

# PHASE TWO ENVIRONMENTAL SITE ASSESSMENT 476 WILBROD STREET, OTTAWA, ON



Project No.: CCO-22-3130

Prepared for:

Sleepwell Property Management  
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August 11, 2022

McINTOSH PERRY

## Executive Summary

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McIntosh Perry Consulting Engineers Ltd. (McIntosh Perry) was retained by Sleepwell Property Management ('the Client') to conduct a Phase Two Environmental Site Assessment (ESA) at 476 Wilbrod Street, Ottawa, Ontario ('the Site', see Figure 1). The property is currently developed with a three-storey wood-frame brick-clad residential building with one (1) basement level, as well as associated parking and landscaped areas.

It is understood that this Phase Two ESA is being completed as a component of the City of Ottawa site plan submission process, in support of the future redevelopment of the Site with an additional residential building. This does not represent a change to a more sensitive land use, and as such, a Record of Site Condition (RSC) would not be required under O.Reg. 153/04. However, a Phase Two ESA completed in general accordance with O.Reg. 153/04 would be required for the City of Ottawa Site Plan Approval (SPA) process.

McIntosh Perry completed a Phase One Environmental Site Assessment (ESA) (April 8, 2022) for the subject property. The Phase One ESA identified the following potential environmental concern in relation to the Site:

- Evidence of a historic fuel oil above ground storage tank (AST) at the Site within the basement level boiler room was identified during the Site reconnaissance. Evidence included staining, a concrete pad, fuel piping, and wall discolouration.

Based on this information, a Phase Two Environmental Site Assessment (ESA) was recommended for Site to assess soil quality.

The Phase Two ESA involved the drilling of six (6) boreholes on the Site; two (2) on the interior of the boiler room and three (3) on the exterior wall adjacent to the boiler room in the potential location of a buried underground storage tank (UST) (if present). Six (6) soil samples (five (5) originals and one (1) duplicate) were collected and submitted for laboratory analysis of benzene, toluene, ethylbenzene and xylenes (BTEX) and petroleum hydrocarbons (PHCs) in four fractions (F1-F4).

The findings of the Phase Two ESA are summarized as follows:

- Site stratigraphy consists of sand overlying clay, silty clay, and clayey sand;
- All soil results were in compliance with applicable MECP Table 3 Site Condition Standards.

Based on the results of the investigation, the potential historical presence of an AST at the Site does not appear to have resulted in soil contamination at the Site. No evidence of a UST was observed during the Phase Two ESA. Accordingly, no further environmental investigative work is recommended.

## TABLE OF CONTENTS

<b>1.0</b>	<b>INTRODUCTION</b>	<b>1</b>
1.1	Property Information	1
1.1.1	Property Identification	1
1.1.2	Property Ownership and Contact Details	2
1.1.3	Current and Proposed Future Uses	2
1.2	Applicable Site Condition Standard	2
<b>2.0</b>	<b>BACKGROUND INFORMATION</b>	<b>3</b>
2.1	Physical Setting	3
2.1.1	Water Bodies and Areas of Natural Significance	3
2.1.2	Topography and Surface Water Drainage Features	3
2.1.3	Geology and Hydrogeology	3
2.1.4	Potable Water Source	3
2.2	Past Investigations	3
<b>3.0</b>	<b>SCOPE OF THE INVESTIGATION</b>	<b>4</b>
3.1	Media Investigated	4
3.1.1	Contaminants of Potential Concern	4
<b>4.0</b>	<b>METHODOLOGY</b>	<b>5</b>
4.1	General	5
4.2	Drilling	5
4.3	Impediments	5
4.4	Soil Sampling	5
4.5	Field Screening Measurements	6
4.6	Groundwater – Monitoring Well Installation	6
4.7	Field Measurement of Water Quality Parameters	6
4.8	Groundwater – Monitoring and Sampling	6
4.9	Sediment: Sampling	6
4.10	Analytical Testing	6
4.11	Residue Management Procedures	6

4.12	Elevation Surveying.....	6
4.13	Quality Assurance and Quality Control Measures.....	7
<b>5.0</b>	<b>RESULTS.....</b>	<b>8</b>
5.1	Geology.....	8
5.2	Groundwater: Elevations and Flow Direction.....	8
5.3	Coarse Soil Texture.....	8
5.4	Soil: Field Screening.....	8
5.5	Soil Quality.....	8
5.6	Groundwater Quality.....	9
5.7	Sediment Quality.....	9
5.8	Quality Assurance and Quality Control Results.....	9
5.9	Phase Two Conceptual Site Model.....	9
5.9.1	Potentially Contaminating Activities.....	9
5.9.2	Area of Potential Environmental Concern.....	10
5.9.3	Subsurface Structures and Utilities.....	10
5.9.4	Physical Setting.....	10
5.9.5	Potable Site Condition Standards.....	10
5.9.6	Water Bodies and Areas of Natural Significance.....	10
5.9.7	Approximate Locations of Proposed Buildings and Other Structures.....	11
<b>6.0</b>	<b>CONCLUSIONS.....</b>	<b>12</b>
<b>7.0</b>	<b>LIMITATIONS.....</b>	<b>13</b>
<b>8.0</b>	<b>CLOSURE.....</b>	<b>14</b>
<b>9.0</b>	<b>REFERENCES.....</b>	<b>15</b>

**FIGURES**

Figure 1	Site Location
Figure 2	Borehole Locations
Figure 3	Soil Exceedance Plan

**TABLES**

Table 1	Analytical Results – Soil – BTEX, PHCs
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APPENDICES

Appendix A	Borehole Logs
Appendix B	Laboratory Certificates of Analysis

## 1.0 INTRODUCTION

McIntosh Perry Consulting Engineers Ltd. (McIntosh Perry) was retained by Colin Hopkins on behalf of Sleepwell Property Management ('the Client') to conduct a Phase Two Environmental Site Assessment (ESA) at 476 Wilbrod Street, Ottawa, Ontario ('the Site', see Figure 1). The property is currently developed with a three-storey residential property and exterior landscaped areas.

It is understood that this Phase Two ESA is being completed as a component of the City of Ottawa site plan submission process, in support of the potential construction of a residential addition to the Site. This does not represent a change to a more sensitive land use, and as such, a Record of Site Condition (RSC) would not be required under O.Reg. 153/04. However, a Phase Two ESA completed in general accordance with O.Reg. 153/04 would be required for the City of Ottawa Site Plan Approval (SPA) process.

McIntosh Perry completed a Phase One Environmental Site Assessment (ESA) (April 8, 2022) for the subject property. The Phase One ESA identified the following potential environmental concern in relation to the Site:

- Presence of a fuel oil aboveground storage tank within the basement level boiler room of the Site Building.

Based on this information, a Phase Two Environmental Site Assessment (ESA) was recommended for the Site to assess the soil quality.

A Phase Two ESA is typically used to confirm the presence (or absence) of contaminant(s) of concern and to characterize impacts, if any, to soil and/or groundwater. The Phase Two ESA was conducted in accordance with McIntosh Perry's standard procedures.

### 1.1 Property Information

The property is addressed as 476 Wilbrod Street and is currently developed with a three-storey residential building.

The Site has an official plan designation as Residential Fifth Density Zone, subzone B, with an 18 m height restriction (R5B H(18)) as shown on the City of Ottawa Zoning By-law (Sections 163 and 164).

The total area of the Site is approximately 0.09 hectares.

#### 1.1.1 Property Identification

The legal description of the entire property is as follows:

- PT LTS 7 & 8, PL 208649, AS IN CR450007; T/W CR450007; OTTAWA/NEPEAN (PIN: 042120234)

### 1.1.2 Property Ownership and Contact Details

McIntosh Perry was retained to complete this Phase Two ESA by Mr. Colin Hopkins on behalf of Sleepwell Property Management. Mr. Colin Hopkins can be contacted via email at colin@sleepwellmanagement.com. The property is currently owned by Sleepwell Property Management.

### 1.1.3 Current and Proposed Future Uses

The Site is currently occupied by a three-storey residential building with one basement level. At the time of writing this report, the Site Building appeared to be vacant and undergoing renovations. It is MP's understanding that the Client intends to purchase the property with the intention of redeveloping the Site with an additional residential building.

## 1.2 Applicable Site Condition Standard

The following parameters were used to select the most appropriate Site Condition Standards (SCS) for the site:

- Proposed property use is residential;
- The Site and surrounding properties in the area are serviced by municipal water supply and not by water wells (i.e., the subject site will continue to have treated potable water available, and potable groundwater standards do not need to be applied);
- Soil depth across the property is more than two metres on average (i.e., the site does not have shallow soil);
- The site is not located within 30 metres of a water body; the closest significant water body, the Rideau River, is approximately 0.17 kilometers (km) to the east of the Site;
- The site is not located near any areas of natural significance (e.g. Provincially Significant Wetland), and
- Native soil at the site is coarse textured (based on classification of borehole samples collected during the environmental investigation completed at the Site by McIntosh Perry, and assessment of grain size).

Given these parameters, it was determined that Ministry of the Environment, Conservation, and Parks (MECP) Ontario Regulation (O.Reg.) 153/04, as amended (Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act) is the most applicable reference criteria for the site. The following SCS were selected:

MECP Table 3 – Full Depth Generic Site Condition Standards in a non-potable groundwater condition, for residential land use, with coarse textured soils.

## 2.0 BACKGROUND INFORMATION

### 2.1 Physical Setting

#### 2.1.1 Water Bodies and Areas of Natural Significance

The closest permanent waterbody is the Rideau River (located 0.17 km east of the Site at its closest point).

No areas of natural significance were observed within the Site.

#### 2.1.2 Topography and Surface Water Drainage Features

Elevation at the Site is approximately 70 m above sea level (m asl). The topography is generally flat, with a slight slope towards the east.

The Site occurs within the Rideau Falls – Rideau River watershed. The Rideau River is located approximately 0.17 km east of the Site, at its closest point. Site drainage consists primarily of sheet flow to storm drains along Wilbrod Street, with infiltration interpreted to occur in areas of permeable ground surface.

#### 2.1.3 Geology and Hydrogeology

Geological maps of the area classify the overburden at the Site as older alluvial deposits consisting of clay, silt, sand, and gravel and also may contain organic remains (OGS, 2022).

Geological maps of the area classify the bedrock under the Site as shale, limestone, dolostone, and siltstone of the Georgian Bay, Blue Mountain, and Billings Formations (OGS, 2022).

On a local and regional scale, groundwater is interpreted to reflect local topography. Groundwater flow at the Site is expected to flow to the east, towards the Rideau River, located approximately 170 m east of the Site at its closest point.

#### 2.1.4 Potable Water Source

The Site is situated in the City of Ottawa. It is our understanding that 476 Wilbrod Street is currently serviced by the City of Ottawa municipal water distribution system; ground water is not used as a source of potable water.

## 2.2 Past Investigations

A Phase One ESA was conducted on the subject property by McIntosh Perry in April 2022. The Phase One ESA identified the historical presence of a fuel oil storage tank on-Site (potential interior aboveground storage tank (AST)) as an Area of Potential Environmental Concern. Accordingly, a Phase Two ESA was recommended for the Site per the requirements of O.Reg. 153/04.



### 3.0 SCOPE OF THE INVESTIGATION

The Phase Two ESA site investigation at the Site consisted of the following components:

- Underground service locate clearance provided by public utility service providers through Ontario One Call and a private utility locating service;
- Drilling of six (6) boreholes to a maximum depth of 4.03 m bgs by a qualified contractor (Strata Drilling Group of Carleton Place, Ontario);
- Submission of select “worst case” soil samples collected from each borehole, as determined through field screening, for laboratory analyses of benzene, toluene, ethylbenzene, and xylenes (BTEX) and petroleum hydrocarbons, fractions 1 through 4 (PHC F1-F4);
- Submission of representative soil samples for analysis of grain size, for determination of the appropriate MECP standards for the Site (undertaken as part of the environmental investigation); and
- Completion of a quality assurance/quality control (QA/QC) program consisting of the submission of field duplicate samples.

The Phase Two ESA was completed in general accordance with the requirements of O. Reg. 153/04 (as amended).

#### 3.1 Media Investigated

Soil samples were obtained from each borehole advanced during the investigation and submitted for laboratory analyses of the selected contaminants of potential concern (COPCs).

Based on observations during the Phase Two ESA and a general lack of visual and/or olfactory evidence of downward migration of contamination to the groundwater table, groundwater was not considered a potentially impacted medium, and accordingly, no groundwater samples were taken.

No water bodies were present on the Site and, as such, no sediment samples were collected as part of this Phase Two ESA.

##### 3.1.1 Contaminants of Potential Concern

The following contaminants of potential concern (COPCs) were identified with respect to the Site:

- Petroleum hydrocarbons Fractions 1 to 4 (PHCs): This parameter group consists of petroleum hydrocarbons of various carbon chain lengths commonly encountered in gasoline (PHC F1), diesel and furnace oil (PHC F2), and heavy oils and asphalts (PHC F3-F4).
- Benzene, toluene, ethylbenzene, and xylenes (BTEX): This parameter group consists of soluble components in gasoline, diesel, and fuel oil.

## 4.0 METHODOLOGY

### 4.1 General

Prior to the commencement of subsurface investigations, a private underground service locating company, Ottawa Locates of Ottawa, Ontario, obtained all applicable public and private underground service location reports/clearances (i.e., hydro, natural gas, telephone and cable).

### 4.2 Drilling

Kevin Cortez (Environmental Engineering Intern) of McIntosh Perry supervised a drilling and sampling program at the Site on July 20, 2022. McIntosh Perry advanced six (6) boreholes (BH1 through BH6) at the locations indicated on Figure 2.

Drilling services were provided by Strata Drilling Group of Carleton Place, Ontario using a GeoProbe 420M portable drill rig. Soil samples were collected on a continuous basis from ground surface through the overburden strata. Dedicated single-use plastic sampling tubes were used at each sampling location to minimize the possibility of cross-contamination.

### 4.3 Impediments

No physical impediments or denial of access were encountered at the Site during this Phase Two ESA.

It is noted that one (1) borehole (BH3) was terminated before the target depth was reached due to the presence of an inferred tree root. No direct or indirect evidence of the presence of an underground storage tank was encountered during the borehole drilling program.

### 4.4 Soil Sampling

Soil samples were taken from dedicated single-use plastic sampling tubes. Soil samples were collected with a gloved hand and deposited directly into sealed bags. The samples were then divided into two representative portions; one portion in a glass container for possible laboratory analysis (if selected based on screening results), and one portion in a plastic bag for soil headspace combustible gas screening, which was performed on site. Recovered soil samples were generally logged for soil type, moisture, colour, texture, and visual evidence of impacts.

Based on field observations and CGI/PID readings it was determined that the submission of six (6) soil samples (five (5) originals and one (1) blind duplicate) would be sufficient to characterize the identified APEC. Samples selected for laboratory analysis were placed into laboratory supplied sample jars, stored in a cooler with ice, and delivered directly to AGAT Laboratories (AGAT) of Ottawa, Ontario.

Soil samples that were selected for BTEX and F1 Hydrocarbon analysis were preserved immediately after sampling with laboratory supplied vials containing methanol.

Soil sample identification and details are included on the graphic borehole logs presented in Appendix A.

#### 4.5 Field Screening Measurements

Soil headspace vapour concentration readings of soil samples obtained from the boreholes were taken using a RKI Eagle 2 Gas (combined CGI and PID). The CGI was operated in methane elimination mode and both the CGI and PID were calibrated prior to use in the field. Calibration was performed following the manufacturer's instructions.

#### 4.6 Groundwater – Monitoring Well Installation

Installation of groundwater monitoring wells was not undertaken as part of this investigation.

#### 4.7 Field Measurement of Water Quality Parameters

Field measurement of water quality parameters was not undertaken as part of this investigation.

#### 4.8 Groundwater – Monitoring and Sampling

Groundwater monitoring and sampling were not undertaken as part of this investigation.

#### 4.9 Sediment: Sampling

No water bodies are present on the Site. As such, sediment sampling was not conducted as part of this Phase Two ESA.

#### 4.10 Analytical Testing

All soil and water samples selected for laboratory analysis were submitted to ALS Laboratory Group of Ottawa, Ontario, under strict 'chain of custody' documentation protocols.

Samples were submitted for laboratory analysis of the following parameter groups:

- Benzene, toluene, ethylbenzene and xylenes (BTEX)
- Petroleum hydrocarbons (PHCs) in four fractions (F1-F4) according to MECP requirements

Copies of all laboratory Certificates of Analysis and chain of custody documentation are included in Appendix B.

#### 4.11 Residue Management Procedures

Given the drilling method (direct-push with sampling tubes), no excess soil cuttings were generated as part of the drilling program, and all soil obtained from the boreholes was retained by McIntosh Perry in the form of samples.

#### 4.12 Elevation Surveying

Elevation surveying was not completed as a part of this assessment.

#### **4.13** Quality Assurance and Quality Control Measures

All activities completed as part of this Phase Two ESA were conducted in accordance with McIntosh Perry's Standard Operating Procedures (SOPs). Details of QA/QC measures, including sampling containers, preservation, labelling, handling, and custody, equipment cleaning procedures, and field quality control measurements can be provided upon request.

Additionally, all soil samples submitted as part of this assessment were handled in accordance with laboratory analytical protocols with respect to holding time, preservation method, storage requirements, and container type. All Certificates of Analysis provided by the laboratory are appended to this report in Appendix B.

## 5.0 RESULTS

### 5.1 Geology

Overburden at the site generally consisted of sand to depths of 1.1 to 2.7 m, underlain by clay, silty, clay, and sandy clay to clayey sand.

Bedrock, or refusal on suspected bedrock, were not encountered as part of this investigation.

Stratigraphic details are provided on the borehole logs (Appendix A) appended to this report.

### 5.2 Groundwater: Elevations and Flow Direction

Groundwater elevations and flow direction were not completed as part of this assessment.

### 5.3 Coarse Soil Texture

Representative soil samples from the sand and clay layers were submitted for grain size analysis to determine appropriate Site Condition Standards. Based on the grain size analysis and the interbedded nature of sand and clay at the Site, the more stringent coarse-grained Site Condition Standards are considered appropriate as a conservative measure.

The grain size analysis results are provided in Appendix B.

### 5.4 Soil: Field Screening

Soil headspace measurements were taken using an RKI Eagle 2 combination combustible gas indicator (CGI) and photoionization detector (PID) operating in methane elimination mode. The CGI/PID readings were intended to identify “worst-case” samples from each borehole. Soil vapour readings were 0 ppm using the photoionization detector calibrated to isobutylene and ranged from 0 to 750 ppm using the combustible gas indicator calibrated to hexane. A slight hydrocarbon odour was detected at BH2-SS6 and BH4-SS9; however, the remaining soil samples did not exhibit visual or olfactory evidence of contamination.

### 5.5 Soil Quality

All soil analysis results were compared to the applicable SCS (MECP Table 3 SCS) as presented in the following table appended to this report:

- Table 3 – Soil Analytical Results: VOC, BTEX, PHCs, PAHs, Metals and Inorganics

Sample depths are indicated on the tables and borehole logs presented in Appendix A. Laboratory Certificates of Analysis are included in Appendix B.

The analytical data is summarized as follows:

## BTEX

Analytical results indicate that all BTEX concentrations were below laboratory detection limits and therefore in compliance with MECP Table 3 SCS.

## PHCs

Analytical results indicate that all PHC F1-F4 concentrations were below laboratory detection limits and therefore in compliance with MECP Table 3 SCS.

## 5.6 Groundwater Quality

Groundwater quality was not assessed as part of this Phase Two ESA.

## 5.7 Sediment Quality

Sediment quality was not assessed as part of this Phase Two ESA.

## 5.8 Quality Assurance and Quality Control Results

All soil samples submitted as part of this assessment were handled in accordance with laboratory analytical protocols with respect to holding time, preservation method, storage requirements, and container type. A Certificate of Analysis has been received for each sample submitted for analysis, and all Certificates of Analysis are appended to this report.

One (1) blind duplicate sample (DUP-1) was collected from location BH6-SS18 and analyzed for BTEX and PHCs. All BTEX and PHC concentrations in the original and duplicate samples were below laboratory detection limits. Accordingly, relative percent difference (RPD) calculations could not be performed; however, significant variation between the original and duplicate samples was not observed. Overall, the quality of the field data collected during this Phase Two ESA are considered to be sufficient to meet the overall objectives of this assessment.

All tasks completed as a part of this investigation were completed in accordance with McIntosh Perry's Standard Operating Procedures and in general accordance with O.Reg. 153/04 (as amended).

## 5.9 Phase Two Conceptual Site Model

The Phase Two Property is located at 476 Wilbrod Street in Ottawa ("the Site") and is approximately 0.09 hectares in area. The Phase Two Property is currently developed with a three-storey wood-frame brick-clad residential building with one basement level and associated paved parking and landscaped areas. Plans showing the location and layout of the Phase Two Property are provided as Figures 1 and 2, respectively.

### 5.9.1 Potentially Contaminating Activities

The following PCAs were identified in on the Phase Two Property, in the previous Phase One ESA:

- Evidence of a historic fuel oil AST at the Site within the basement level boiler room was identified during the Site reconnaissance. Evidence included staining, a concrete pad, fuel piping, and wall discolouration.

No additional PCAs were identified within the Phase Two Study Area, including on the Phase Two Property, during the 2022 McIntosh Perry Phase One ESA.

### 5.9.2 Area of Potential Environmental Concern

One (1) APEC was identified at the Site where the historic fuel oil AST was located within the basement level boiler room.

### 5.9.3 Subsurface Structures and Utilities

As part of the Phase Two ESA, utility service clearances were provided by public and private locating companies. The depths of these utilities were not determined during the Phase Two ESA.

### 5.9.4 Physical Setting

#### 5.9.4.1 Stratigraphy

During the field program conducted at the Phase Two Property, subsurface soil was determined to consist of sand overlying clay, sandy clay, and silty clay. A detailed description of the stratigraphy observed during the Phase Two ESA is provided on borehole logs within Appendix C.

#### 5.9.4.2 Hydrogeology

Groundwater levels were not measured as part of this assessment. On a local and regional scale, groundwater is interpreted to reflect local topography. Groundwater flow at the Site is expected to flow to the east, towards the Rideau River, located approximately 170 m east of the Site at its closest point.

#### 5.9.4.3 Bedrock

Bedrock was not encountered during this investigation.

### 5.9.5 Potable Site Condition Standards

The Phase Two Property is serviced by the City of Ottawa municipal water distribution system; ground water is not used as a source of potable water.

### 5.9.6 Water Bodies and Areas of Natural Significance

The closest permanent waterbody is the Rideau River (located 0.17 km east of the Site at its closest point).

No areas of natural significance were observed within the Site.

#### 5.9.7 Approximate Locations of Proposed Buildings and Other Structures

It is our understanding that the current Site building, a three-storey wood-frame brick-clad residential building with one basement level, is to be retained and an additional residential building is to be developed at the Site.



## **6.0 CONCLUSIONS**

Based on the results of the investigation, the potential historical presence of an aboveground fuel storage tank at the Site does not appear to have resulted in soil contamination at the Site. No evidence of an underground storage tank was observed during the Phase Two ESA. Accordingly, no further environmental investigative work is recommended.

## 7.0 LIMITATIONS

This report has been prepared, and the work referred to in this report has been undertaken by, McIntosh Perry Consulting Engineers Ltd. for Sleepwell Property Management (Sleepwell). It is intended for the sole, and exclusive use of Sleepwell and any affiliated companies and partners and their respective financial institutions, insurers, agents, employees and advisors (collectively, Sleepwell). The report may not be relied upon by any other person or entity without the express written consent of McIntosh Perry. Any use which a third party makes of this report, or any reliance on decisions made based on it, without a Reliance Letter are the responsibility of such third parties. McIntosh Perry Consulting Engineers Ltd. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

The investigation undertaken by McIntosh Perry Consulting Engineers Ltd. with respect to this report and any conclusions or recommendations made in this report reflect McIntosh Perry Consulting Engineers Ltd.'s judgment based on the site conditions observed at the time of the site investigations, inspections and sampling on the date(s) set out in this report and on information available at the time of the preparation of this report.

This report has been prepared for specific application to this site and it is based, in part, upon visual observation of the site, subsurface investigation at discrete locations and depths, and specific analysis of specific chemical parameters and materials during a specific time interval, all as described in this report. Unless otherwise stated, the findings cannot be extended to previous or future site conditions, portions of the site which were unavailable for direct investigation, subsurface locations which were not investigated directly, or chemical parameters, materials or analysis which were not addressed. Substances other than those addressed by the investigation described in this report may exist within the site, substances addressed by the investigation may exist in areas of the site not investigated and concentrations of substances addressed which are different than those reported may exist in areas other than the locations from which samples were taken.

If site conditions or applicable standards change or if any additional information becomes available at a future date, modifications to the findings, conclusions and recommendations in this report may be necessary.

## 8.0 CLOSURE

We trust that this information is satisfactory for your present requirements. Should you have any questions or require additional information, please do not hesitate to contact the undersigned.

Respectfully submitted,

McIntosh Perry Consulting Engineers Ltd.



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Ontario Ministry of Environment, Conservation and Parks (MECP), Ontario Regulation (O.Reg.) 153/04; Records of Site Condition – Part XV.1 of the Act (i.e. The Environmental Protection Act), as amended.

Ontario Geological Survey (OGS), 2017 – Google Earth™ (website: [http://www.mndmf.gov.on.ca/mines/ogs\\_earth\\_e.asp](http://www.mndmf.gov.on.ca/mines/ogs_earth_e.asp)).

'Phase One Environmental Assessment, 476 Wilbrod Street, Ottawa, Ontario.' McIntosh Perry Consulting Engineers Ltd., April 8, 2022.

# PHASE TWO ENVIRONMENTAL SITE ASSESSMENT 476 WILBROD STREET, OTTAWA, ON










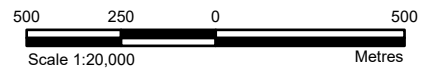
FIGURES



**Site Location**

**LEGEND**

-  Site Location
-  Local Road
-  Major Road
-  Railroad
-  Watercourse
-  Waterbody
-  Wooded Area



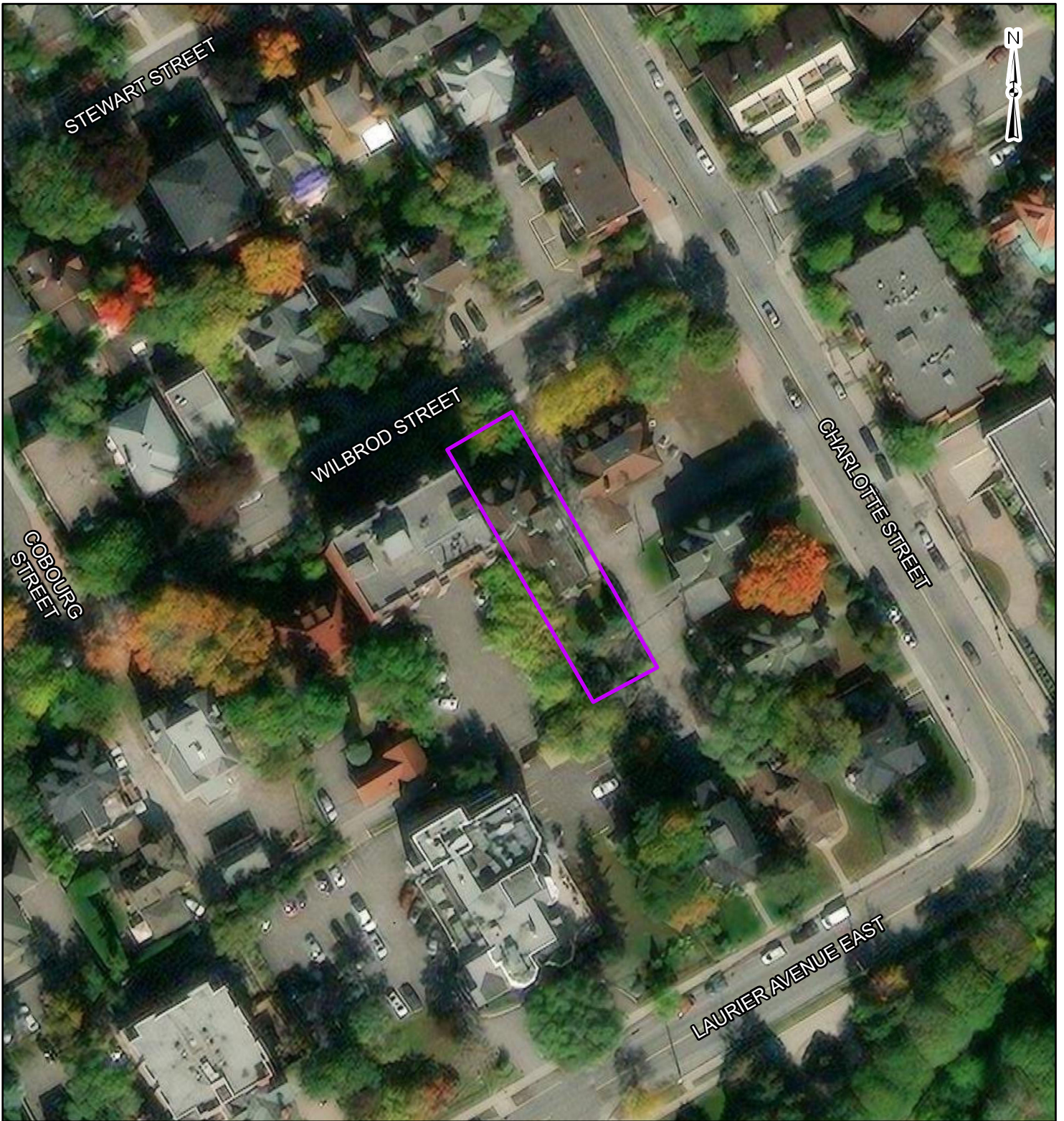
**REFERENCE**

GIS data provided by the Ontario Ministry of Northern Development, Mines, Natural Resources and Forestry, 2022.


CLIENT:		<b>SLEEPWELL PROPERTY MANAGEMENT</b>	
PROJECT:		<b>PHASE TWO ESA 476 WILBROD STREET, OTTAWA, ONTARIO</b>	
TITLE:		<b>SITE LOCATION</b>	
PROJECT NO:	CCO-22-3130	FIGURE:	<b>1</b>
Date	Aug., 11, 2022	GIS	SK
Checked By	JG		

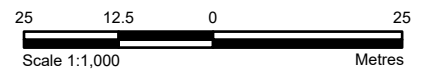
**McINTOSH PERRY**  
 115 Walgreen Road, RR3, Carp, ON K0A1L0  
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C:\Users\M\_Grunstra\OneDrive\Documents\Projects\2022\CCO-22-3130\anrx\Environmental\Phase2\ESA\CCO-22-3130.aprx



**LEGEND**

 Approximate Site Boundary



**REFERENCE**

GIS data provided by the Ontario Ministry of Northern Development, Mines, Natural Resources and Forestry, 2022.

CLIENT:		<b>SLEEPWELL PROPERTY MANAGEMENT</b>	
PROJECT:		<b>PHASE TWO ESA 476 WILBROD STREET, OTTAWA, ONTARIO</b>	
TITLE:		<b>SITE LAYOUT</b>	
<b>McINTOSH PERRY</b> 115 Walgreen Road, RR3, Carp, ON K0A1L0 Tel: 613-836-2184 Fax: 613-836-3742 www.mcintoshperry.com	PROJECT NO: CCO-22-3130	FIGURE:	<b>2</b>
	Date	Aug., 11, 2022	
	GIS	SK	
	Checked By	JG	



**LEGEND**

- Approximate Site Boundary
- Borehole (location approximate)



**REFERENCE**

GIS data provided by the Ontario Ministry of Northern Development, Mines, Natural Resources and Forestry, 2022.

CLIENT:		<b>SLEEPWELL PROPERTY MANAGEMENT</b>	
PROJECT:		<b>PHASE TWO ESA 476 WILBROD STREET, OTTAWA, ONTARIO</b>	
TITLE:		<b>BOREHOLE LOCATION PLAN</b>	
<b>McINTOSH PERRY</b> <small>115 Walgreen Road, RR3, Carp, ON K0A1L0 Tel: 613-836-2184 Fax: 613-836-3742 www.mcintoshperry.com</small>	PROJECT NO:	CCO-22-3130	FIGURE:
	Date	Aug., 11, 2022	<b>2</b>
	GIS	SK	
	Checked By	JG	



# PHASE TWO ENVIRONMENTAL SITE ASSESSMENT 476 WILBROD STREET, OTTAWA, ON



TABLES

Table 1 - Soil Data  
Phase Two Environmental Site Assessment  
476 Wilbrod Street, Ottawa, Ontario

Sample Location			BH1	BH2	BH4	BH5	BH6	BH6	MECP Site Condition Standards **
Sample Identifier			BH1-SS4	BH2-SS8	BH4-SS12	BH5-SS16	BH6-SS18	DUP-1	
Sample Depth (mbgs)			1.81-2.66	1.81-2.65	2.87-3.17	2.87-4.03	2.61-2.87	2.61-2.87	
Sample Collection Date (dd/mm/yyyy)			20-07-2022	20-07-2022	20-07-2022	20-07-2022	20-07-2022	20-07-2022	
<b>Volatile Organic Compounds (VOCs)</b>			<b>Units</b>	<b>Detection Limit</b>					
Benzene	µg/g	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.21
Toluene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2.3
Ethylbenzene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2
m & p-Xylene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	No SCS
o-Xylene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	No SCS
Xylenes (Total)	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	3.1
<b>Petroleum Hydrocarbon (PHCs)</b>			<b>Units</b>	<b>Detection Limit</b>					
F1 (C6-C10)	µg/g	5	<5	<5	<5	<5	<5	<5	55
F1(C6-C10) minus BTEX	µg/g	5	<5	<5	<5	<5	<5	<5	55
F2 (C10-C16)	µg/g	10	<10	<10	<10	<10	<10	<10	98
F3 (C16-C34)	µg/g	50	<50	<50	<50	<50	<50	<50	300
F4 (C34-C50)	µg/g	50	<50	<50	<50	<50	<50	<50	2800

## Legend:

\*\*

Table 3 Standards for coarse textured soils in a non-potable groundwater environment for residential/parkland/institutional land use, as outlined in the MECP document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act".

No SCS

No Site Condition Standard

&lt;0.02

Non Detectable (i.e. the analytical result was below the method reporting limit for the test)

124

Sample result exceeds the corresponding Site Condition Standard

µg/g

microgram per gram

mbgs

metres below ground surface

# PHASE TWO ENVIRONMENTAL SITE ASSESSMENT 476 WILBROD STREET, OTTAWA, ON



APPENDIX A  
BOREHOLE LOGS



McIntosh Perry  
115 Walgreen Road  
Carp, ON K0A 1L0

# BORING NUMBER BH1

PAGE 1 OF 1

CLIENT Sleepwell Property Management

PROJECT NAME Phase II ESA

PROJECT NUMBER CCO-22-3130

PROJECT LOCATION 476 Wilbrod Street

DATE STARTED 22-7-20 COMPLETED 22-7-20

GROUND ELEVATION \_\_\_\_\_ HOLE SIZE \_\_\_\_\_

DRILLING CONTRACTOR Strata Drilling Group

GROUND WATER LEVELS:

DRILLING METHOD Direct Push

AT TIME OF DRILLING ---

LOGGED BY KC CHECKED BY DA

AT END OF DRILLING ---

NOTES \_\_\_\_\_

AFTER DRILLING ---

DEPTH (m)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
2	SS 1		Vapor = 0		0.11 (SW) Light Brown to Brown Sand	
	SS 2		Vapor = 5		0.96 (SW) Brown Sand	
	SS 3		Vapor = 10		1.11 (CL) Grey Clay	
	SS 4		Vapor = 590		1.81 (CL) Wet Clay, Soft to Firm	
					2.66	





Bottom of borehole at 2.66 meters.



McIntosh Perry  
115 Walgreen Road  
Carp, ON K0A 1L0

# BORING NUMBER BH2

**CLIENT** Sleepwell Property Management      **PROJECT NAME** Phase II ESA  
**PROJECT NUMBER** CCO-22-3130      **PROJECT LOCATION** 476 Wilbrod Street  
**DATE STARTED** 22-7-20      **COMPLETED** 22-7-20      **GROUND ELEVATION** \_\_\_\_\_      **HOLE SIZE** \_\_\_\_\_  
**DRILLING CONTRACTOR** Strata Drilling Group      **GROUND WATER LEVELS:**  
**DRILLING METHOD** Direct Push      **AT TIME OF DRILLING** ---  
**LOGGED BY** KC      **CHECKED BY** DA      **AT END OF DRILLING** ---  
**NOTES** Upper sand material caved into borehole, samples not true to overburden.      **AFTER DRILLING** ---

DEPTH (m)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
2	SS 5		Vapor = 5		0.10 (SP) Dry to Moist, Light Brown to Brown Sand, Fine to Coarse	
	SS 6		Vapor = 5		0.95 (SP) Dry, Light Brown to Dark Brown Sand	
	SS 7		Vapor = 0		1.49 (CL) Dry, Sand and Clay	
	SS 8		Vapor = 430		1.81 (CL) Dry, Sand and Clay	
					2.65	

Bottom of borehole at 2.65 meters.



McIntosh Perry  
115 Walgreen Road  
Carp, ON K0A 1L0

# BORING NUMBER BH3

**CLIENT** Sleepwell Property Management  
**PROJECT NUMBER** CCO-22-3130  
**DATE STARTED** 22-7-20 **COMPLETED** 22-7-20  
**DRILLING CONTRACTOR** Strata Drilling Group  
**DRILLING METHOD** Direct Push  
**LOGGED BY** KC **CHECKED BY** DA  
**NOTES** Refusal on inferred roots.

**PROJECT NAME** Phase II ESA  
**PROJECT LOCATION** 476 Wilbrod Street  
**GROUND ELEVATION** \_\_\_\_\_ **HOLE SIZE** \_\_\_\_\_  
**GROUND WATER LEVELS:**  
**AT TIME OF DRILLING** ---  
**AT END OF DRILLING** ---  
**AFTER DRILLING** ---

DEPTH (m)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
				0.35		
				0.55	(SP) Dry, Light Brown Sand	
				1.16	SANDY ORGANIC SOIL, SAND Sand, Topsoil, Some roots	
				1.37	Refusal on inferred Roots	

Refusal at 1.16 meters.  
Bottom of borehole at 1.37 meters.



McIntosh Perry  
115 Walgreen Road  
Carp, ON K0A 1L0

# BORING NUMBER BH4

**CLIENT** Sleepwell Property Management  
**PROJECT NUMBER** CCO-22-3130  
**DATE STARTED** 22-7-20 **COMPLETED** 22-7-20  
**DRILLING CONTRACTOR** Strata Drilling Group  
**DRILLING METHOD** Direct Push  
**LOGGED BY** KC **CHECKED BY** DA  
**NOTES** \_\_\_\_\_

**PROJECT NAME** Phase II ESA  
**PROJECT LOCATION** 476 Wilbrod Street  
**GROUND ELEVATION** \_\_\_\_\_ **HOLE SIZE** \_\_\_\_\_  
**GROUND WATER LEVELS:**  
**AT TIME OF DRILLING** ---  
**AT END OF DRILLING** ---  
**AFTER DRILLING** ---

DEPTH (m)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
					0.36	
			Vapor = 60		0.55 (SP) Dry Sand	
	SS 9				(SP) Dry to Moist Sand, Organic Scent	
2			Vapor = 60		1.71 (SP) Dry, Brown Sand	
	SS 10					
	SS 11		Vapor = 65		2.66 (SC) Dry to Moist, Clay, trace Sand	
	SS 12		Vapor = 75		2.87 (SC) Clay, Some Sand	
	SS 13		Vapor = 65		3.17 (CL) Grey Clay	
4					4.03	

Bottom of borehole at 4.03 meters.







McIntosh Perry  
115 Walgreen Road  
Carp, ON K0A 1L0

# BORING NUMBER BH6

PAGE 1 OF 1

CLIENT Sleepwell Property Management

PROJECT NAME Phase II ESA

PROJECT NUMBER CCO-22-3130

PROJECT LOCATION 476 Wilbrod Street

DATE STARTED 22-7-20 COMPLETED 22-7-20

GROUND ELEVATION \_\_\_\_\_ HOLE SIZE \_\_\_\_\_

DRILLING CONTRACTOR Strata Drilling Group

GROUND WATER LEVELS:

DRILLING METHOD Direct Push

AT TIME OF DRILLING ---

LOGGED BY KC CHECKED BY DA

AT END OF DRILLING ---

NOTES Some topsoil caved into sample at 0.55 m depth.

AFTER DRILLING ---

DEPTH (m)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0.25					Topsoil	
0.55					(SP) Dry, Light Brown to Brown Sand	
					(SP) Dry Sand	
	SS 17		Vapor = 60			
1.71					(SP) Dry Sand	
	SS 19		Vapor = 55			
2.61						
2.76	SS 18		Vapor = 60		(SC) Sand and Clay	
2.87					(SC) Dry, Clay some Sand	
	SS 20		Vapor = 55		(CL) Moist, Grey Clay	
4.03						

Bottom of borehole at 4.03 meters.

ENVIRONMENTAL BH CCO-22-3130\_BH LOGS\_10AUG22.GPJ GINT STD CANADA LAB.GDT 22-8-10

# PHASE TWO ENVIRONMENTAL SITE ASSESSMENT 476 WILBROD STREET, OTTAWA, ON



## APPENDIX B LABORATORY CERTIFICATES OF ANALYSIS



CLIENT NAME: MCINTOSH PERRY LIMITED  
RR#3 115 WALGREEN ROAD  
CARP, ON K0A1L0  
(613) 836-2184  
ATTENTION TO: Kevin Cortez  
PROJECT: CCO 22-3130  
AGAT WORK ORDER: 22Z923370  
TRACE ORGANICS REVIEWED BY: Pinkal Patel, Report Reviewer  
DATE REPORTED: Jul 29, 2022  
PAGES (INCLUDING COVER): 7  
VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

\*Notes

*Disclaimer:*

- *All work conducted herein has been done using accepted standard protocols, and generally accepted practices and methods. AGAT test methods may incorporate modifications from the specified reference methods to improve performance.*
- *All samples will be disposed of within 30 days after receipt unless a Long Term Storage Agreement is signed and returned. Some specialty analysis may be exempt, please contact your Client Project Manager for details.*
- *AGAT's liability in connection with any delay, performance or non-performance of these services is only to the Client and does not extend to any other third party. Unless expressly agreed otherwise in writing, AGAT's liability is limited to the actual cost of the specific analysis or analyses included in the services.*
- *This Certificate shall not be reproduced except in full, without the written approval of the laboratory.*
- *The test results reported herewith relate only to the samples as received by the laboratory.*
- *Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, warranties of merchantability, fitness for a particular purpose, or non-infringement. AGAT assumes no responsibility for any errors or omissions in the guidelines contained in this document.*
- *All reportable information as specified by ISO/IEC 17025:2017 is available from AGAT Laboratories upon request.*



## Certificate of Analysis

AGAT WORK ORDER: 22Z923370

PROJECT: CCO 22-3130

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: MCINTOSH PERRY LIMITED

ATTENTION TO: Kevin Cortez

SAMPLING SITE:

SAMPLED BY:

### O. Reg. 153(511) - PHCs F1 - F4 (Soil)

DATE RECEIVED: 2022-07-21

DATE REPORTED: 2022-07-29

Parameter	Unit	SAMPLE DESCRIPTION:					RDL	BH1-SS4	BH2-SS8	BH4-SS12	BH5-SS16	BH6-SS18
		SAMPLE TYPE:						Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:						2022-07-20 11:32	2022-07-20 13:05	2022-07-20 14:10	2022-07-20 14:50	2022-07-20 15:08
		G / S: A	G / S: B	G / S: C	G / S: D			4122557	4122559	4122560	4122561	4122562
Benzene	µg/g	0.02	0.02	0.02	0.034	0.02	<0.02[<A]	<0.02[<A]	<0.02[<A]	<0.02[<A]	<0.02[<A]	
Toluene	µg/g	0.2	0.2	0.2	7.8	0.05	<0.05[<A]	<0.05[<A]	<0.05[<A]	<0.05[<A]	<0.05[<A]	
Ethylbenzene	µg/g	0.05	0.05			0.05	<0.05[<A]	<0.05[<A]	<0.05[<A]	<0.05[<A]	<0.05[<A]	
m & p-Xylene	µg/g					0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
o-Xylene	µg/g					0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Xylenes (Total)	µg/g	0.05	0.05	0.091	3	0.05	<0.05[<A]	<0.05[<A]	<0.05[<A]	<0.05[<A]	<0.05[<A]	
F1 (C6 - C10)	µg/g	25				5	<5[<A]	<5[<A]	<5[<A]	<5[<A]	<5[<A]	
F1 (C6 to C10) minus BTEX	µg/g	25	25	25	25	5	<5[<A]	<5[<A]	<5[<A]	<5[<A]	<5[<A]	
F2 (C10 to C16)	µg/g	10	10	10	26	10	<10[<A]	<10[<A]	<10[<A]	<10[<A]	<10[<A]	
F3 (C16 to C34)	µg/g	240	240	240	1700	50	<50[<A]	<50[<A]	<50[<A]	<50[<A]	<50[<A]	
F4 (C34 to C50)	µg/g	120	120	2800	3300	50	<50[<A]	<50[<A]	<50[<A]	<50[<A]	<50[<A]	
Gravimetric Heavy Hydrocarbons	µg/g	120				50	NA[B]	NA[B]	NA[B]	NA[B]	NA[B]	
Moisture Content	%					0.1	41.0	28.5	42.4	23.3	6.3	
Surrogate	Unit	Acceptable Limits										
Toluene-d8	% Recovery	60-140						90	106	115	113	111
Terphenyl	%	60-140						68	77	86	90	110

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 22Z923370

PROJECT: CCO 22-3130

5835 COOPERS AVENUE  
 MISSISSAUGA, ONTARIO  
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<http://www.agatlabs.com>

CLIENT NAME: MCINTOSH PERRY LIMITED

ATTENTION TO: Kevin Cortez

SAMPLING SITE:

SAMPLED BY:

### O. Reg. 153(511) - PHCs F1 - F4 (Soil)

DATE RECEIVED: 2022-07-21

DATE REPORTED: 2022-07-29

Parameter	Unit	G / S: A	G / S: B	G / S: C	G / S: D	SAMPLE DESCRIPTION:	
						RDL	4122563
							Dup
							Soil
							DATE SAMPLED: 2022-07-20
Benzene	µg/g	0.02	0.02	0.02	0.034	0.02	<0.02[<A]
Toluene	µg/g	0.2	0.2	0.2	7.8	0.05	<0.05[<A]
Ethylbenzene	µg/g	0.05	0.05			0.05	<0.05[<A]
m & p-Xylene	µg/g					0.05	<0.05
o-Xylene	µg/g					0.05	<0.05
Xylenes (Total)	µg/g	0.05	0.05	0.091	3	0.05	<0.05[<A]
F1 (C6 - C10)	µg/g	25				5	<5[<A]
F1 (C6 to C10) minus BTEX	µg/g	25	25	25	25	5	<5[<A]
F2 (C10 to C16)	µg/g	10	10	10	26	10	<10[<A]
F3 (C16 to C34)	µg/g	240	240	240	1700	50	<50[<A]
F4 (C34 to C50)	µg/g	120	120	2800	3300	50	<50[<A]
Gravimetric Heavy Hydrocarbons	µg/g	120				50	NA[B]
Moisture Content	%					0.1	40.4
Surrogate	Unit	Acceptable Limits					
Toluene-d8	% Recovery	60-140					112
Terphenyl	%	60-140					107

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 22Z923370

PROJECT: CCO 22-3130

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: MCINTOSH PERRY LIMITED

ATTENTION TO: Kevin Cortez

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - PHCs F1 - F4 (Soil)

DATE RECEIVED: 2022-07-21

DATE REPORTED: 2022-07-29

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: A Refers to Table 1: Full Depth Background Site Condition Standards - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use, B Refers to O. Reg. 406/19 TABLE 1: Full Depth Background Site Condition - RPIC, C Refers to O. Reg. 406/19 TABLE 2.1: Full Depth Potable Ground Water Condition Volume Independent - RP, D Refers to O. Reg. 406/19 TABLE 3.1: Full Depth Non-Potable Ground Water Condition Volume Independent - Ind/Com/Community  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

4122557-4122563 Results are based on sample dry weight.  
The C6-C10 fraction is calculated using Toluene response factor.  
Xylenes is a calculated parameter. The calculated value is the sum of m&p-Xylene and o-Xylene.  
C6-C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.  
The calculated parameters are non-accredited. The parameters that are components of the calculation are accredited.  
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.  
Gravimetric Heavy Hydrocarbons are not included in the Total C16-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.  
The chromatogram has returned to baseline by the retention time of nC50.  
Total C6 - C50 results are corrected for BTEX contribution.  
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.  
nC6 and nC10 response factors are within 30% of Toluene response factor.  
nC10, nC16 and nC34 response factors are within 10% of their average.  
C50 response factor is within 70% of nC10 + nC16 + nC34 average.  
Linearity is within 15%.  
Extraction and holding times were met for this sample.  
Fractions 1-4 are quantified with the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.  
Quality Control Data is available upon request.

Analysis performed at AGAT Toronto (unless marked by \*)

Certified By:

## Quality Assurance

 CLIENT NAME: MCINTOSH PERRY LIMITED  
 PROJECT: CCO 22-3130  
 SAMPLING SITE:

 AGAT WORK ORDER: 22Z923370  
 ATTENTION TO: Kevin Cortez  
 SAMPLED BY:

### Trace Organics Analysis

RPT Date: Jul 29, 2022			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PHCs F1 - F4 (Soil)															
Benzene	4136162		<0.02	<0.02	NA	< 0.02	96%	60%	140%	101%	60%	140%	81%	60%	140%
Toluene	4136162		<0.05	<0.05	NA	< 0.05	110%	60%	140%	113%	60%	140%	108%	60%	140%
Ethylbenzene	4136162		<0.05	<0.05	NA	< 0.05	93%	60%	140%	102%	60%	140%	103%	60%	140%
m & p-Xylene	4136162		<0.05	<0.05	NA	< 0.05	107%	60%	140%	99%	60%	140%	106%	60%	140%
o-Xylene	4136162		<0.05	<0.05	NA	< 0.05	101%	60%	140%	103%	60%	140%	106%	60%	140%
F1 (C6 - C10)	4136162		<5	<5	NA	< 5	89%	60%	140%	94%	60%	140%	95%	60%	140%
F2 (C10 to C16)	4121970		< 10	< 10	NA	< 10	114%	60%	140%	124%	60%	140%	74%	60%	140%
F3 (C16 to C34)	4121970		< 50	< 50	NA	< 50	93%	60%	140%	108%	60%	140%	62%	60%	140%
F4 (C34 to C50)	4121970		< 50	< 50	NA	< 50	80%	60%	140%	114%	60%	140%	97%	60%	140%

Comments: When the average of the sample and duplicate results is less than 5x the RDL, the Relative Percent Difference (RPD) will be indicated as Not Applicable (NA).

Certified By: \_\_\_\_\_



## Method Summary

CLIENT NAME: MCINTOSH PERRY LIMITED

AGAT WORK ORDER: 22Z923370

PROJECT: CCO 22-3130

ATTENTION TO: Kevin Cortez

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/MS
Toluene	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/MS
Ethylbenzene	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/MS
m & p-Xylene	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/MS
o-Xylene	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/MS
Xylenes (Total)	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/MS
F1 (C6 - C10)	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	modified from CCME Tier 1 Method	P&T GC/FID
Toluene-d8	VOL-91-5009	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
F2 (C10 to C16)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F3 (C16 to C34)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F4 (C34 to C50)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	modified from CCME Tier 1 Method	BALANCE
Moisture Content	VOL-91-5009	modified from CCME Tier 1 Method	BALANCE
Terphenyl	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID





# AGAT Laboratories

5835 Coopers Avenue  
Mississauga, Ontario L4Z 1Y2  
Ph: 905.712.5100 Fax: 905.712.5122  
webearth.agatlabs.com

## Laboratory Use Only

Work Order #: 222923370  
Cooler Quantity: 1 medium one-bagged ice  
Arrival Temperatures: 7.9 7.7 7.8  
L.T. -> 6.9 7.6 7.8  
Custody Seal Intact:  Yes  No  N/A  
Notes: Bagged Ice

## Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

### Report Information:

Company: McIntosh Perry Consulting Engineers  
Contact: Kevin Cortez  
Address: 115 Walgreen Rd. Corp  
613 266 7641 Fax: \_\_\_\_\_  
Reports to be sent to: K.cortez@mcintoshperry.com  
1. Email: \_\_\_\_\_  
2. Email: d.arnott@mcintoshperry.com

### Regulatory Requirements:

(Please check all applicable boxes)

Regulation 153/04  Excess Soils R406  
Table 1, 2, 3 Indicate One Table 1, 2, 1, 3.1 Indicate One  
 Ind/Com  Sewer Use  
 Res/Park  Sanitary  Storm  
 Agriculture  Prov. Water Quality Objectives (PWQO)  
Soil Texture (Check One)  CCME  Other  
 Coarse  Fine Indicate One

### Turnaround Time (TAT) Required:

Regular TAT (Most Analysis)  5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

3 Business Days  2 Business Days  Next Business Day

OR Date Required (Rush Surcharges May Apply):

Please provide prior notification for rush TAT  
\*TAT is exclusive of weekends and statutory holidays

For 'Same Day' analysis, please contact your AGAT CPM

### Project Information:

Project: CCO 22-3130  
Site Location: \_\_\_\_\_  
Sampled By: \_\_\_\_\_  
AGAT ID #: \_\_\_\_\_ PO: \_\_\_\_\_  
Please note: If quotation number is not provided, client will be billed full price for analysis.

### Invoice Information:

Bill To Same: Yes  No

Company: \_\_\_\_\_  
Contact: \_\_\_\_\_  
Address: \_\_\_\_\_  
Email: \_\_\_\_\_

### Is this submission for a Record of Site Condition?

Yes  No

### Report Guideline on Certificate of Analysis

Yes  No

### Sample Matrix Legend

**B** Biota  
**GW** Ground Water  
**O** Oil  
**P** Paint  
**S** Soil  
**SD** Sediment  
**SW** Surface Water

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Y / N	Field Filtered - Metals, Hg, CrVI, DOC	0. Reg 153	0. Reg 558	0. Reg 406	Potentially Hazardous or High Concentration (Y/N)
								Metals & Inorganics	Metals - <input type="checkbox"/> CrVI, <input type="checkbox"/> Hg, <input type="checkbox"/> HWSB	Landfill Disposal Characterization TCLP: <input type="checkbox"/> TCLP, <input type="checkbox"/> Metals, <input type="checkbox"/> VOCs, <input type="checkbox"/> SVOCs, <input type="checkbox"/> PCBs, <input type="checkbox"/> BTEX, <input type="checkbox"/> F1, F4 PHCs	
BH1-554	20/7/22	11:32 AM	2	S							
BH2-558	20/7/22	1:05 PM	2	S							
BH4-5512	20/7/22	2:10 PM	2	S							
BH5-5516	20/7/22	2:50 PM	2	S							
BH6-5518	20/7/22	3:08 PM	2	S							
Dup + Dup	20/7/22	AM	2	S							
		AM									
		PM									
		AM									
		PM									
		AM									
		PM									

Samples Relinquished By (Print Name and Sign): <u>Kevin Cortez</u>	Date: <u>21/7/22</u>	Time: <u>8:30 AM</u>	Samples Received By (Print Name and Sign): <u>C. Cortez</u>	Date: <u>JUL 21 2022</u>	Time: <u>8:30</u>
Samples Relinquished By (Print Name and Sign): <u>CC to pino</u>	Date: <u>JUL 21 2022</u>	Time: <u>10:00</u>	Samples Received By (Print Name and Sign): <u>Anthony Dasilva</u>	Date: <u>JUL 21 2022</u>	Time: <u>8:49</u>
Samples Relinquished By (Print Name and Sign):	Date:	Time:	Samples Received By (Print Name and Sign):	Date:	Time:

No: **T122822**



## GRAIN SIZE DISTRIBUTION TEST DATA

2022-08-12

**Client:** Sleepwell Property

**Project:** 476 Wilbrod

**Project Number:** CCO22-3130

**Location:** BH1 SS4

**Sample Number:** SS4

**Material Description:** Silty Clay trace Sand

**Date Received:** Aug 8,2022

**Testing Remarks:** Note: Specific Gravity of this soil is assumed.

**Tested By:** R.C

**Test Date:** Aug 8,2022

**Checked By:** J.Hopwood-Jones

**Title:** Lab Manager

### Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer	Percent Retained
237.16	0.00	0.00	2.00mm	0.00	100.0	0.0
52.62	0.00	0.00	.850mm	0.00	100.0	0.0
			0.425mm	0.03	99.9	0.1
			0.250mm	0.09	99.8	0.2
			0.106mm	0.90	98.3	1.7
			0.075mm	1.05	98.0	2.0

### Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 52.62

Table of composite correction values:

Temp., deg. C:      21.0      21.3

Comp. corr.:        -6.5      -7.0

Meniscus correction only = -1.0

Specific gravity of solids = 2.775

Hydrometer type = 152H

Hydrometer effective depth equation:  $L = 16.7507 - 0.190 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
1.00	21.0	59.0	52.5	0.0130	58.0	5.7	0.0311	97.1	2.9
2.00	21.0	58.5	52.0	0.0130	57.5	5.8	0.0222	96.2	3.8
5.00	21.0	57.5	51.0	0.0130	56.5	6.0	0.0143	94.3	5.7
15.00	21.0	56.0	49.5	0.0130	55.0	6.3	0.0084	91.6	8.4
30.00	21.0	53.5	47.0	0.0130	52.5	6.8	0.0062	86.9	13.1
60.00	21.0	51.0	44.5	0.0130	50.0	7.3	0.0045	82.3	17.7
250.00	21.3	44.0	37.0	0.0129	43.0	8.6	0.0024	68.4	31.6
1440.00	21.3	34.0	27.0	0.0129	33.0	10.5	0.0011	49.9	50.1

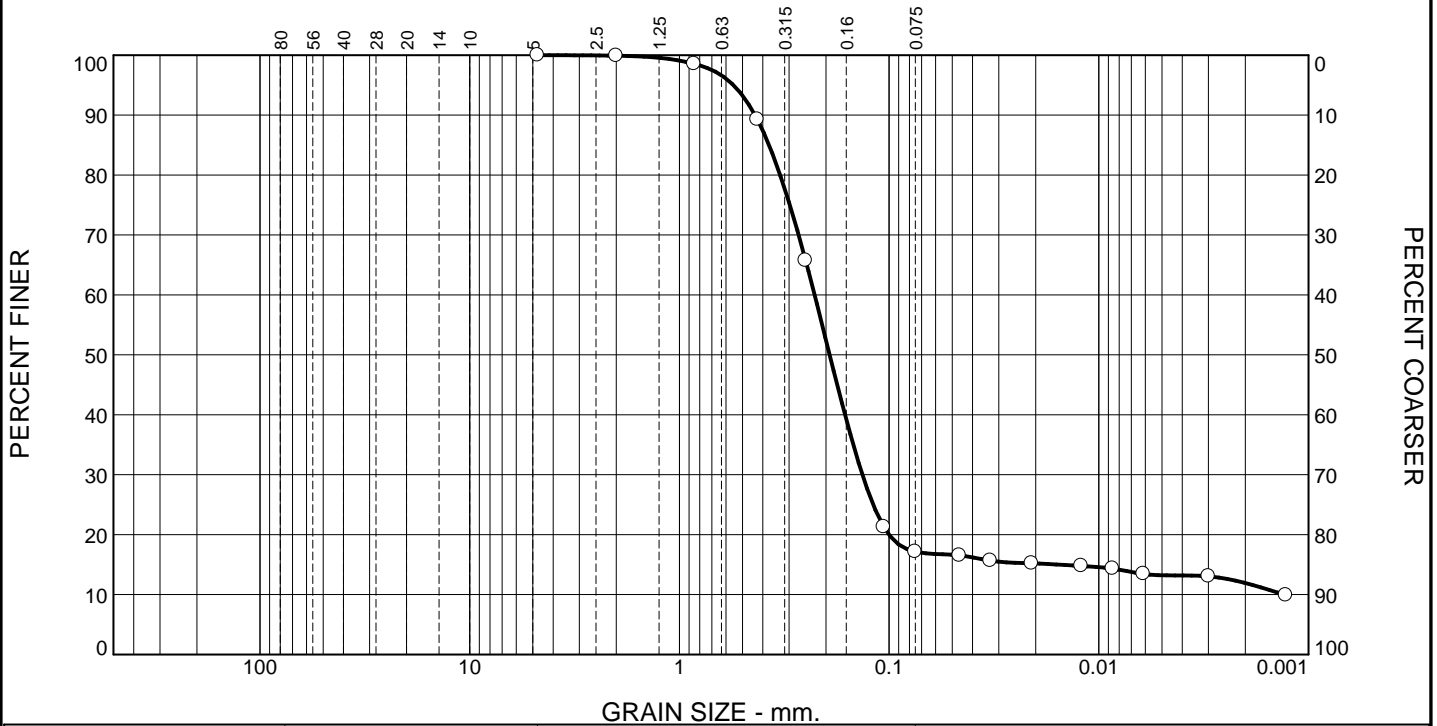
## Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.1	1.9	2.0	33.9	64.1	98.0

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
						0.0011	0.0017	0.0040	0.0054	0.0075	0.0168

<b>Fineness Modulus</b>
0.01

# Particle Size Distribution Report



% +75mm	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	10.6	72.1	5.3	11.9

TEST RESULTS			
Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
4.75mm	100.0		
2.00mm	99.9		
.850mm	98.5		
0.425mm	89.3		
0.250mm	65.7		
0.106mm	21.3		
0.075mm	17.2		
0.0462 mm.	16.5		
0.0329 mm.	15.7		
0.0209 mm.	15.2		
0.0121 mm.	14.8		
0.0086 mm.	14.3		
0.0061 mm.	13.4		
0.0030 mm.	13.0		
0.0013 mm.	9.9		

\* (no specification provided)

**Material Description**

Sand some Clay trace Silt

**Atterberg Limits (ASTM D 4318)**

PL= \_\_\_\_\_ LL= \_\_\_\_\_ PI= \_\_\_\_\_

**Classification**

USCS (D 2487)= \_\_\_\_\_ AASHTO (M 145)= \_\_\_\_\_

**Coefficients**

D<sub>90</sub>= 0.4357    D<sub>85</sub>= 0.3740    D<sub>60</sub>= 0.2266  
 D<sub>50</sub>= 0.1921    D<sub>30</sub>= 0.1341    D<sub>15</sub>= 0.0156  
 D<sub>10</sub>= 0.0013    C<sub>u</sub>= 173.27    C<sub>c</sub>= 60.66

**Remarks**

Note: Specific Gravity of this soil is assumed.  
F.M.=0.93

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Date Received: Aug 8,2022    Date Tested: Aug 8,2022

Tested By: R.C

Checked By: J.Hopwood-Jones

Title: Lab Manager

Location: BH5 SS15  
Sample Number: SS15

Date Sampled: \_\_\_\_\_

## McINTOSH PERRY

Client: Sleepwell Property  
Project: 476 Wilbrod

Project No: CCO22-3130

Figure \_\_\_\_\_

These results are for the exclusive use of the client for whom they were obtained.

## GRAIN SIZE DISTRIBUTION TEST DATA

2022-08-12

**Client:** Sleepwell Property

**Project:** 476 Wilbrod

**Project Number:** CCO22-3130

**Location:** BH5 SS15

**Sample Number:** SS15

**Material Description:** Sand some Clay trace Silt

**Date Received:** Aug 8,2022

**Testing Remarks:** Note: Specific Gravity of this soil is assumed.

**Tested By:** R.C

**Test Date:** Aug 8,2022

**Checked By:** J.Hopwood-Jones

**Title:** Lab Manager

### Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer	Percent Retained
480.49	0.00	0.00	4.75mm	0.00	100.0	0.0
			2.00mm	0.47	99.9	0.1
109.91	0.00	0.00	.850mm	1.49	98.5	1.5
			0.425mm	11.68	89.3	10.7
			0.250mm	37.58	65.7	34.3
			0.106mm	86.48	21.3	78.7
			0.075mm	91.03	17.2	82.8

### Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 99.9

Weight of hydrometer sample = 109.91

Automatic temperature correction

Composite correction (fluid density and meniscus height) at 20 deg. C = -3.5

Meniscus correction only = -1.0

Specific gravity of solids = 2.775

Hydrometer type = 152H

Hydrometer effective depth equation:  $L = 16.6007 - 0.187 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
1.00	21.1	22.0	18.7	0.0130	21.0	12.7	0.0462	16.5	83.5
2.00	21.1	21.0	17.7	0.0130	20.0	12.9	0.0329	15.7	84.3
5.00	21.1	20.5	17.2	0.0130	19.5	13.0	0.0209	15.2	84.8
15.00	21.1	20.0	16.7	0.0130	19.0	13.0	0.0121	14.8	85.2
30.00	21.1	19.5	16.2	0.0130	18.5	13.1	0.0086	14.3	85.7
60.00	21.1	18.5	15.2	0.0130	17.5	13.3	0.0061	13.4	86.6
250.00	21.3	18.0	14.7	0.0129	17.0	13.4	0.0030	13.0	87.0
1440.00	21.1	14.5	11.2	0.0130	13.5	14.1	0.0013	9.9	90.1

## Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.1	10.6	72.1	82.8	5.3	11.9	17.2

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
	0.0013	0.0156	0.1001	0.1341	0.1622	0.1921	0.2266	0.3309	0.3740	0.4357	0.5524

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
0.93	173.27	60.66