7	<7	<7	<7	<7	<7
Petroleum Hydrocarbons F2 (>C ₁₀ - C ₁₆)	150	<4	<4	<4	<4	<4	<4	<4	<4
Petroleum Hydrocarbons F3 (>C ₁₆ - C ₃₄)	1300	<8	<8	<8	46	<8	<8	<8	<8
Petroleum Hydrocarbons F4 (>C ₃₄ - C ₅₀)	5600	<6	<6	<6	23	<6	<6	<6	<6

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 Residential/Parkland/Institutional Property Use.

BOLD
BOLD

Exceeds Site Condition Standard

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 6
VOLATILE ORGANIC COMPOUND ANALYSIS FOR SOIL
Osgoode Properties
2025 and 2035 Othello Avenue, Ottawa, Ontario

Parameter	MECP Table 3 Standards*	Sample Designation						
		Sample Collection Date (dd/mm/yyyy)						
		Sample Depth (mbgs)						
		BH-1 SS-2	MW-2 SS-8	BH-3 SS-5	BH-4 SS-1	MW-5 SS-6	DUP-1	MW-6 SS-6
		13/08/2021	13/08/2021	13/08/2021	13/08/2021	13/08/2021	13/08/2021	13/08/2021
		0.8 - 1.5	5.3 - 6.1	3.1 - 3.8	0 - 0.8	3.8 - 4.6	3.8 - 4.6	3.8 - 4.6
Acetone	28	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzene	0.17	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Bromodichloromethane	13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bromoform	0.26	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bromomethane	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorobenzene	2.7	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chloroform	0.18	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibromochloromethane	9.4	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dichlorodifluoromethane	25	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	4.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	0.097	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	11	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichloroethane	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethylene	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
cis-1,2-Dichloroethylene	30	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
trans-1,2-Dichloroethylene	0.75	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichloropropane	0.085	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichloropropene, total	0.083	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	15	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylene dibromide (dibromoethane, 1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Hexane	34	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl Ethyl Ketone (2-Butanone)	44	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Methyl Isobutyl Ketone	4.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Methyl tert-butyl ether	1.4	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	0.96	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Styrene	2.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Tetrachloroethylene	2.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Toluene	6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,1-Trichloroethane	3.4	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,2-Trichloroethane	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichloroethylene	0.52	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	5.8	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	0.022	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Xylenes, total	25	<0.05	<0.05	<0.05	<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 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

TABLE 7
POLYCYCLIC AROMATIC HYDROCARBON ANALYSIS FOR SOIL
Osgoode Properties
2025 and 2035 Othello Avenue, Ottawa, Ontario

Parameter	MECP Table 3 Standards*	Sample Designation							
		Sample Collection Date (dd/mm/yyyy)							
		Sample Depth (mbgs)							
		BH-1 SS-2	MW-2 SS-8	BH-3 SS-5	BH-4 SS-1	MW-5 SS-6	DUP-2	MW-6 SS-2	MW-6 SS-6
		13/08/2021	13/08/2021	13/08/2021	13/08/2021	13/08/2021	13/08/2021	13/08/2021	13/08/2021
		0.8 - 1.5	5.3 - 6.1	3.1 - 3.8	0 - 0.8	3.8 - 4.6	3.8 - 4.6	0.8 - 1.5	3.8 - 4.6
Acenaphthene	58	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Acenaphthylene	0.17	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Anthracene	0.74	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Benzo[a]anthracene	0.63	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.05	<0.02
Benzo[a]pyrene	0.3	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.04	<0.02
Benzo[b]fluoranthene	0.78	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.05	<0.02
Benzo[g,h,i]perylene	7.8	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02
Benzo[k]fluoranthene	0.78	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02
Chrysene	7.8	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.05	<0.02
Dibenzo[a,h]anthracene	0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Fluoranthene	0.69	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.1	<0.02
Fluorene	69	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Indeno [1,2,3-cd] pyrene	0.48	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	<0.02
1-Methylnaphthalene	3.4	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
2-Methylnaphthalene	3.4	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Methylnaphthalene (1&2)	3.4	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Naphthalene	0.75	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Phenanthrene	7.8	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.07	<0.02
Pyrene	78	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.08	<0.02

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 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

TABLE 8
METALS ANALYSIS FOR SOIL
Osgoode Properties
2025 and 2035 Othello Avenue, Ottawa, Ontario

<i>Parameter</i>	<i>MECP Table 3 Standards*</i>	<i>Sample Designation</i>			
		<i>Sample Collection Date (dd/mm/yyyy)</i>			
		<i>Sample Depth (mbgs)</i>			
		<i>BH-1 SS-2</i>	<i>DUP-1</i>	<i>BH-4 SS-1</i>	<i>MW-6 SS-2</i>
		13/08/2021	13/08/2021	13/08/2021	13/08/2021
		0.8- 1.5	0.8- 1.5	0 - 0.8	0.8 - 1.5
Antimony	7.5	<1	<1	<1	<1
Arsenic	18	2.2	3	2.6	3.1
Barium	390	44.4	40.1	79.7	114
Beryllium	5	<0.5	<0.5	<0.5	<0.5
Boron	120	<5	<5	8.5	5.1
Cadmium	1.2	<0.5	<0.5	<0.5	<0.5
Chromium	160	14.7	15.8	22.8	30.2
Cobalt	22	4.3	4.5	6.6	9.5
Copper	180	11.8	12.1	12	15.3
Lead	120	4.1	4.4	10.8	11.1
Molybdenum	6.9	<1	<1	<1	<1
Nickel	130	8.9	9.4	14.6	18.6
Selenium	2.4	<1	<1	<1	<1
Silver	25	<0.3	<0.3	<0.3	<0.3
Thallium	1	<1	<1	<1	<1
Uranium	23	<1	<1	<1	<1
Vanadium	86	21.7	27.1	28.6	40.7
Zinc	340	24.2	23.6	31.7	46.9

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 Residential/Parkland/Institutional Property Use.

BOLD
BOLD

Units

mbgs

NA

Exceeds Site Condition Standard

Reportable Detection Limit Exceeds Site Condition Standard

All Units in µg/g

Metres Below Ground Surface

Not Applicable

TABLE 9
PETROLEUM HYDROCARBON AND BTEX ANALYSIS FOR GROUNDWATER
Osgoode Properties
2025 and 2035 Othello Avenue, Ottawa, Ontario

<i>Parameter</i>	<i>MECP Table 3 Standards*</i>	<i>Sample Designation</i>				
		<i>Sample Collection Date (dd/mm/yyyy)</i>				
		<i>MW-2</i>	<i>MW-5</i>	<i>MW-6</i>	<i>DUP-3</i>	<i>Trip Blank</i>
		<i>23/08/2021</i>	<i>23/08/2021</i>	<i>23/08/2021</i>	<i>23/08/2021</i>	<i>23/08/2021</i>
Petroleum Hydrocarbons F1 (C ₆ - C ₁₀)	750	<25	<25	<25	<25	<25
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	-	-

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
BOLD

Units
BTEX

Exceeds Site Condition Standard
Reportable Detection Limit Exceeds Site Condition Standard
All Units in µg/L
Benzene, Toluene, Ethylbenzene and Xylenes

TABLE 10
VOLATILE ORGANIC COMPOUND ANALYSIS FOR GROUNDWATER
Osgoode Properties
2025 and 2035 Othello Avenue, Ottawa, Ontario

Parameter	MECP Table 3 Standards*	Sample Designation				
		Sample Collection Date (dd/mm/yyyy)				
		MW-2	MW-5	MW-6	DUP-3	Trip Blank
		23/08/2021	23/08/2021	23/08/2021	23/08/2021	23/08/2021
Acetone	130000	<5	<5	<5	<5	<5
Benzene	430	<0.5	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	85000	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	770	<0.5	<0.5	<0.5	<0.5	<0.5
Bromomethane	56	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon Tetrachloride	8.4	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorobenzene	630	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroform	22	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	82000	<0.5	<0.5	<0.5	<0.5	<0.5
Dichlorodifluoromethane	4400	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	9600	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	9600	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	67	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	3100	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	12	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethylene	17	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethylene	17	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethylene	17	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	140	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-Dichloropropene, total	45	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	2300	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylene dibromide (dibromoethane, 1,2-)	0.83	<0.2	<0.2	<0.2	<0.2	<0.2
Hexane	520	<1	<1	<1	<1	<1
Methyl Ethyl Ketone (2-Butanone)	1500000	<5	<5	<5	<5	<5
Methyl Isobutyl Ketone	580000	<5	<5	<5	<5	<5
Methyl tert-butyl ether	1400	<2	<2	<2	<2	<2
Methylene Chloride	5500	<5	<5	<5	<5	<5
Styrene	9100	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1,2-Tetrachloroethane	28	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	15	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethylene	17	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	18000	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	6700	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	30	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethylene	17	<0.5	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	2500	<1	<1	<1	<1	<1
Vinyl Chloride	1.7	<0.5	<0.5	<0.5	<0.5	<0.5
Xylenes, total	4200	<0.5	<0.5	<0.5	<0.5	<0.5

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
BOLD

Units

Exceeds Site Condition Standard

Reportable Detection Limit Exceeds Site Condition Standard

All Units in µg/L

TABLE 11
POLYCYCLIC AROMATIC HYDROCARBON ANALYSIS FOR GROUNDWATER
Osgoode Properties
2025 and 2035 Othello Avenue, Ottawa, Ontario

<i>Parameter</i>	<i>MECP Table 3 Standards*</i>	<i>Sample Designation</i>		
		<i>Sample Collection Date (dd/mm/yyyy)</i>		
		<i>MW-2</i>	<i>MW-5</i>	<i>MW-6</i>
		<i>23/08/2021</i>	<i>23/08/2021</i>	<i>23/08/2021</i>
Acenaphthene	1700	<0.05	<0.05	<0.05
Acenaphthylene	1.8	<0.05	<0.05	<0.05
Anthracene	2.4	<0.01	<0.01	<0.01
Benzo[a]anthracene	4.7	<0.01	<0.01	<0.01
Benzo[a]pyrene	0.81	<0.01	<0.01	<0.01
Benzo[b]fluoranthene	0.75	<0.05	<0.05	<0.05
Benzo[g,h,i]perylene	0.2	<0.05	<0.05	<0.05
Benzo[k]fluoranthene	0.4	<0.05	<0.05	<0.05
Chrysene	1	<0.05	<0.05	<0.05
Dibenzo[a,h]anthracene	0.52	<0.05	<0.05	<0.05
Fluoranthene	130	<0.01	<0.01	<0.01
Fluorene	400	<0.05	<0.05	<0.05
Indeno [1,2,3-cd] pyrene	0.2	<0.05	<0.05	<0.05
1-Methylnaphthalene	1800	<0.05	<0.05	<0.05
2-Methylnaphthalene	1800	<0.05	<0.05	<0.05
Methylnaphthalene (1&2)	1800	<0.1	<0.1	<0.1
Naphthalene	6400	<0.05	<0.05	<0.05
Phenanthrene	580	<0.05	<0.05	<0.05
Pyrene	68	<0.01	<0.01	<0.01

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
BOLD

Units

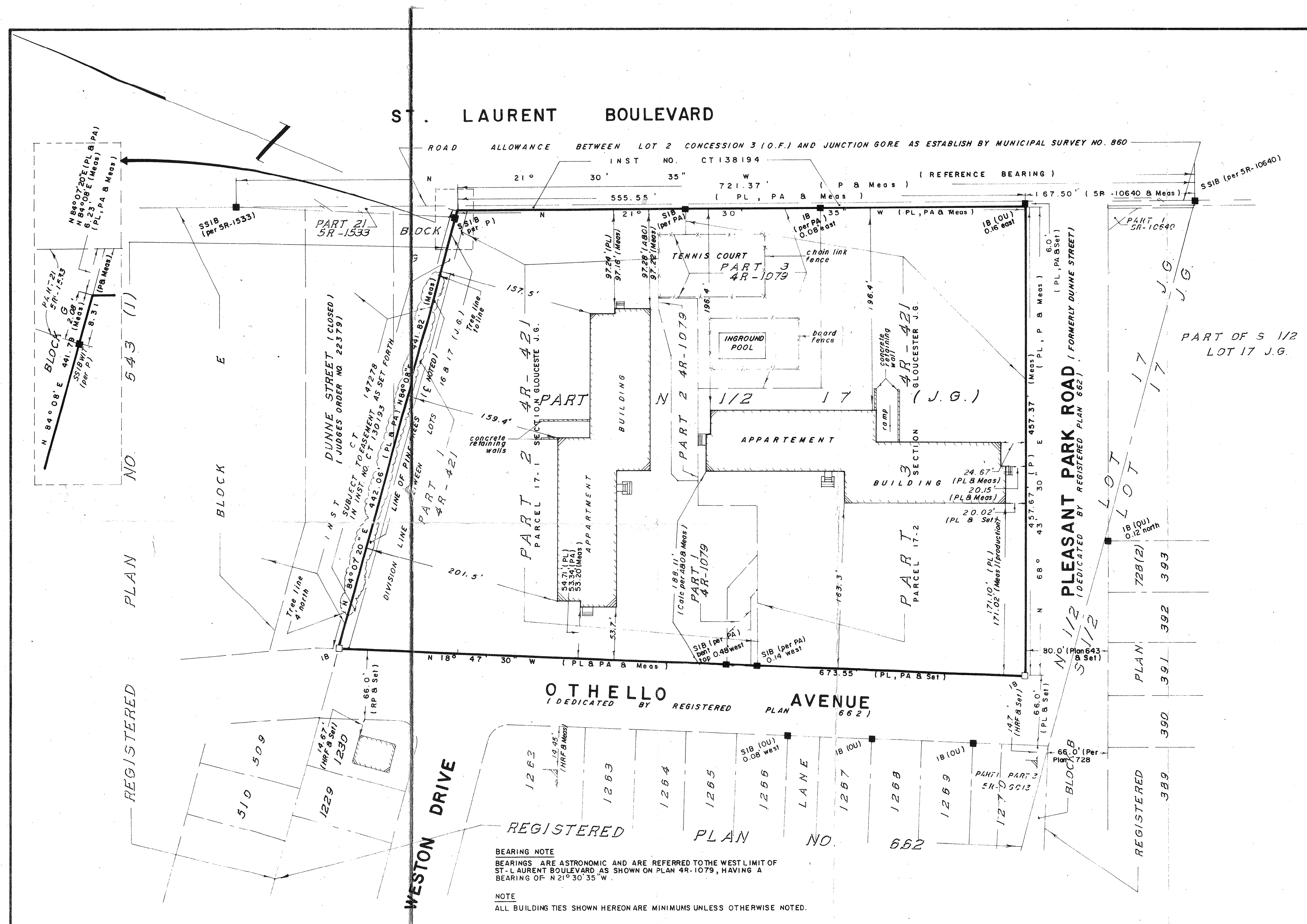
Exceeds Site Condition Standard

Reportable Detection Limit Exceeds Site Condition Standard

All Units in µg/L

10.0 APPENDICES

APPENDIX A
Legal Survey and Survey Data



BUILDING LOCATION SURVEY PART OF LOT 17 Junction Gore Being Parts 1,2 and 3 on Plan 4R-421 Township of GLOUCESTER Now in the City of OTTAWA Regional Municipality of Ottawa-Carleton		SCALE 1" = 60' Field Work Drawn by: W.O. C.T. Checked by: K.J. REF No. 3 J.G. (G.R.)	LEGEND (if applicable) DENOTES FOUND MONUMENT DENOTES SET MONUMENT DENOTES IRON BAR DENOTES ROUND IRON BAR DENOTES STANDARD IRON BAR DENOTES SHORT STANDING IRON BAR DENOTES CUT CROSS DENOTES NAIL & WASHER DENOTES MEASURED DENOTES PROPORTION DENOTES WITNESS DENOTES ORIGIN UNKNOWN	WBS DENOTES WEBSTER & SIMMONDS SURVEYING LTD. WJW DENOTES Wm. J. WEBSTER, O.L.S. PL DENOTES PLAN 4R-421 HRF DENOTES H.R. FARLEY O.L.S. P DENOTES PLAN SR-1533 NS DENOTES MUNICIPAL SURVEY O.L.S. PA DENOTES PLAN 4R-1079	SURVEYOR'S CERTIFICATE I CERTIFY THAT: The field survey represented on this plan was completed on the 16 day of JAN 1990 DATE Jan 23/90 Wm. J. Webster Ontario Land Surveyor	(Not for registration purposes) This is not an original copy unless Embossed With SEAL	© 1990 WEBSTER & SIMMONDS SURVEYING LTD. Ontario Land Surveyors Ottawa, Ontario
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APPENDIX B
Borehole Logs



Log of Borehole: BH-3

Project #: 290064.002

Logged By: MK

Project: Phase II Environmental Site Assessment

Client: Osgoode Properties

Location: 2025 and 2035 Othello Avenue, Ottawa, Ontario

Drill Date: August 13, 2021

SUBSURFACE PROFILE					SAMPLE			
Depth	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					
1		Grass						
2		Sand with trace Gravel and Organics			75	SS1	0/0	
3		Brown, damp, no staining or odours						
4					75	SS2	0/0	
5			1.52					
6		Silty Clay						
7		Grey, damp, no odours or staining			100	SS3	0/0	
8								
9					100	SS4	0/0	
10			3.05					
11		Moist			100	SS5	0/0	PHCs, VOCs, PAHs
12								
13					100	SS6	0/0	
14			4.57					
15		End of Borehole						
16		No Refusal						
17								
18								
19								
20								

Contractor: Strata Drilling Group Inc.

Drilling Method: Direct Push

Well Casing Size: N/A

Note:

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

Grade Elevation: N/A

Top of Casing Elevation: N/A

Sheet: 1 of 1



Log of Borehole: BH-4

Project #: 290064.002

Logged By: MK

Project: Phase II Environmental Site Assessment

Client: Osgoode Properties

Location: 2025 and 2035 Othello Avenue, Ottawa, Ontario

Drill Date: August 13, 2021

SUBSURFACE PROFILE					SAMPLE			
Depth	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					
		Grass	0.08					
1		Sand and Gravel Grey brown, damp, no odours or staining			50	SS1	0/0	PHCs, VOCs, PAHs
2			0.76					
3		Sand with trace Silt Brown, damp, no odours or staining			50	SS2	0/0	
4								
5		End of Borehole No Refusal	1.52					
6								
7								
8								
9								
10								

Contractor: Strata Drilling Group Inc.

Drilling Method: Direct Push

Well Casing Size: N/A

Note:

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

Grade Elevation: N/A

Top of Casing Elevation: N/A

Sheet: 1 of 1



Log of Borehole: MW-2

Project #: 290064.002

Logged By: MK

Project: Phase II Environmental Site Assessment

Client: Osgoode Properties

Location: 2025 and 2035 Othello Avenue, Ottawa, Ontario

Drill Date: August 13, 2021

SUBSURFACE PROFILE					SAMPLE			
Depth	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					
1		Grass			80	SS1	0/0	
2		Silty Sand with trace Clay			80	SS2	0/0	
3		Brown damp, no odours or staining						
4			1.52					
5		Silty Clay			100	SS3	0/0	
6		Grey, damp, no odours or staining			100	SS4	0/0	
7			2.74		100	SS5	0/0	
8		Moist			100	SS6	0/0	
9			4.57		100	SS7	0/0	
10			5.33		100	SS8	0/0	
11		Clay						PHCs, VOCs, PAHs, Grain size, pH
12		Grey, no odours or staining						
13								
14		Wet						
15			7.62					
16		End of Borehole						
17		No Refusal						
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

Contractor: Strata Drilling Group Inc.

Drilling Method: Direct Push

Well Casing Size: 5.1 cm

Note:

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

Grade Elevation: 101.83 m

Top of Casing Elevation: 101.69 m

Sheet: 1 of 1



Log of Borehole: MW-5

Project #: 290064.002

Logged By: MK

Project: Phase II Environmental Site Assessment

Client: Osgoode Properties

Location: 2025 and 2035 Othello Avenue, Ottawa, Ontario

Drill Date: August 13, 2021

SUBSURFACE PROFILE					SAMPLE			
Depth	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					
1		Grass			80	SS1	0/0.6	
2		Sand and Gravel						
3		Brown, trace organics, no odours or staining	0.76		80	SS2	0/1	
4		Trace asphalt			60	SS3	0/0	
5					60	SS4	0/0	
6			2.29		90	SS5	0/0	
7		Silty Clay			90	SS6	0/0.6	PHCs, VOCs, PAHs, pH
8		Grey, damp, no odours or staining			90	SS7	0/0	
9			3.81		90	SS8	0/0	
10		Wet						
11			4.57					
12		Grey, wet, no odours or staining						
13			6.10					
14		End of Borehole						
15		No Refusal						

Contractor: Strata Drilling Group Inc.

Drilling Method: Direct Push

Well Casing Size: 5.1 cm

Note:

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

Grade Elevation: 101.83 m

Top of Casing Elevation: 101.11 m

Sheet: 1 of 1



Log of Borehole: MW-6

Project #: 290064.002

Logged By: MK

Project: Phase II Environmental Site Assessment

Client: Osgoode Properties

Location: 2025 and 2035 Othello Avenue, Ottawa, Ontario

Drill Date: August 13, 2021

SUBSURFACE PROFILE					SAMPLE			
Depth	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					
1		Grass			50	SS1	0/0	
2		Sand with trace Gravel and Organics						
3		Brown, damp, no odours or staining			50	SS2	0/0	PAHs, pH, Metals
4			1.52					
5		Silty Sand			55	SS3	0/0	
6		Brown, damp, no odours or staining						
7			2.29		55	SS4	0/0	
8		Silty Clay						
9		Grey, damp, no odours or staining			75	SS5	0/0	
10			3.81					
11		Wet			75	SS6	0/0	PHCs, VOCs, PAHs
12			4.57					
13		Grey, wet, no odours or staining			100	SS7	0/0	
14								
15					100	SS8	0/0	
16			6.10					
17		End of Borehole						
18		No Refusal						
19								
20								
21								
22								
23								
24								
25								

Contractor: Strata Drilling Group Inc.

Drilling Method: Direct Push

Well Casing Size: 5.1 cm

Note:

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

Grade Elevation: N/A

Top of Casing Elevation: N/A

Sheet: 1 of 1

APPENDIX C
Laboratory Certificates of Analysis

Certificate of Analysis

Pinchin Ltd. (Ottawa)

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

Client PO:
Project: 290064.002
Custody: 61816

Report Date: 19-Aug-2021
Order Date: 16-Aug-2021

Order #: 2134102

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

Paracel ID	Client ID
2134102-01	BH-1 SS-2
2134102-02	MW-2 SS-8
2134102-03	DUP-1
2134102-04	BH-3 SS-5
2134102-05	BH-4 SS-1
2134102-06	MW-5 SS-6
2134102-07	DUP-2
2134102-08	MW-6 SS-2
2134102-09	MW-6 SS-6

Approved By:



Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis

Report Date: 19-Aug-2021

Client: Pinchin Ltd. (Ottawa)

Order Date: 16-Aug-2021

Client PO:

Project Description: 290064.002

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
pH, soil	EPA 150.1 - pH probe @ 25 °C, CaCl buffered ext.	17-Aug-21	18-Aug-21
PHC F1	CWS Tier 1 - P&T GC-FID	17-Aug-21	18-Aug-21
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	17-Aug-21	19-Aug-21
REG 153: Metals by ICP/MS, soil	EPA 6020 - Digestion - ICP-MS	18-Aug-21	18-Aug-21
REG 153: PAHs by GC-MS	EPA 8270 - GC-MS, extraction	16-Aug-21	19-Aug-21
REG 153: VOCs by P&T GC/MS	EPA 8260 - P&T GC-MS	17-Aug-21	18-Aug-21
Solids, %	Gravimetric, calculation	17-Aug-21	17-Aug-21
Texture - Coarse Med/Fine	Based on ASTM D2487	16-Aug-21	19-Aug-21

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

Report Date: 19-Aug-2021

Order Date: 16-Aug-2021

Project Description: 290064.002

	Client ID:	BH-1 SS-2	MW-2 SS-8	DUP-1	BH-3 SS-5
	Sample Date:	13-Aug-21 09:00	13-Aug-21 09:00	13-Aug-21 09:00	13-Aug-21 09:00
	Sample ID:	2134102-01	2134102-02	2134102-03	2134102-04
	MDL/Units	Soil	Soil	Soil	Soil

Physical Characteristics

% Solids	0.1 % by Wt.	85.0	65.7	87.0	77.2
>75 um	0.1 %	-	1.3	-	-
<75 um	0.1 %	-	98.7	-	-
Texture	0.1 %	-	Med/Fine	-	-

General Inorganics

pH	0.05 pH Units	10.03	8.24	-	-
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Metals

Antimony	1.0 ug/g dry	<1.0	-	<1.0	-
Arsenic	1.0 ug/g dry	2.2	-	3.0	-
Barium	1.0 ug/g dry	44.4	-	40.1	-
Beryllium	0.5 ug/g dry	<0.5	-	<0.5	-
Boron	5.0 ug/g dry	<5.0	-	<5.0	-
Cadmium	0.5 ug/g dry	<0.5	-	<0.5	-
Chromium	5.0 ug/g dry	14.7	-	15.8	-
Cobalt	1.0 ug/g dry	4.3	-	4.5	-
Copper	5.0 ug/g dry	11.8	-	12.1	-
Lead	1.0 ug/g dry	4.1	-	4.4	-
Molybdenum	1.0 ug/g dry	<1.0	-	<1.0	-
Nickel	5.0 ug/g dry	8.9	-	9.4	-
Selenium	1.0 ug/g dry	<1.0	-	<1.0	-
Silver	0.3 ug/g dry	<0.3	-	<0.3	-
Thallium	1.0 ug/g dry	<1.0	-	<1.0	-
Uranium	1.0 ug/g dry	<1.0	-	<1.0	-
Vanadium	10.0 ug/g dry	21.7	-	27.1	-
Zinc	20.0 ug/g dry	24.2	-	23.6	-

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

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

Report Date: 19-Aug-2021

Order Date: 16-Aug-2021

Project Description: 290064.002

	Client ID: Sample Date: Sample ID:	BH-1 SS-2 13-Aug-21 09:00 2134102-01 Soil	MW-2 SS-8 13-Aug-21 09:00 2134102-02 Soil	DUP-1 13-Aug-21 09:00 2134102-03 Soil	BH-3 SS-5 13-Aug-21 09:00 2134102-04 Soil
	MDL/Units				
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, 1,2-)	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
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	118%	130%	-	124%
Dibromofluoromethane	Surrogate	86.7%	98.7%	-	89.7%
Toluene-d8	Surrogate	107%	106%	-	110%

Certificate of Analysis

Report Date: 19-Aug-2021

Client: Pinchin Ltd. (Ottawa)

Order Date: 16-Aug-2021

Client PO:

Project Description: 290064.002

Client ID:	BH-1 SS-2	MW-2 SS-8	DUP-1	BH-3 SS-5
Sample Date:	13-Aug-21 09:00	13-Aug-21 09:00	13-Aug-21 09:00	13-Aug-21 09:00
Sample ID:	2134102-01	2134102-02	2134102-03	2134102-04
MDL/Units	Soil	Soil	Soil	Soil

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

Semi-Volatiles

Acenaphthene	0.02 ug/g dry	<0.02	<0.02	-	<0.02
Acenaphthylene	0.02 ug/g dry	<0.02	<0.02	-	<0.02
Anthracene	0.02 ug/g dry	<0.02	<0.02	-	<0.02
Benzo [a] anthracene	0.02 ug/g dry	<0.02	<0.02	-	<0.02
Benzo [a] pyrene	0.02 ug/g dry	<0.02	<0.02	-	<0.02
Benzo [b] fluoranthene	0.02 ug/g dry	<0.02	<0.02	-	<0.02
Benzo [g,h,i] perylene	0.02 ug/g dry	<0.02	<0.02	-	<0.02
Benzo [k] fluoranthene	0.02 ug/g dry	<0.02	<0.02	-	<0.02
Chrysene	0.02 ug/g dry	<0.02	<0.02	-	<0.02
Dibenzo [a,h] anthracene	0.02 ug/g dry	<0.02	<0.02	-	<0.02
Fluoranthene	0.02 ug/g dry	<0.02	<0.02	-	<0.02
Fluorene	0.02 ug/g dry	<0.02	<0.02	-	<0.02
Indeno [1,2,3-cd] pyrene	0.02 ug/g dry	<0.02	<0.02	-	<0.02
1-Methylnaphthalene	0.02 ug/g dry	<0.02	<0.02	-	<0.02
2-Methylnaphthalene	0.02 ug/g dry	<0.02	<0.02	-	<0.02
Methylnaphthalene (1&2)	0.04 ug/g dry	<0.04	<0.04	-	<0.04
Naphthalene	0.01 ug/g dry	<0.01	<0.01	-	<0.01
Phenanthrene	0.02 ug/g dry	<0.02	<0.02	-	<0.02
Pyrene	0.02 ug/g dry	<0.02	<0.02	-	<0.02
2-Fluorobiphenyl	Surrogate	73.9%	75.4%	-	71.0%
Terphenyl-d14	Surrogate	97.4%	74.8%	-	63.3%

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

Report Date: 19-Aug-2021
 Order Date: 16-Aug-2021
 Project Description: 290064.002

	Client ID:	BH-4 SS-1	MW-5 SS-6	DUP-2	MW-6 SS-2
	Sample Date:	13-Aug-21 09:00	13-Aug-21 12:00	13-Aug-21 12:00	13-Aug-21 12:00
	Sample ID:	2134102-05	2134102-06	2134102-07	2134102-08
	MDL/Units	Soil	Soil	Soil	Soil
Physical Characteristics					
% Solids	0.1 % by Wt.	94.0	67.8	67.3	78.2
General Inorganics					
pH	0.05 pH Units	-	8.31	-	7.63
Metals					
Antimony	1.0 ug/g dry	<1.0	-	-	<1.0
Arsenic	1.0 ug/g dry	2.6	-	-	3.1
Barium	1.0 ug/g dry	79.7	-	-	114
Beryllium	0.5 ug/g dry	<0.5	-	-	<0.5
Boron	5.0 ug/g dry	8.5	-	-	5.1
Cadmium	0.5 ug/g dry	<0.5	-	-	<0.5
Chromium	5.0 ug/g dry	22.8	-	-	30.2
Cobalt	1.0 ug/g dry	6.6	-	-	9.5
Copper	5.0 ug/g dry	12.0	-	-	15.3
Lead	1.0 ug/g dry	10.8	-	-	11.1
Molybdenum	1.0 ug/g dry	<1.0	-	-	<1.0
Nickel	5.0 ug/g dry	14.6	-	-	18.6
Selenium	1.0 ug/g dry	<1.0	-	-	<1.0
Silver	0.3 ug/g dry	<0.3	-	-	<0.3
Thallium	1.0 ug/g dry	<1.0	-	-	<1.0
Uranium	1.0 ug/g dry	<1.0	-	-	<1.0
Vanadium	10.0 ug/g dry	28.6	-	-	40.7
Zinc	20.0 ug/g dry	31.7	-	-	46.9
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	-

Certificate of Analysis

Report Date: 19-Aug-2021

Client: Pinchin Ltd. (Ottawa)

Order Date: 16-Aug-2021

Client PO:

Project Description: 290064.002

	Client ID:	BH-4 SS-1	MW-5 SS-6	DUP-2	MW-6 SS-2
	Sample Date:	13-Aug-21 09:00	13-Aug-21 12:00	13-Aug-21 12:00	13-Aug-21 12:00
	Sample ID:	2134102-05	2134102-06	2134102-07	2134102-08
	MDL/Units	Soil	Soil	Soil	Soil
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	-
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	126%	128%	129%	-
Dibromofluoromethane	Surrogate	80.8%	92.4%	96.1%	-
Toluene-d8	Surrogate	99.4%	113%	112%	-
Hydrocarbons					
F1 PHCs (C6-C10)	7 ug/g dry	<7	<7	<7	-

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

Report Date: 19-Aug-2021
 Order Date: 16-Aug-2021
 Project Description: 290064.002

	Client ID:	BH-4 SS-1	MW-5 SS-6	DUP-2	MW-6 SS-2
	Sample Date:	13-Aug-21 09:00	13-Aug-21 12:00	13-Aug-21 12:00	13-Aug-21 12:00
	Sample ID:	2134102-05	2134102-06	2134102-07	2134102-08
	MDL/Units	Soil	Soil	Soil	Soil
F2 PHCs (C10-C16)	4 ug/g dry	<4	<4	<4	-
F3 PHCs (C16-C34)	8 ug/g dry	46	<8	<8	-
F4 PHCs (C34-C50)	6 ug/g dry	23	<6	<6	-
Semi-Volatiles					
Acenaphthene	0.02 ug/g dry	<0.02	<0.02	<0.02	<0.02
Acenaphthylene	0.02 ug/g dry	<0.02	<0.02	<0.02	<0.02
Anthracene	0.02 ug/g dry	<0.02	<0.02	<0.02	<0.02
Benzo [a] anthracene	0.02 ug/g dry	<0.02	<0.02	<0.02	0.05
Benzo [a] pyrene	0.02 ug/g dry	<0.02	<0.02	<0.02	0.04
Benzo [b] fluoranthene	0.02 ug/g dry	<0.02	<0.02	<0.02	0.05
Benzo [g,h,i] perylene	0.02 ug/g dry	<0.02	<0.02	<0.02	0.03
Benzo [k] fluoranthene	0.02 ug/g dry	<0.02	<0.02	<0.02	0.03
Chrysene	0.02 ug/g dry	<0.02	<0.02	<0.02	0.05
Dibenzo [a,h] anthracene	0.02 ug/g dry	<0.02	<0.02	<0.02	<0.02
Fluoranthene	0.02 ug/g dry	<0.02	<0.02	<0.02	0.10
Fluorene	0.02 ug/g dry	<0.02	<0.02	<0.02	<0.02
Indeno [1,2,3-cd] pyrene	0.02 ug/g dry	<0.02	<0.02	<0.02	0.02
1-Methylnaphthalene	0.02 ug/g dry	<0.02	<0.02	<0.02	<0.02
2-Methylnaphthalene	0.02 ug/g dry	<0.02	<0.02	<0.02	<0.02
Methylnaphthalene (1&2)	0.04 ug/g dry	<0.04	<0.04	<0.04	<0.04
Naphthalene	0.01 ug/g dry	<0.01	<0.01	<0.01	<0.01
Phenanthrene	0.02 ug/g dry	<0.02	<0.02	<0.02	0.07
Pyrene	0.02 ug/g dry	<0.02	<0.02	<0.02	0.08
2-Fluorobiphenyl	Surrogate	85.4%	64.6%	61.6%	73.6%
Terphenyl-d14	Surrogate	99.3%	61.3%	60.2%	74.5%

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

Report Date: 19-Aug-2021
 Order Date: 16-Aug-2021
 Project Description: 290064.002

Client ID:	MW-6 SS-6	-	-	-
Sample Date:	13-Aug-21 12:00	-	-	-
Sample ID:	2134102-09	-	-	-
MDL/Units	Soil	-	-	-

Physical Characteristics

% Solids	0.1 % by Wt.	68.1	-	-	-
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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	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	-	-	-
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	-	-	-

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

Report Date: 19-Aug-2021
 Order Date: 16-Aug-2021
 Project Description: 290064.002

	Client ID:	MW-6 SS-6	-	-	-
	Sample Date:	13-Aug-21 12:00	-	-	-
	Sample ID:	2134102-09	-	-	-
	MDL/Units	Soil	-	-	-
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	132%	-	-	-
Dibromofluoromethane	Surrogate	96.4%	-	-	-
Toluene-d8	Surrogate	112%	-	-	-

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	-	-	-

Semi-Volatiles

Acenaphthene	0.02 ug/g dry	<0.02	-	-	-
Acenaphthylene	0.02 ug/g dry	<0.02	-	-	-
Anthracene	0.02 ug/g dry	<0.02	-	-	-
Benzo [a] anthracene	0.02 ug/g dry	<0.02	-	-	-
Benzo [a] pyrene	0.02 ug/g dry	<0.02	-	-	-
Benzo [b] fluoranthene	0.02 ug/g dry	<0.02	-	-	-
Benzo [g,h,i] perylene	0.02 ug/g dry	<0.02	-	-	-
Benzo [k] fluoranthene	0.02 ug/g dry	<0.02	-	-	-
Chrysene	0.02 ug/g dry	<0.02	-	-	-
Dibenzo [a,h] anthracene	0.02 ug/g dry	<0.02	-	-	-
Fluoranthene	0.02 ug/g dry	<0.02	-	-	-
Fluorene	0.02 ug/g dry	<0.02	-	-	-
Indeno [1,2,3-cd] pyrene	0.02 ug/g dry	<0.02	-	-	-
1-Methylnaphthalene	0.02 ug/g dry	<0.02	-	-	-
2-Methylnaphthalene	0.02 ug/g dry	<0.02	-	-	-
Methylnaphthalene (1&2)	0.04 ug/g dry	<0.04	-	-	-
Naphthalene	0.01 ug/g dry	<0.01	-	-	-

Certificate of Analysis

Report Date: 19-Aug-2021

Client: Pinchin Ltd. (Ottawa)

Order Date: 16-Aug-2021

Client PO:

Project Description: 290064.002

	Client ID:	MW-6 SS-6	-	-	-
	Sample Date:	13-Aug-21 12:00	-	-	-
	Sample ID:	2134102-09	-	-	-
	MDL/Units	Soil	-	-	-
Phenanthrene	0.02 ug/g dry	<0.02	-	-	-
Pyrene	0.02 ug/g dry	<0.02	-	-	-
2-Fluorobiphenyl	Surrogate	68.1%	-	-	-
Terphenyl-d14	Surrogate	63.3%	-	-	-

Certificate of Analysis

Report Date: 19-Aug-2021

Client: Pinchin Ltd. (Ottawa)

Order Date: 16-Aug-2021

Client PO:

Project Description: 290064.002

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						
Metals									
Antimony	ND	1.0	ug/g						
Arsenic	ND	1.0	ug/g						
Barium	ND	1.0	ug/g						
Beryllium	ND	0.5	ug/g						
Boron	ND	5.0	ug/g						
Cadmium	ND	0.5	ug/g						
Chromium	ND	5.0	ug/g						
Cobalt	ND	1.0	ug/g						
Copper	ND	5.0	ug/g						
Lead	ND	1.0	ug/g						
Molybdenum	ND	1.0	ug/g						
Nickel	ND	5.0	ug/g						
Selenium	ND	1.0	ug/g						
Silver	ND	0.3	ug/g						
Thallium	ND	1.0	ug/g						
Uranium	ND	1.0	ug/g						
Vanadium	ND	10.0	ug/g						
Zinc	ND	20.0	ug/g						
Semi-Volatiles									
Acenaphthene	ND	0.02	ug/g						
Acenaphthylene	ND	0.02	ug/g						
Anthracene	ND	0.02	ug/g						
Benzo [a] anthracene	ND	0.02	ug/g						
Benzo [a] pyrene	ND	0.02	ug/g						
Benzo [b] fluoranthene	ND	0.02	ug/g						
Benzo [g,h,i] perylene	ND	0.02	ug/g						
Benzo [k] fluoranthene	ND	0.02	ug/g						
Chrysene	ND	0.02	ug/g						
Dibenzo [a,h] anthracene	ND	0.02	ug/g						
Fluoranthene	ND	0.02	ug/g						
Fluorene	ND	0.02	ug/g						
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g						
1-Methylnaphthalene	ND	0.02	ug/g						
2-Methylnaphthalene	ND	0.02	ug/g						
Methylnaphthalene (1&2)	ND	0.04	ug/g						
Naphthalene	ND	0.01	ug/g						
Phenanthrene	ND	0.02	ug/g						
Pyrene	ND	0.02	ug/g						
Surrogate: 2-Fluorobiphenyl	1.10		ug/g		82.5	50-140			
Surrogate: Terphenyl-d14	1.30		ug/g		97.4	50-140			
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						

Certificate of Analysis

Report Date: 19-Aug-2021

Client: Pinchin Ltd. (Ottawa)

Order Date: 16-Aug-2021

Client PO:

Project Description: 290064.002

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
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	8.46		ug/g		106	50-140			
Surrogate: Dibromofluoromethane	8.24		ug/g		103	50-140			
Surrogate: Toluene-d8	8.56		ug/g		107	50-140			

Certificate of Analysis

Report Date: 19-Aug-2021

Client: Pinchin Ltd. (Ottawa)

Order Date: 16-Aug-2021

Client PO:

Project Description: 290064.002

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
pH	7.67	0.05	pH Units	7.70			0.4	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	
Metals									
Antimony	ND	1.0	ug/g dry	ND			NC	30	
Arsenic	4.5	1.0	ug/g dry	4.7			4.7	30	
Barium	96.7	1.0	ug/g dry	91.6			5.4	30	
Beryllium	0.6	0.5	ug/g dry	0.5			2.8	30	
Boron	12.9	5.0	ug/g dry	11.9			7.8	30	
Cadmium	ND	0.5	ug/g dry	ND			NC	30	
Chromium	19.7	5.0	ug/g dry	18.8			4.5	30	
Cobalt	7.5	1.0	ug/g dry	7.5			0.7	30	
Copper	92.4	5.0	ug/g dry	91.0			1.5	30	
Lead	17.8	1.0	ug/g dry	17.6			1.5	30	
Molybdenum	1.5	1.0	ug/g dry	1.6			2.9	30	
Nickel	18.1	5.0	ug/g dry	17.6			2.8	30	
Selenium	ND	1.0	ug/g dry	ND			NC	30	
Silver	ND	0.3	ug/g dry	ND			NC	30	
Thallium	ND	1.0	ug/g dry	ND			NC	30	
Uranium	ND	1.0	ug/g dry	ND			NC	30	
Vanadium	22.6	10.0	ug/g dry	21.8			3.2	30	
Zinc	143	20.0	ug/g dry	150			4.4	30	
Physical Characteristics									
% Solids	96.8	0.1	% by Wt.	96.7			0.1	25	
Semi-Volatiles									
Acenaphthene	ND	0.02	ug/g dry	ND			NC	40	
Acenaphthylene	ND	0.02	ug/g dry	ND			NC	40	
Anthracene	ND	0.02	ug/g dry	ND			NC	40	
Benzo [a] anthracene	ND	0.02	ug/g dry	ND			NC	40	
Benzo [a] pyrene	ND	0.02	ug/g dry	ND			NC	40	
Benzo [b] fluoranthene	ND	0.02	ug/g dry	ND			NC	40	
Benzo [g,h,i] perylene	ND	0.02	ug/g dry	ND			NC	40	
Benzo [k] fluoranthene	ND	0.02	ug/g dry	ND			NC	40	
Chrysene	ND	0.02	ug/g dry	ND			NC	40	
Dibenzo [a,h] anthracene	ND	0.02	ug/g dry	ND			NC	40	
Fluoranthene	ND	0.02	ug/g dry	ND			NC	40	
Fluorene	ND	0.02	ug/g dry	ND			NC	40	
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g dry	ND			NC	40	
1-Methylnaphthalene	ND	0.02	ug/g dry	ND			NC	40	
2-Methylnaphthalene	ND	0.02	ug/g dry	ND			NC	40	
Naphthalene	ND	0.01	ug/g dry	ND			NC	40	
Phenanthrene	ND	0.02	ug/g dry	ND			NC	40	
Pyrene	ND	0.02	ug/g dry	ND			NC	40	
Surrogate: 2-Fluorobiphenyl	1.13		ug/g dry		72.7	50-140			
Surrogate: Terphenyl-d14	1.53		ug/g dry		98.1	50-140			
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	

Certificate of Analysis

Report Date: 19-Aug-2021

Client: Pinchin Ltd. (Ottawa)

Order Date: 16-Aug-2021

Client PO:

Project Description: 290064.002

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
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	9.27		ug/g dry		111	50-140			
Surrogate: Dibromofluoromethane	7.85		ug/g dry		94.1	50-140			
Surrogate: Toluene-d8	8.96		ug/g dry		107	50-140			

Certificate of Analysis

Report Date: 19-Aug-2021

Client: Pinchin Ltd. (Ottawa)

Order Date: 16-Aug-2021

Client PO:

Project Description: 290064.002

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	185	7	ug/g	ND	92.7	80-120			
F2 PHCs (C10-C16)	85	4	ug/g	ND	106	80-120			
F3 PHCs (C16-C34)	224	8	ug/g	ND	114	80-120			
F4 PHCs (C34-C50)	144	6	ug/g	ND	116	80-120			
Metals									
Antimony	49.5	1.0	ug/g	ND	98.4	70-130			
Arsenic	53.3	1.0	ug/g	1.9	103	70-130			
Barium	86.6	1.0	ug/g	36.6	100	70-130			
Beryllium	46.4	0.5	ug/g	ND	92.4	70-130			
Boron	46.2	5.0	ug/g	ND	82.9	70-130			
Cadmium	47.8	0.5	ug/g	ND	95.3	70-130			
Chromium	58.5	5.0	ug/g	7.5	102	70-130			
Cobalt	53.1	1.0	ug/g	3.0	100	70-130			
Copper	83.1	5.0	ug/g	36.4	93.4	70-130			
Lead	50.2	1.0	ug/g	7.0	86.3	70-130			
Molybdenum	51.1	1.0	ug/g	ND	101	70-130			
Nickel	55.9	5.0	ug/g	7.1	97.7	70-130			
Selenium	46.8	1.0	ug/g	ND	93.3	70-130			
Silver	46.6	0.3	ug/g	ND	93.0	70-130			
Thallium	45.5	1.0	ug/g	ND	91.0	70-130			
Uranium	46.4	1.0	ug/g	ND	92.3	70-130			
Vanadium	60.3	10.0	ug/g	ND	103	70-130			
Zinc	103	20.0	ug/g	59.9	86.8	70-130			
Semi-Volatiles									
Acenaphthene	0.157	0.02	ug/g	ND	80.5	50-140			
Acenaphthylene	0.140	0.02	ug/g	ND	71.6	50-140			
Anthracene	0.177	0.02	ug/g	ND	90.7	50-140			
Benzo [a] anthracene	0.175	0.02	ug/g	ND	90.0	50-140			
Benzo [a] pyrene	0.176	0.02	ug/g	ND	90.5	50-140			
Benzo [b] fluoranthene	0.202	0.02	ug/g	ND	104	50-140			
Benzo [g,h,i] perylene	0.171	0.02	ug/g	ND	87.6	50-140			
Benzo [k] fluoranthene	0.159	0.02	ug/g	ND	81.4	50-140			
Chrysene	0.226	0.02	ug/g	ND	116	50-140			
Dibenzo [a,h] anthracene	0.148	0.02	ug/g	ND	76.0	50-140			
Fluoranthene	0.184	0.02	ug/g	ND	94.2	50-140			
Fluorene	0.188	0.02	ug/g	ND	96.4	50-140			
Indeno [1,2,3-cd] pyrene	0.135	0.02	ug/g	ND	69.3	50-140			
1-Methylnaphthalene	0.137	0.02	ug/g	ND	70.4	50-140			
2-Methylnaphthalene	0.157	0.02	ug/g	ND	80.4	50-140			
Naphthalene	0.155	0.01	ug/g	ND	79.7	50-140			
Phenanthrene	0.185	0.02	ug/g	ND	94.8	50-140			
Pyrene	0.193	0.02	ug/g	ND	99.0	50-140			
Surrogate: 2-Fluorobiphenyl	1.13		ug/g		72.7	50-140			
Surrogate: Terphenyl-d14	1.36		ug/g		87.4	50-140			
Volatiles									
Acetone	8.55	0.50	ug/g	ND	85.5	50-140			
Benzene	4.15	0.02	ug/g	ND	104	60-130			
Bromodichloromethane	3.64	0.05	ug/g	ND	91.1	60-130			

Certificate of Analysis

Report Date: 19-Aug-2021

Client: Pinchin Ltd. (Ottawa)

Order Date: 16-Aug-2021

Client PO:

Project Description: 290064.002

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Bromoform	4.50	0.05	ug/g	ND	113	60-130			
Bromomethane	4.73	0.05	ug/g	ND	118	50-140			
Carbon Tetrachloride	3.40	0.05	ug/g	ND	84.9	60-130			
Chlorobenzene	4.91	0.05	ug/g	ND	123	60-130			
Chloroform	4.09	0.05	ug/g	ND	102	60-130			
Dibromochloromethane	4.57	0.05	ug/g	ND	114	60-130			
Dichlorodifluoromethane	3.35	0.05	ug/g	ND	83.7	50-140			
1,2-Dichlorobenzene	4.26	0.05	ug/g	ND	106	60-130			
1,3-Dichlorobenzene	4.27	0.05	ug/g	ND	107	60-130			
1,4-Dichlorobenzene	4.36	0.05	ug/g	ND	109	60-130			
1,1-Dichloroethane	4.31	0.05	ug/g	ND	108	60-130			
1,2-Dichloroethane	3.68	0.05	ug/g	ND	92.0	60-130			
1,1-Dichloroethylene	3.96	0.05	ug/g	ND	99.0	60-130			
cis-1,2-Dichloroethylene	3.93	0.05	ug/g	ND	98.1	60-130			
trans-1,2-Dichloroethylene	3.86	0.05	ug/g	ND	96.5	60-130			
1,2-Dichloropropane	4.22	0.05	ug/g	ND	106	60-130			
cis-1,3-Dichloropropylene	3.53	0.05	ug/g	ND	88.1	60-130			
trans-1,3-Dichloropropylene	3.39	0.05	ug/g	ND	84.6	60-130			
Ethylbenzene	4.49	0.05	ug/g	ND	112	60-130			
Ethylene dibromide (dibromoethane, 1,2-	3.55	0.05	ug/g	ND	88.7	60-130			
Hexane	4.36	0.05	ug/g	ND	109	60-130			
Methyl Ethyl Ketone (2-Butanone)	10.5	0.50	ug/g	ND	105	50-140			
Methyl Isobutyl Ketone	10.8	0.50	ug/g	ND	108	50-140			
Methyl tert-butyl ether	10.8	0.05	ug/g	ND	108	50-140			
Methylene Chloride	2.80	0.05	ug/g	ND	70.1	60-130			
Styrene	4.60	0.05	ug/g	ND	115	60-130			
1,1,1,2-Tetrachloroethane	3.72	0.05	ug/g	ND	93.1	60-130			
1,1,2,2-Tetrachloroethane	4.59	0.05	ug/g	ND	115	60-130			
Tetrachloroethylene	4.71	0.05	ug/g	ND	118	60-130			
Toluene	4.59	0.05	ug/g	ND	115	60-130			
1,1,1-Trichloroethane	3.79	0.05	ug/g	ND	94.7	60-130			
1,1,2-Trichloroethane	4.01	0.05	ug/g	ND	100	60-130			
Trichloroethylene	4.00	0.05	ug/g	ND	99.9	60-130			
Trichlorofluoromethane	3.69	0.05	ug/g	ND	92.4	50-140			
Vinyl chloride	3.51	0.02	ug/g	ND	87.9	50-140			
m,p-Xylenes	9.49	0.05	ug/g	ND	119	60-130			
o-Xylene	4.42	0.05	ug/g	ND	110	60-130			
Surrogate: 4-Bromofluorobenzene	7.04		ug/g		88.0	50-140			
Surrogate: Dibromofluoromethane	7.97		ug/g		99.6	50-140			
Surrogate: Toluene-d8	9.77		ug/g		122	50-140			

Certificate of Analysis

Client: Pinchin Ltd. (Ottawa)

Client PO:

Report Date: 19-Aug-2021

Order Date: 16-Aug-2021

Project Description: 290064.002

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.



Client Name: Pinchik Ctde	Project Ref: 290064.002	Page 1 of 1
Contact Name: M. Kosin, M. Ryan	Quote #:	Turnaround Time
Address: 1 Hines Rd, Lunata NJ	PO #:	☐ 1 day ☐ 3 day
Telephone:	Email: On file	☐ 2 day ☒ Regular
		Date Required: _____

☐ REG 153/04	☐ REG 406/19	Other Regulation	Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)		Required Analysis									
☐ Table 1 ☒ Res/Park ☒ Med/Fine	☐ REG 558	☐ PWQO	Matrix	Air Volume	# of Containers	Sample Taken	Date	Time	PHCs Fr-F4	VOCs	PAHs	ICPMS Metals	pH	Texture & Sm
☐ Table 2 ☐ Ind/Comm ☐ Coarse	☐ CCME	☐ MISA												
☒ Table 3 ☐ Agri/Other	☐ SU - San	☐ SU - Storm												
☐ Table _____	Mun: _____	☐ Other: _____												
For RSC: ☐ Yes ☒ No														
Sample ID/Location Name														
1	BH-1 SS-2	S	1	2	Aug 13,	AM			X	X	X	X	X	
2	MW-2 SS-8			2	2021	A			X	X	X	X	X	
3	Dup-1			1								X		
4	BH-3 SS-5			2					X	X	X			
5	BH-4 SS-1			2					X	X	X	X		
6	MW-5 SS-6			2		PM			X	X	X	X		
7	Dup-2			2					X	X	X			
8	MW-6 SS-2			1						X	X	X		
9	MW-6 SS-6			2					X	X	X			
10														

Comments:			Method of Delivery: Drop Box		
Relinquished By (Sign):	Received By Driver/Depot:	Received at Lab: Blm	Verified By: Blm		
Relinquished By (Print): Mike Kosin	Date/Time: Aug 16/21	Date/Time: Aug 16, 2021 15:50	Date/Time: Aug 16, 2021 16:35		
Date/Time: Aug 16, 2021 10:00AM	Temperature: 21.9 °C	Temperature: 7.8 °C	pH Verified: ☐ By: _____		

Certificate of Analysis

Pinchin Ltd. (Ottawa)

1 Hines Road, Suite 200
Kanata, ON K2K 3C7
Attn: Michael Kosiw

Client PO:
Project: 290064-002
Custody: 60577

Report Date: 26-Aug-2021
Order Date: 23-Aug-2021

Order #: 2135128

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

Paracel ID	Client ID
2135128-01	MW-2
2135128-02	MW-5
2135128-03	MW-6
2135128-04	Dup-3
2135128-05	Trip Blank

Approved By:



Dale Robertson, BSc
Laboratory Director

Certificate of Analysis

Report Date: 26-Aug-2021

Client: Pinchin Ltd. (Ottawa)

Order Date: 23-Aug-2021

Client PO:

Project Description: 290064-002

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
PHC F1	CWS Tier 1 - P&T GC-FID	24-Aug-21	24-Aug-21
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	25-Aug-21	25-Aug-21
REG 153: PAHs by GC-MS	EPA 625 - GC-MS, extraction	25-Aug-21	25-Aug-21
REG 153: VOCs by P&T GC/MS	EPA 624 - P&T GC-MS	24-Aug-21	24-Aug-21

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

Report Date: 26-Aug-2021

Order Date: 23-Aug-2021

Project Description: 290064-002

	Client ID:	MW-2	MW-5	MW-6	Dup-3
	Sample Date:	23-Aug-21 09:00	23-Aug-21 09:00	23-Aug-21 09:00	23-Aug-21 09:00
	Sample ID:	2135128-01	2135128-02	2135128-03	2135128-04
	MDL/Units	Water	Water	Water	Water
Volatiles					
Acetone	5.0 ug/L	<5.0	<5.0	<5.0	<5.0
Benzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Bromoform	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Bromomethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Carbon Tetrachloride	0.2 ug/L	<0.2	<0.2	<0.2	<0.2
Chlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Chloroform	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Dichlorodifluoromethane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
cis-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
trans-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,3-Dichloropropene, total	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Ethylene dibromide (dibromoethane, 1,2-)	0.2 ug/L	<0.2	<0.2	<0.2	<0.2
Hexane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	<5.0	<5.0	<5.0	<5.0
Methyl Isobutyl Ketone	5.0 ug/L	<5.0	<5.0	<5.0	<5.0
Methyl tert-butyl ether	2.0 ug/L	<2.0	<2.0	<2.0	<2.0
Methylene Chloride	5.0 ug/L	<5.0	<5.0	<5.0	<5.0
Styrene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,1,1,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Tetrachloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Toluene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5

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

Report Date: 26-Aug-2021

Order Date: 23-Aug-2021

Project Description: 290064-002

	Client ID: Sample Date: Sample ID:	MW-2 23-Aug-21 09:00 2135128-01 Water	MW-5 23-Aug-21 09:00 2135128-02 Water	MW-6 23-Aug-21 09:00 2135128-03 Water	Dup-3 23-Aug-21 09:00 2135128-04 Water
	MDL/Units				
1,1,2-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Trichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0
Vinyl chloride	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
m,p-Xylenes	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
o-Xylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Xylenes, total	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
4-Bromofluorobenzene	Surrogate	88.5%	90.2%	91.5%	91.8%
Dibromofluoromethane	Surrogate	101%	100%	100%	103%
Toluene-d8	Surrogate	103%	103%	102%	102%

Hydrocarbons

F1 PHCs (C6-C10)	25 ug/L	<25	<25	<25	<25
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	-

Semi-Volatiles

Acenaphthene	0.05 ug/L	<0.05	<0.05	<0.05	-
Acenaphthylene	0.05 ug/L	<0.05	<0.05	<0.05	-
Anthracene	0.01 ug/L	<0.01	<0.01	<0.01	-
Benzo [a] anthracene	0.01 ug/L	<0.01	<0.01	<0.01	-
Benzo [a] pyrene	0.01 ug/L	<0.01	<0.01	<0.01	-
Benzo [b] fluoranthene	0.05 ug/L	<0.05	<0.05	<0.05	-
Benzo [g,h,i] perylene	0.05 ug/L	<0.05	<0.05	<0.05	-
Benzo [k] fluoranthene	0.05 ug/L	<0.05	<0.05	<0.05	-
Chrysene	0.05 ug/L	<0.05	<0.05	<0.05	-
Dibenzo [a,h] anthracene	0.05 ug/L	<0.05	<0.05	<0.05	-
Fluoranthene	0.01 ug/L	<0.01	<0.01	<0.01	-
Fluorene	0.05 ug/L	<0.05	<0.05	<0.05	-
Indeno [1,2,3-cd] pyrene	0.05 ug/L	<0.05	<0.05	<0.05	-
1-Methylnaphthalene	0.05 ug/L	<0.05	<0.05	<0.05	-
2-Methylnaphthalene	0.05 ug/L	<0.05	<0.05	<0.05	-
Methylnaphthalene (1&2)	0.10 ug/L	<0.10	<0.10	<0.10	-
Naphthalene	0.05 ug/L	<0.05	<0.05	<0.05	-
Phenanthrene	0.05 ug/L	<0.05	<0.05	<0.05	-
Pyrene	0.01 ug/L	<0.01	<0.01	<0.01	-
2-Fluorobiphenyl	Surrogate	100%	86.2%	90.2%	-
Terphenyl-d14	Surrogate	123%	112%	110%	-

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

Report Date: 26-Aug-2021
 Order Date: 23-Aug-2021
 Project Description: 290064-002

Client ID:	Trip Blank	-	-	-
Sample Date:	23-Aug-21 09:00	-	-	-
Sample ID:	2135128-05	-	-	-
MDL/Units	Water	-	-	-

Volatiles

Acetone	5.0 ug/L	<5.0	-	-	-
Benzene	0.5 ug/L	<0.5	-	-	-
Bromodichloromethane	0.5 ug/L	<0.5	-	-	-
Bromoform	0.5 ug/L	<0.5	-	-	-
Bromomethane	0.5 ug/L	<0.5	-	-	-
Carbon Tetrachloride	0.2 ug/L	<0.2	-	-	-
Chlorobenzene	0.5 ug/L	<0.5	-	-	-
Chloroform	0.5 ug/L	<0.5	-	-	-
Dibromochloromethane	0.5 ug/L	<0.5	-	-	-
Dichlorodifluoromethane	1.0 ug/L	<1.0	-	-	-
1,2-Dichlorobenzene	0.5 ug/L	<0.5	-	-	-
1,3-Dichlorobenzene	0.5 ug/L	<0.5	-	-	-
1,4-Dichlorobenzene	0.5 ug/L	<0.5	-	-	-
1,1-Dichloroethane	0.5 ug/L	<0.5	-	-	-
1,2-Dichloroethane	0.5 ug/L	<0.5	-	-	-
1,1-Dichloroethylene	0.5 ug/L	<0.5	-	-	-
cis-1,2-Dichloroethylene	0.5 ug/L	<0.5	-	-	-
trans-1,2-Dichloroethylene	0.5 ug/L	<0.5	-	-	-
1,2-Dichloropropane	0.5 ug/L	<0.5	-	-	-
cis-1,3-Dichloropropylene	0.5 ug/L	<0.5	-	-	-
trans-1,3-Dichloropropylene	0.5 ug/L	<0.5	-	-	-
1,3-Dichloropropene, total	0.5 ug/L	<0.5	-	-	-
Ethylbenzene	0.5 ug/L	<0.5	-	-	-
Ethylene dibromide (dibromoethane, 1	0.2 ug/L	<0.2	-	-	-
Hexane	1.0 ug/L	<1.0	-	-	-
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	<5.0	-	-	-
Methyl Isobutyl Ketone	5.0 ug/L	<5.0	-	-	-
Methyl tert-butyl ether	2.0 ug/L	<2.0	-	-	-
Methylene Chloride	5.0 ug/L	<5.0	-	-	-
Styrene	0.5 ug/L	<0.5	-	-	-
1,1,1,2-Tetrachloroethane	0.5 ug/L	<0.5	-	-	-
1,1,2,2-Tetrachloroethane	0.5 ug/L	<0.5	-	-	-
Tetrachloroethylene	0.5 ug/L	<0.5	-	-	-
Toluene	0.5 ug/L	<0.5	-	-	-

Certificate of Analysis

Report Date: 26-Aug-2021

Client: Pinchin Ltd. (Ottawa)

Order Date: 23-Aug-2021

Client PO:

Project Description: 290064-002

	Client ID:	Trip Blank	-	-	-
	Sample Date:	23-Aug-21 09:00	-	-	-
	Sample ID:	2135128-05	-	-	-
	MDL/Units	Water	-	-	-
1,1,1-Trichloroethane	0.5 ug/L	<0.5	-	-	-
1,1,2-Trichloroethane	0.5 ug/L	<0.5	-	-	-
Trichloroethylene	0.5 ug/L	<0.5	-	-	-
Trichlorofluoromethane	1.0 ug/L	<1.0	-	-	-
Vinyl chloride	0.5 ug/L	<0.5	-	-	-
m,p-Xylenes	0.5 ug/L	<0.5	-	-	-
o-Xylene	0.5 ug/L	<0.5	-	-	-
Xylenes, total	0.5 ug/L	<0.5	-	-	-
4-Bromofluorobenzene	Surrogate	94.3%	-	-	-
Dibromofluoromethane	Surrogate	99.1%	-	-	-
Toluene-d8	Surrogate	105%	-	-	-
Hydrocarbons					
F1 PHCs (C6-C10)	25 ug/L	<25	-	-	-

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

Report Date: 26-Aug-2021
Order Date: 23-Aug-2021
Project Description: 290064-002

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						
Semi-Volatiles									
Acenaphthene	ND	0.05	ug/L						
Acenaphthylene	ND	0.05	ug/L						
Anthracene	ND	0.01	ug/L						
Benzo [a] anthracene	ND	0.01	ug/L						
Benzo [a] pyrene	ND	0.01	ug/L						
Benzo [b] fluoranthene	ND	0.05	ug/L						
Benzo [g,h,i] perylene	ND	0.05	ug/L						
Benzo [k] fluoranthene	ND	0.05	ug/L						
Chrysene	ND	0.05	ug/L						
Dibenzo [a,h] anthracene	ND	0.05	ug/L						
Fluoranthene	ND	0.01	ug/L						
Fluorene	ND	0.05	ug/L						
Indeno [1,2,3-cd] pyrene	ND	0.05	ug/L						
1-Methylnaphthalene	ND	0.05	ug/L						
2-Methylnaphthalene	ND	0.05	ug/L						
Methylnaphthalene (1&2)	ND	0.10	ug/L						
Naphthalene	ND	0.05	ug/L						
Phenanthrene	ND	0.05	ug/L						
Pyrene	ND	0.01	ug/L						
Surrogate: 2-Fluorobiphenyl	16.1		ug/L		80.6	50-140			
Surrogate: Terphenyl-d14	21.1		ug/L		106	50-140			
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						

Certificate of Analysis

Report Date: 26-Aug-2021

Client: Pinchin Ltd. (Ottawa)

Order Date: 23-Aug-2021

Client PO:

Project Description: 290064-002

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
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	68.6		ug/L		85.8	50-140			
Surrogate: Dibromofluoromethane	82.1		ug/L		103	50-140			
Surrogate: Toluene-d8	84.3		ug/L		105	50-140			

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

Report Date: 26-Aug-2021
Order Date: 23-Aug-2021
Project Description: 290064-002

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	73.1		ug/L		91.4	50-140			
Surrogate: Dibromofluoromethane	81.3		ug/L		102	50-140			
Surrogate: Toluene-d8	82.1		ug/L		103	50-140			

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

Report Date: 26-Aug-2021
Order Date: 23-Aug-2021
Project Description: 290064-002

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	2030	25	ug/L	ND	101	68-117			
F2 PHCs (C10-C16)	1730	100	ug/L	ND	108	60-140			
F3 PHCs (C16-C34)	4110	100	ug/L	ND	105	60-140			
F4 PHCs (C34-C50)	2560	100	ug/L	ND	103	60-140			
Semi-Volatiles									
Acenaphthene	4.33	0.05	ug/L	ND	86.5	50-140			
Acenaphthylene	3.05	0.05	ug/L	ND	61.1	50-140			
Anthracene	3.94	0.01	ug/L	ND	78.9	50-140			
Benzo [a] anthracene	4.08	0.01	ug/L	ND	81.7	50-140			
Benzo [a] pyrene	4.76	0.01	ug/L	ND	95.2	50-140			
Benzo [b] fluoranthene	5.63	0.05	ug/L	ND	113	50-140			
Benzo [g,h,i] perylene	4.82	0.05	ug/L	ND	96.3	50-140			
Benzo [k] fluoranthene	5.22	0.05	ug/L	ND	104	50-140			
Chrysene	4.57	0.05	ug/L	ND	91.5	50-140			
Dibenzo [a,h] anthracene	4.93	0.05	ug/L	ND	98.6	50-140			
Fluoranthene	3.89	0.01	ug/L	ND	77.7	50-140			
Fluorene	3.87	0.05	ug/L	ND	77.3	50-140			
Indeno [1,2,3-cd] pyrene	4.23	0.05	ug/L	ND	84.5	50-140			
1-Methylnaphthalene	4.24	0.05	ug/L	ND	84.8	50-140			
2-Methylnaphthalene	4.71	0.05	ug/L	ND	94.3	50-140			
Naphthalene	4.64	0.05	ug/L	ND	92.8	50-140			
Phenanthrene	3.84	0.05	ug/L	ND	76.8	50-140			
Pyrene	4.01	0.01	ug/L	ND	80.2	50-140			
Surrogate: 2-Fluorobiphenyl	17.7		ug/L		88.3	50-140			
Surrogate: Terphenyl-d14	20.4		ug/L		102	50-140			
Volatiles									
Acetone	69.6	5.0	ug/L	ND	69.6	50-140			
Benzene	37.2	0.5	ug/L	ND	93.0	60-130			
Bromodichloromethane	35.9	0.5	ug/L	ND	89.8	60-130			
Bromoform	36.9	0.5	ug/L	ND	92.2	60-130			
Bromomethane	24.6	0.5	ug/L	ND	61.6	50-140			
Carbon Tetrachloride	36.2	0.2	ug/L	ND	90.4	60-130			
Chlorobenzene	30.9	0.5	ug/L	ND	77.3	60-130			
Chloroform	38.9	0.5	ug/L	ND	97.3	60-130			
Dibromochloromethane	28.2	0.5	ug/L	ND	70.4	60-130			
Dichlorodifluoromethane	40.5	1.0	ug/L	ND	101	50-140			
1,2-Dichlorobenzene	44.8	0.5	ug/L	ND	112	60-130			
1,3-Dichlorobenzene	43.2	0.5	ug/L	ND	108	60-130			
1,4-Dichlorobenzene	44.9	0.5	ug/L	ND	112	60-130			
1,1-Dichloroethane	39.1	0.5	ug/L	ND	97.6	60-130			
1,2-Dichloroethane	35.0	0.5	ug/L	ND	87.4	60-130			
1,1-Dichloroethylene	33.7	0.5	ug/L	ND	84.3	60-130			
cis-1,2-Dichloroethylene	37.8	0.5	ug/L	ND	94.5	60-130			
trans-1,2-Dichloroethylene	37.8	0.5	ug/L	ND	94.5	60-130			
1,2-Dichloropropane	38.0	0.5	ug/L	ND	94.9	60-130			
cis-1,3-Dichloropropylene	34.0	0.5	ug/L	ND	85.0	60-130			
trans-1,3-Dichloropropylene	33.3	0.5	ug/L	ND	83.3	60-130			
Ethylbenzene	42.8	0.5	ug/L	ND	107	60-130			

Certificate of Analysis

Report Date: 26-Aug-2021

Client: Pinchin Ltd. (Ottawa)

Order Date: 23-Aug-2021

Client PO:

Project Description: 290064-002

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Ethylene dibromide (dibromoethane, 1,2-	30.7	0.2	ug/L	ND	76.7	60-130			
Hexane	39.8	1.0	ug/L	ND	99.4	60-130			
Methyl Ethyl Ketone (2-Butanone)	100	5.0	ug/L	ND	100	50-140			
Methyl Isobutyl Ketone	102	5.0	ug/L	ND	102	50-140			
Methyl tert-butyl ether	101	2.0	ug/L	ND	101	50-140			
Methylene Chloride	42.6	5.0	ug/L	ND	106	60-130			
Styrene	37.9	0.5	ug/L	ND	94.8	60-130			
1,1,1,2-Tetrachloroethane	37.5	0.5	ug/L	ND	93.8	60-130			
1,1,2,2-Tetrachloroethane	30.9	0.5	ug/L	ND	77.2	60-130			
Tetrachloroethylene	27.4	0.5	ug/L	ND	68.4	60-130			
Toluene	33.8	0.5	ug/L	ND	84.4	60-130			
1,1,1-Trichloroethane	38.0	0.5	ug/L	ND	95.0	60-130			
1,1,2-Trichloroethane	38.0	0.5	ug/L	ND	95.1	60-130			
Trichloroethylene	38.9	0.5	ug/L	ND	97.4	60-130			
Trichlorofluoromethane	30.6	1.0	ug/L	ND	76.5	60-130			
Vinyl chloride	40.8	0.5	ug/L	ND	102	50-140			
m,p-Xylenes	90.9	0.5	ug/L	ND	114	60-130			
o-Xylene	37.4	0.5	ug/L	ND	93.5	60-130			
Surrogate: 4-Bromofluorobenzene	61.7		ug/L		77.1	50-140			
Surrogate: Dibromofluoromethane	78.7		ug/L		98.4	50-140			
Surrogate: Toluene-d8	68.1		ug/L		85.1	50-140			

Certificate of Analysis

Client: Pinchin Ltd. (Ottawa)

Client PO:

Report Date: 26-Aug-2021

Order Date: 23-Aug-2021

Project Description: 290064-002

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.



Client Name: <u>Shandlin Ltd</u>	Project Ref: <u>290064-002</u>	Page <u>1</u> of <u>1</u>
Contact Name: <u>M. Kozlov, M. Ryan</u>	Quote #:	Turnaround Time ☐ 1 day ☐ 3 day ☐ 2 day ☒ Regular
Address: <u>1 Hines Rd, Kanata, ON</u>	PO #:	
Telephone:	E-mail: <u>Con file</u>	
		Date Required: _____

☐ REG 153/04 ☐ REG 406/19 ☐ 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)	Required Analysis PHCS FI-F4 VOCs (F) PAHs (F) VOCs																
Sample ID/Location Name		Matrix	Air Volume	# of Containers	Sample Taken															
					Date	Time														
1	MW-2	GW	1	4	Aug 23	AM	X	X	X											
2	MW-5	1	1	1	2021	1	X	X	X											
3	MW-6	1	1	1	1	1	X	X	X											
4	Dup-3	1	1	2	1	AM		X												
5	Trip Blank	1	1	1	1	1						X								
6																				
7																				
8																				
9																				
10																				

Comments:				Method of Delivery: <u>PARACEL COURIER</u>			
Relinquished By (Sign): <u>M. Kozlov</u>		Received By Driver/Depot: <u>A. J. LOUIE</u>		Received at Lab: <u>Srinivasan Dohmai</u>		Verified By: <u>[Signature]</u>	
Relinquished By (Print): <u>M. Kozlov</u>		Date/Time: <u>23/08/21 3:04</u>		Date/Time: <u>Aug 23, 2021 04:22</u>		Date/Time: <u>Aug 23, 2021 5:07</u>	
Date/Time: <u>Aug 23, 2:30pm</u>		Temperature: _____ °C <u>FA</u>		Temperature: <u>20.1</u> °C		pH Verified: ☐ By: _____	